Manual:

PGI
Personal Globe Inventory

Tracey, T. J. G. (2021)

Tracey, T. J. G. (2021). PGI. Personal Globe Inventory [Test description, manual, questionnaires PGI-Activities, PGI-Occupations, PGI-Short, PGI-Mini, scoring PGI/PGI-Short/PGI-Mini, and case examples]. In Leibniz Institute for Psychology (ZPID) (Ed.), Open Test Archive. Trier: ZPID. https://doi.org/10.23668/psycharchives.4545

PERSONAL GLOBE INVENTORY
PGI, PGI-Short, and PGI-Mini

Manual Version 1.5

Terence J. G. Tracey

2019

The Personal Globe Inventory (PGI) is designed to measure your interests in activities and help you relate these interests to life decisions such as what to choose for a career and/or a major focus of study, as well as what hobbies and out of work interests you may find rewarding. The goal of the PGI is to give you a model to think about interests and relate how your interests are similar and different from those of other people.

This manual serves as an update of the original manual published in 2002 and the manual for the PGI-Short published in 2010 both in the *Journal of Vocational Behavior* (Tracey, 2002, 2010). The differences here reflect only the inclusions of newer norms for the test taker and integration of scores with O*NET occupations and majors.

There are four versions of the PGI, the extended PGI which is only available on a standalone PC program (available at http://tracey.faculty.asu.edu/), the regular PGI and the PGI-Short; the latter two of which are available on the internet (https://pgi.asu.edu) and the PGI-Mini The extended PGI contains three different sets of items: 108 occupation preference, 113 activity preference and 113 activity competence items . The regular PGI contains only the 113 activity preference and 113 activity competence items. Given that Tracey (2002) found that the different scale types were equally valid, the regular PGI omitting the occupation preference items was adopted as the standard. Finally the PGI-Short was developed using Item Response Theory (IRT) analysis (Tracey, 2010) and consists of only 40 activity preference and 40 activity competence items. Given its shorter length, the PGI-S does not provide all of the scores of the regular PGI. The PGI-Mini is very brief, only 20 items, and focuses only on activity preference.

How to use the PGI

The PGI is similar to someone asking you a series of questions about what you like to do and then summarizing your answers into an easy to understand set of scales that represent major interest areas. The goal is to help you organize your thinking about your interests. An advantage to using a formal interest measure like the PGI is that you also get to see how your interests compare to those of others. The information reported can help you think through important life decisions by providing information on:

-what to choose for a career
-what to choose for a major or program of study
-how am I different from others in terms of what I like to do
-new career possibilities that I had not previously considered
-confirm current career plans

-find out new outside-career interests
-help select both a career and hobbies to make me happiest

In general, the more your career, area of study, and outside of work activities match your interests, the more satisfied you will be. The goal is to provide information on your interest area so that you can choose those areas in which you will most likely be satisfied. Examine the scores reported in your PGI profile and use them to think further about your choices.

The PGI does NOT measure your actual abilities, only what you like and feel good at doing. So the scores do not represent how well you will perform in different activities or jobs, only the extent to which you might enjoy doing them.

The PGI is broad enough to provide a wealth of information on a wide range of interest areas. There are over 151 separate scores that are calculated for each individual. However this is far too many scales to be helpful to most all test-takers and further, not all the information is relevant for all individuals. To better enable you to use the most relevant information, only those scores most pertinent to you will be presented. The reporting of scores and the interpretive information are thus geared to you individually. No two individuals will have identical scores reported nor will similar interpretations be made. Indeed, if you compared your report with those of others, you may find that there is little similarity in terms of what is reported, with each having very different charts reported. Of course, you are provided with a complete set of scores on your Technical Information Summary, but only the most important scales are selected for graphing.

Personal Globe model:

Research (Tracey,1997, 2002, 2010; Tracey & Rounds, 1996) has demonstrated that the major interest areas can be represented as points on the surface of a three-dimensional globe, those interest areas closer to each other are more similar and those far apart are dissimilar. The globe is defined by the three dimensions of People versus Things; Data versus Ideas and Prestige. The most important set of interest areas are those that exist on the equator and this set is called the Basic Interest Area Scales which form the basis of the PGI interpretation (depicted in gray below). This Basic Interest Area is the typical way to represent interests. The most common example of this Basic Interest Circle is The six personality types of John Holland (1997). These six types (Realistic, Investigative, Artistic, Social, Enterprising and Conventional, collectively referred to as RIASEC) are included in almost all interest inventories.

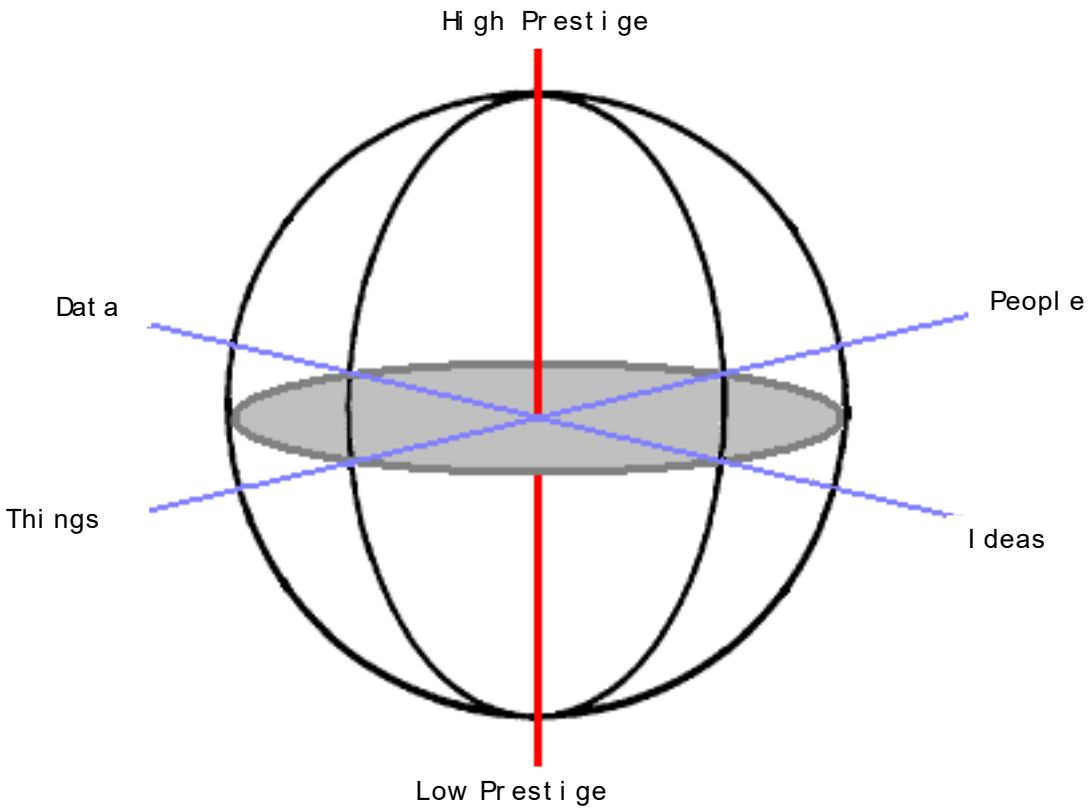


Figure 1: Three dimensions of the Personal Globe

Using this model one can "slice up" the globe in any number of different sections. The Personal Globe uses eight types instead of the Holland's six. It was thought that the eight type model was more easily understood by all and were more specific than the more global scales of Holland. As such the arrangement of the 6 RIASEC types and the 8 PGI octant scales and the two underlying dimensions of People-Things and Data-Ideas are represented in Figure 2. Note that the closer the points are the more similar they are. [Definitions for all of the scales are contained in Appendix 1]

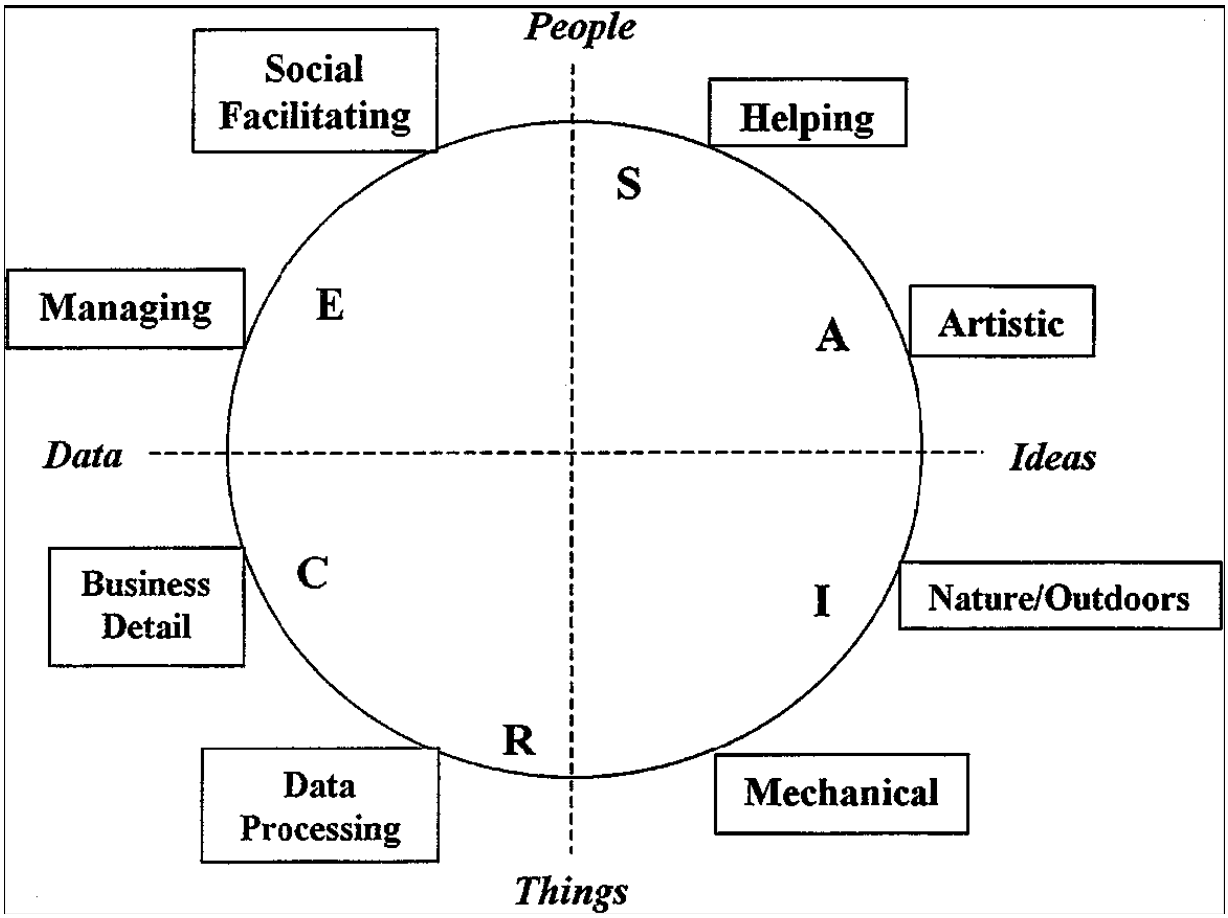


Figure 2. Personal Globe representation of the Basic Interest Circle.

Basic Interest Areas: PGI Octant Scores

Social Facilitating
Scale measures interest in working with other people by selling, assisting, providing information or administering such services. Occupations related to this area include: Social Service Director, Personnel Director, Publicity Director, Salesperson, Travel Agent, and Aerobics Instructor.

Managing
An interest in managing and planning the major activities of business or organizations. The scale includes such activities as processing information, problem solving and decision making, forecasting and planning ahead, communication to others, organizing, coordinating, and supervising others, and persuading. Office Manager, Department Store Manager, Sales Clerk, Sales Manager, and Hotel Manager are examples of occupations scoring high on this scale.

Business Detail
Accounting, assessing, estimating, advising, and budgeting are interests of people scoring high on this scale. Occupations such as Financial Analyst, Bank Examiner, Cost Estimator, and Certified Public Accountant are related to this area.

Data Processing
An interest in the use of mathematics and systems for the analysis and interpretation of data and for clarifying and solving technical problems are represented by this scale. Electrical Engineer, Computer Programmer, and Microelectronics Technician are some of the occupations scoring high on this scale.

Mechanical
Understanding how machinery works and designing, installing and maintaining machinery are the main focus of this scale. Machinery includes large engines to machine tools. Occupational examples are: Airplane Mechanic, Auto Mechanic, Avionics Technician, Chemical Engineer, and Machinist.

Nature/Outdoors
Applying knowledge of the life sciences to plants and animals are interests shared by Ecologist, Forester, Oceanographer, Naturalist, Fish & Game Warden, and Veterinarian.

Artistic
Scale measures interest in visual, performing and literary arts as expressed in occupations such Sculptor, Musician, Composer, Poet, Playwright, and Author.

Helping
An interest in helping relationships with people from all age groups is measured by this scale. Liking to teach, provide for, support, and counsel are interests of people in occupations such as Speech Therapist, School Counselor, Social Worker, Child Care Worker, Family Therapist, and Educational Psychologist.

Basic Interest Areas: PGI Holland Scores

Realistic: Preferring to work with ones hands and with objects. Occupations include civil engineers and carpenters.

Investigative: Preferring to work with ideas and figure out how things work. Occupations include scientists and mathematicians.

Artistic: Preferring to work with ideas but through artistic expression. Occupations include painters, dancers and authors.

Social: Preferring to spend time with others and helping others. Occupations include teachers and social workers.

Enterprising: Preferring to work with others but through persuasion or selling. Occupations include sales and managers.

Conventional: Preference for routine, structured activities. Occupations include accountant and bank examiner.

In addition to the basic interest circle, the Personal Globe incorporates the added dimension of prestige. When this is added, a set of 18 points equally distributed around the globe result. The 18 scales are represented in Figure 3. Again, the closer the scales are the more similar they are. So in addition to the PGI octant scales around the equator, there are 5 high prestige scales and 5 low prestige scales.

Higher Prestige Interest Areas (Some scales omitted in PGI-Short)

Social Sciences (PGI only)
Helping others solve medical and psychological problems in a personal manner are activities associated with occupations such as Clinical Psychologist, Psychiatric Case Worker, Pediatrician, and Family Physician.

Influence
This scale measures an interest in leading and directing people in business, politics, and science. People scoring high like to influencing people's behavior through persuasion and are found in occupations such as Scientific Research Director, Research Scientist, Surgeon, Physicist, and Astronomer.

Business Systems (PGI only)
Writing and designing programs and systems, and applying this knowledge to business and finance is the main focus of this scale. Business Computer Specialist, Business Programmer, System Analyst, and Computer Consultant are examples of occupations scoring high.

Financial Analysis (PGI only)
People in this interest area work directly with customers on their finances. Occupational examples are: Budget Consultant, Business Management Analyst, Market Research Analyst, Personal Investment Analyst, Consumer Affairs Director, and Stockbroker.

Science (PGI only)
Studying phenomena, conducting research, and developing knowledge in biological, physical, and behavior sciences are the areas of interest tapped by this scale. Biologist, Anthropologist, Earth Scientist, Geologist, and Chemist are some of the occupations related to this area.

Lower Prestige Interest Areas (Some scales omitted in PGI-Short)

Quality Control (PGI only)
Checking and protecting the quality and safety of products, materials, and services are interests of people who have high scores on this scale. People with high scores are often found in occupations like Locksmith, Bridge Inspector, Building Inspector, and High School Shop Teacher.

Manual Work
An interest in operating machinery or vehicles and attendant services and working in occupations that have minimal training requirements is expressed by people in these occupations: Maid, Meter Reader, Window Cleaner, Ride Attendant, Cloakroom Attendant, and Bus Driver

Personal Service (PGI only)
Interests in activities offering help to people in everyday transactions is the focus of this scale. People scoring high on the scale like serving others food and drink, giving them information, helping them buy clothes, and seeing to their comfort. Examples of occupations are: Flight Attendant, Sightseeing Guide, Waiter/Waitress, Travel Guide, and Personal Shopper.

Construction/Repair (PGI only)
An interest in working outdoors, working with ones hands building structures and operating or repairing machines is the focus of this scale. Occupations include: Bulldozer Operator, Crane Operator, Tree Pruner, Construction Worker, Roofer, and Building Contractor

Basic Services (PGI only)
This scale measures interest in selling products and services, greeting people, making reservations, renting equipment, and cleaning. People scoring high usually work directly with the customer in such occupations as Receptionist, Hotel Clerk, Hair Stylist, Mail Clerk, Escort, and Secretary

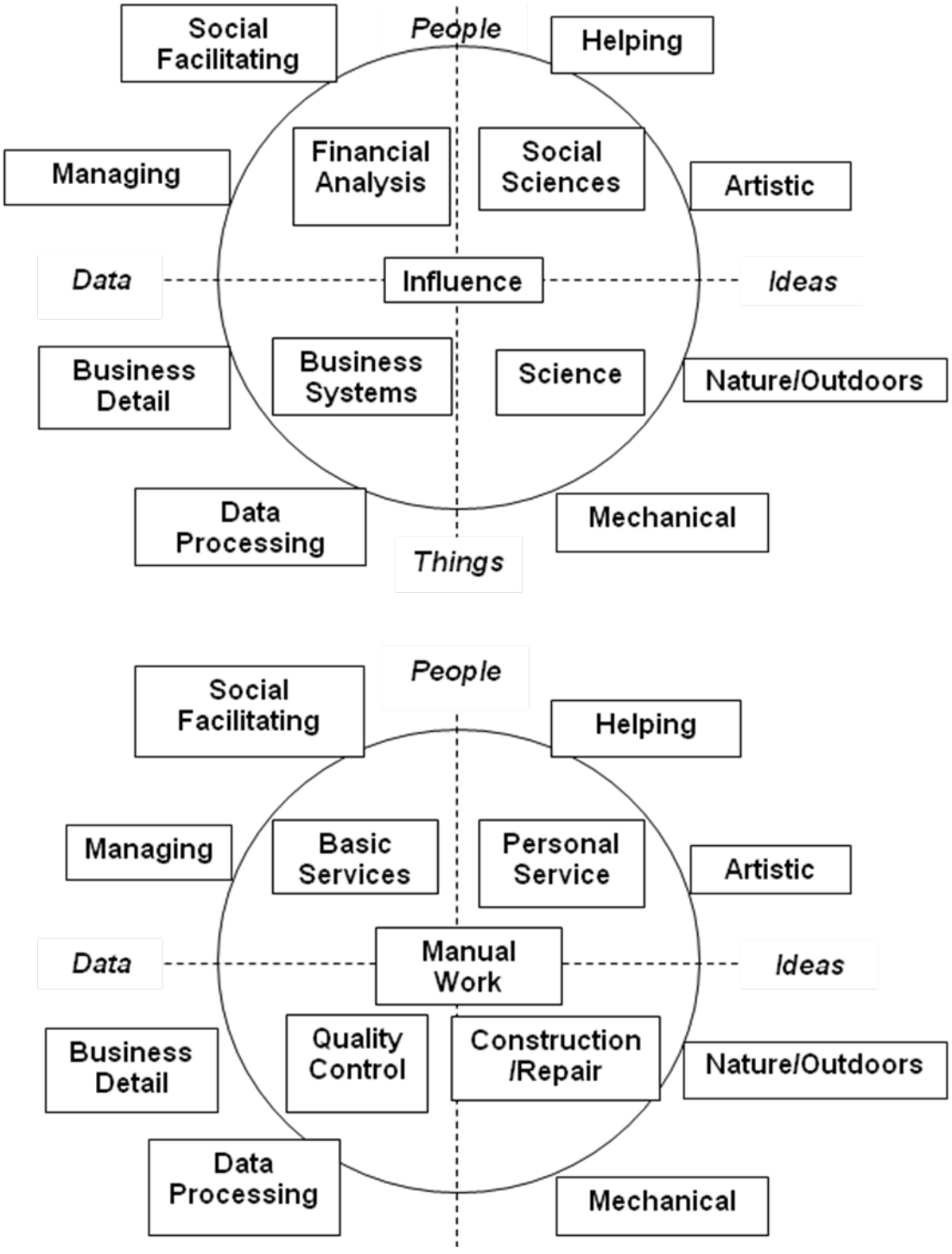


Figure 3: Complete mapping of 18 PGI scales and the three dimensions. Top part is a representation of the globe looking down from the north pole and the bottom is a representation looking up from the south pole

So the Personal Globe model is a very general representation of interests. It carries many scales and can provide a very complete representation of a person's interests and how these can match the occupational and educational world.

Test description

PGI

The PGI is composed of three sets of items: 108 Occupational titles to which respondents endorse their liking from 1 = Strongly Dislike to 7 = Strongly Like; 113 Occupational activities to which the respondents endorse their liking (1 = Strongly Dislike to 7 = Strongly Like) and their perceived competence (1 = Unable to do to 7 = Very Competent). In the extended PGI all three sets of items are given for a total of 334 items). But the more common PGI uses only the occupational activity items (for a total of 226 items).

121 total scores reported for each test taker:

- a. 18 scales of the Personal Globe (liking and competence combined) scored using general sample norm and also using same sex norms,
- b. 18 scales of the LIKING responses,
- c. 18 scales of the Competence responses,
- d. 18 (liking and competence combined) raw scores
- e. the four very general scales of: People, Things, Data, and Ideas (using both general norms and same sex norms),
- f. the six Holland RIASEC types (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional), scores (both using general sample norms and same sex norms)
- g. the dimensional scores of the interest globe: People vs. Things, Data vs. Ideas, and Prestige. scores (both using general sample norms and same sex norms)
- h. The difference between liking scores and competence scores (both using general sample norms and same sex norms)
- i. Validity scales (liking; competence; difference)

In addition a similarity score is provided for each individual regarding how closely his or her interest profile matches all the occupations listed in the O*NET (over 1000) and all the college majors listed in the National Center for Educational Statistics Classification of Instructional Program (CIP) taxonomy (over 250)

PGI-Short

The PGI-Short is an abbreviated version of the PGI and is composed of 40 activities to which respondents endorse their liking from 1 = Strongly Dislike to 7 = Strongly Like; and their perceived competence (1 = Unable to do to 7 = Very

Competent). It yields fewer scale scores with the main difference being the omission of all the high and low prestige scale scores except the high prestige (north pole) and low prestige (south pole scale scores. So the PGI-S has only 81 total scores reported for each test taker:

- a. 8 basic interest scales of the Personal Globe and hi prestige and low prestige (liking and competence combined) scored using general sample norm and also using same sex norms,
- b. 8 basic interest scales and high and low prestige of the LIKING responses ,
- c. 8 basic interest scales and high and low prestige of the Competence responses,
- d. 8 basic interest scales and high and low prestige (liking and competence combined) raw scores
- e. the four very general scales of: People, Things, Data, and Ideas (using both general norms and same sex norms),
- f. the six Holland RIASEC types (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional), scores (both using general sample norms and same sex norms)
- g. the dimensional scores of the interest globe: People vs. Things, Data vs. Ideas, and Prestige. scores (both using general sample norms and same sex norms)
- h. The difference between liking scores and competence scores (both using general sample norms and same sex norms)
- i. Validity scales (liking; competence; difference)

The PGI the PGI-Short and the PGI-Mini are normed using a representative sample of high school and college students (ages ranging from 16-24 (mean 20.5). This sample contained 500 men and 500 women and were generated to represent the 2010 U. S. census with respect to ethnicity. The instrument reports all scores in T score units (mean =50, SD=10) relative to the total norm group and also relative to the same sex norm group.

Individualized Reports

The PGI provides a wealth of information (indeed too much for the average user. As such, each person's score report is customized to take advantage of how each individual answers. There are three ways that the scores are plotted and reported that vary across people:

- Specific basic interest graph used (four or eight type)
- Endorsement of high or low prestige interests
- Similarity of Interests (activity liking) and Competence

Basic Interest Graph (PGI, PGI-Short, and PGI-Mini)

The main piece of information is the graph of the basic interest circle. Most people only get this graph of the 8 type basic interest circle. From the Personal Globe model presented in Figure 1, this is the equator. Generally, the eight PCI octant scales from Figure 2 are presented and the scores for each scale graphed. An advantage to presenting the scores in a circular format is that this is how the scales are arranged in similarity. Scales next to each other are more similar and scales opposite as the most different. So the test taker can quickly look at his or her scores and see how they compare to similar and dissimilar other scale scores. The further the scale scores are from the center, the higher the scores. Figure 4 is an example of the graph of the 8 type scales.

Vector score: The single line from the origin represents an easy to understand summary of the scores and carries two different pieces of information.

The length of the line represents the strength of one's interest. Long lines represent a clear interest pattern where the likes are strong and different from the dislikes. A short line represents a more undifferentiated pattern of interests where there is not at much distinction between the very different interest areas.

The angle of the line indicates what area the person has the strongest interest.

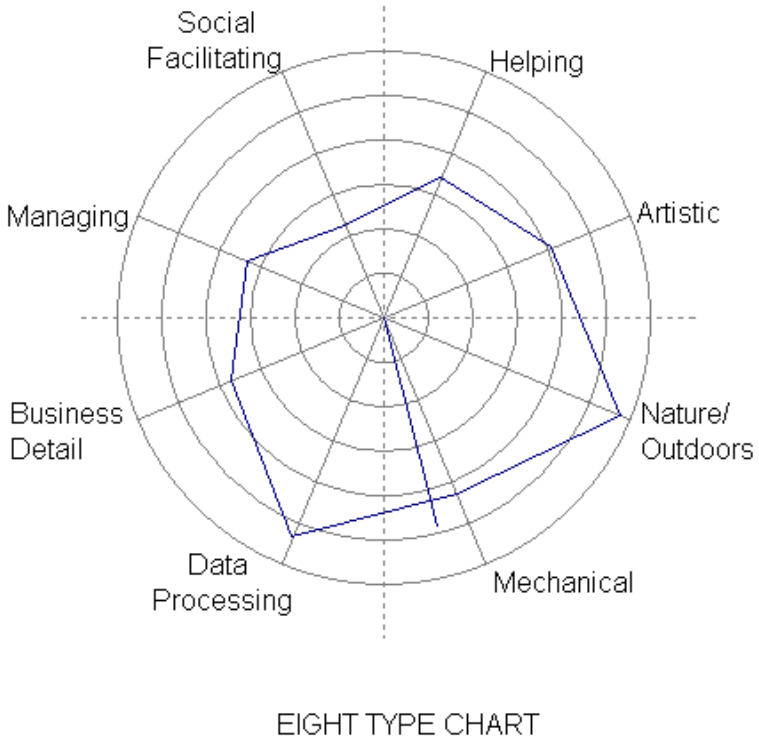


Figure 4: Example of a graph of the PGI eight type basic interest circle.

However if an individual has a low vector score (representing a low amount of differences across the interest areas), then a 4 type basic interest graph is presented. This 4 type model carries the same information as the 8 type but it is simpler. The reason for the simpler presentation is that the test taker is stating that he or she does not see that much difference among the various interest areas, so s simpler model is used as it more closely matches how the test taker is responding. This pattern of lower vector scores is more common in younger individuals who have not had much experience doing and testing out different activities. An example of the more basic interest circle is presented in Figure 5.

The scales reported on the **four** interest area report are:

People: focuses on liking to be around others
Data: focuses on detail activities
Things: focuses on working with ones hands and on physical things
Ideas: focuses on a preference for thinking about things

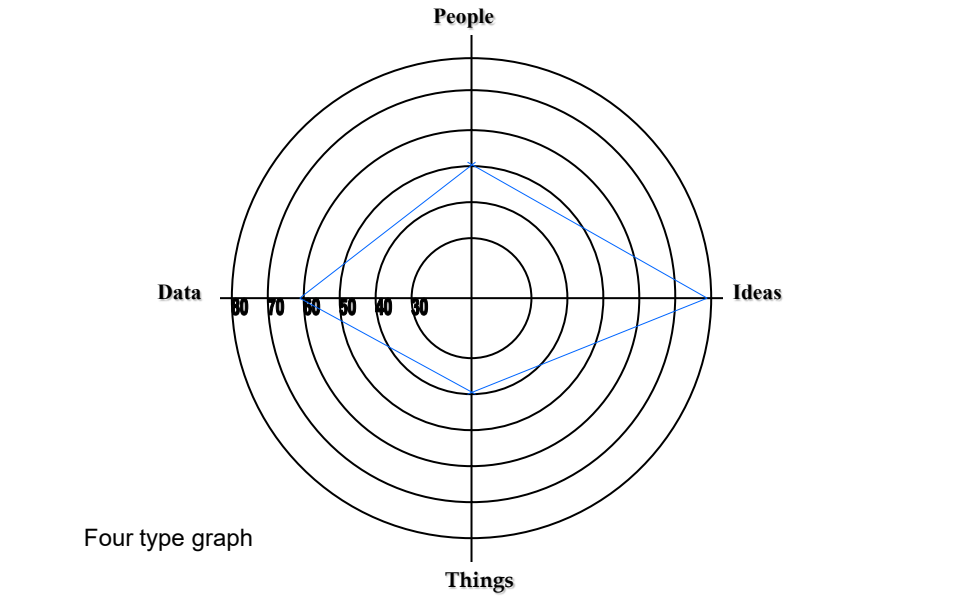


Figure 5: Example of a graph of the PGI four type basic interest circle.

Prestige Scales

Importance of Prestige

Continuing with the Globe description of the interest scales, the axis running between the north and south pole represents the importance of prestige in what you like to do. Prestige represents the general difficulty, training, knowledge, and education required of the various activities. Some people very much like activities that require extensive training and are difficult to perform. Others prefer activities that are easier to learn and require less training. There are many different interest areas that lie on the northern hemisphere of the PGI Globe reflecting high prestige and many others that lie on the southern hemisphere reflecting lower prestige.

If your scores to the PGI items showed a pattern for either lower or higher prestige interest areas, then these scales are reported and interpreted. For example if you liked the lower prestige activities, you would be provided with scores and charts on the lower prestige interest area scales. If you liked the higher prestige activities, you would be provided with the scores and charts of the higher prestige interest area scales. If you tended to favor neither higher nor lower prestige interests, neither the high nor low prestige scales would be highlighted in your interpretation.

The low prestige scales are:

Quality Control: focuses on checking details
Manual Work: focuses on working with hands or simple machines
Personal Service: focuses on working with people in everyday transactions
Construction/Repair: focuses on working with machinery to repair to build
Basic Services: focuses on selling products and services.

The high prestige scales are:

Social Sciences: focuses on psychological and medical helping
Influence: focuses on leading and directing others
Business Systems: focuses applying knowledge to running businesses
Financial Analysis: focuses on helping others with financial issues
Science: focuses on a general interest in science

One of the unique aspects of the PGI is that it incorporates prestige in addition to the more typical basic interest scales. Prestige represents the general difficulty, training, knowledge, and education required of the various activities. Some people very much like activities that require extensive training and are difficult to perform. So individuals scoring high on prestige are endorsing a preference for working hard on difficult activities. Others prefer activities that are easier to learn and require less training. Individuals who score low are endorsing a preference for less difficult tasks. Low scores may view themselves as more relaxed. There are many different interest areas that lie on the northern hemisphere of the Personal Globe reflecting high prestige and many others that lie on the southern hemisphere reflecting lower prestige. In the PGI there are 5 high prestige scales and 5 low prestige scales. If an individual's prestige scores are average (having T scores between 40-60) then no prestige scales are graphed. Average scores are indicative of an average interest in prestige and as such neither the high nor low prestige scales will carry too much information for that individual.

Individuals who score high on prestige (T scores of 60 or higher) will have their prestige scales graphs. Figure 6 is an example of a high prestige graph. A similar graph but with the 5 lower prestige scales would be graphed if an individual scored low on prestige (T score of 40 or less).

The PGI-Short and the PGI-Mini do not provide scores on eight of the ten of the high and low prestige scales only the high prestige and low prestige scales themselves.

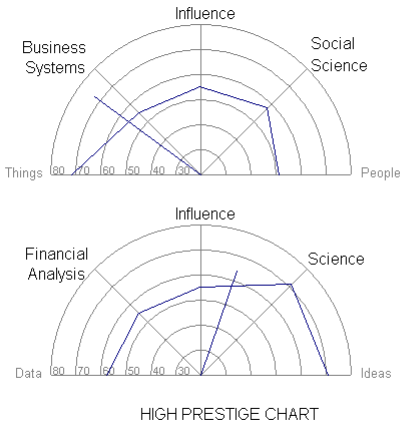
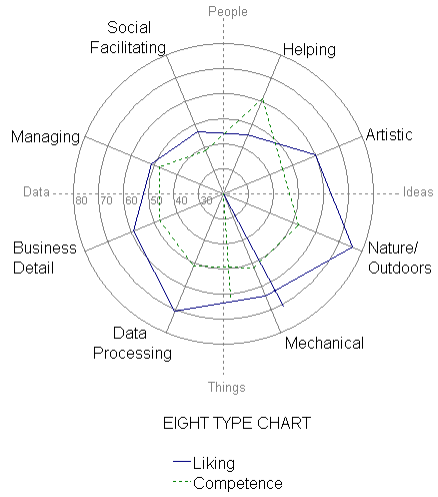


Figure 6: Example of a graph of the high prestige scale scores.

Liking-Competence Discrepancy *(PGI and PGI-Short)*

In general, the activities that people like agree with those in which people see themselves as competent. The PGI measures both liking and competence perceptions and usually these are not differentiated. But some people score differently on the things they like and the things in which they see themselves as being competent. For these indviduals there these differences exist, they are presented with different graphs, one representing interests and one representing competence. The graphs provide an easy means of seeing where the two do not agree. For example an individual might like artistic activities but not feel competent in such activities. In a case such as this, it might be valuable to look into increasing competence through instruction and or practice. Figure 7 is an example of the basic interest graph but where there is a difference between competence and liking scores. There can also be similar liking-competence discrepancy graphs for the high prestige scales or the low prestige scales, if this discrepancy manifested itself with these scales.



Graph with both Liking (Interest) and Competence Scores

Figure 7: Example of Liking-Competence Discrepancy graph.

Validity Items:

The PGI and PGI-Short have different validity checks for random responding. In the middle of the presentation of the items to which the person is responding with the degree of liking, an extra item is added that states that the individual should endorse option 4. The same procedure occurs in the middle of the competence assessment. The program prints what the response option provided for each of these items. They both should be "4" or there could be random responding. Also two items are repeated in the PGI and the responses should be similar. The mean difference in the responses is presented as another indication of random responding. Mean differences should not be greater than 1 or it is possible that the test taker was not responding seriously to the instrument.

Occupational and Major Match *(PGI, PGI-Short, PGI-Mini)*

The occupational and educational information of the PGI is very complete with matches provided for a wide variety of occupations and majors.

Occupations: The PGI also lists all the occupations in the US O*NET system, the most comprehensive listing of occupations in the U.S. (well over 1000 different occupations). The previous version of the PGI (and the one used in the standalone version of the scale) provided matches to the 332 occupations in the Occupational Outlook Handbook. The shift in 2012 to the O*NET occupations enabled a listing of a broader range of occupations. These occupations are presented in order of similarity. Scores of 100=

perfect match of interests with that occupation or major. Scores of 0=perfect mismatch. So higher similarity scores indicate a better match of interests with the various occupations.

The PGI and PGI-Short also provide matches to the 16 Career Clusters created by the Office of Vocational and Adult Education (OVAE) because this system is used in some educational programs.

Majors: The PGI can provide a match with over 250 college majors that are listed in the National Center for Educational Statistics Classification of Instructional Program (CIP) taxonomy. This listing covers the types of majors offered in colleges and universities in the U.S. Since the PGI was developed at Arizona State University, all of the majors offered at ASU are also provided as a benefit for ASU students and staff. Like the occupations, the majors (both the general list and the ASU list) are ranked in terms of similarity from 100 (very similar) to 0 (very dissimilar).

Listing of Occupations with Most Similar Profiles page= 1

Similarity Score	Occupation
94.766	Meteorologists
92.772	Agricultural Scientists
92.035	Computer Scientists and Systems Analysts
89.586	Foresters and Conservation Scientists
89.159	Statisticians
89.116	Industrial Engineers
88.652	Actuaries
87.719	Archivists and Curators
86.869	Designers
86.822	Photographers and Camera Operators
86.471	Surveyors
86.178	Mining Engineers
85.894	Landscape Architects
85.874	Computer Programmers
85.788	Civil Engineers
85.225	Veterinarians
85.096	Visual Artists
85.082	Geologists and Geophysicists
84.930	Architects
84.317	Operations Research Analysts
84.015	Chemists
83.994	Science Technicians
83.911	Petroleum Engineers
83.911	Electrical and Electronics Engineers
83.579	Metallurgical, Ceramic, and Materials Engineers
83.579	Mechanical Engineers
83.542	Pharmacists
83.363	Clinical Laboratory Technologists and Technicians
83.017	Jewelers
82.917	Aerospace Engineers

Figure 8: Example of an abbreviated listing of most similar occupations from a PGI profile.

Test Development

The PGI was developed in an empirical indicative manner and is described in detail elsewhere (Tracey, 2002), so only a summary is presented. Tracey and Rounds (1996) generated a large, broad, representative list of occupational titles. They then had a large sample of high school and college students respond with regard to their preference for each of these occupational titles. The preference ratings were then subjected to principal components analysis and they found that there were 4 components underlying the responses: a general component, People/Things, Data/Ideas, and prestige. They also

found that there was no simple structure; occupational titles were found to load on several of the components. Tracy and Rounds then determined that there were at least three circular arrangements of the items in the component space, creating a sphere. Given that the items were evenly spaced around the sphere, they then carved up the sphere in to 24 different scales, resembling the current structure of the PGI.

However, the presence of the status component was controversial and some attributed it to existing only in tests that use occupational titles as items. To examine this, Tracey (1997) generated a broad, representative set of over 300 occupational activities and had high school and college students respond to the items regarding their preferring the activity (i.e., liking it) and again with respect to their perceived competence (i.e., self-efficacy). He demonstrated that again both liking and competence was described using the same 4 components and again both liking and competence could be mapped onto similar spherical structures. So activity preference, activity perceived competence and preference for occupational titles could be validly described using a spherical structure of the three dimensions of Data/Ideas, People/Things, and prestige.

Tracey (2002) reduced the item pool using the previous studies to create a set of 18 non-overlapping scales from each of the item types that were uniformly distributed around the sphere. This refined set of items became the Personal Globe Inventory and was originally made available via a free standing, downloadable computer program in the extended form with all three item types: occupational titles, activity preferences and activity competence.. When it was put on the web it was reduced to only the activity items. Validity data supported the responses to each of the three scales either separately or in composite. Deleting the occupational items thus did not hurt any of the psychometric support and enabled a briefer administration.

The PGI-Short was developed using item response theory (IRT) by Tracey (2010). The responses to the activity items were examined and the best items selected to form a very brief version. The brief version was only designed to provide scale scores for the basic interest circle (octant scores, Holland's 6 types, and the 4 types) as well as a simple high prestige and low prestige score. So all of the other high and low prestige scores were deleted. In addition, the IRT method enabled an examination of differential item functioning (DIF) of each item across gender. None of the items selected demonstrated a pattern of DIF. So the PGI-Short provides a good representation of the basic interest circle with the addition of two prestige scales only.

The PGI-Mini was developed in 2016 at the request of *Time* to provide a very brief assessment of interests. The best items from the activity preference scales of the PGI-Short were selected. The scale is only 20 items but has yielded comparable validity and reliability.

Use of Test:

The test is intended to provide useful information to individuals aged 14 to 30 relative to selecting majors and occupations or verifying choices that have been made. The norms are based on a representative sample of high school and college students (1000 males and 1000 females from different ethnic groups reflective of the proprotions in the U.S. population) but the test can provide information that many older individuals considering a career change may find helpful.

The PGI is not recommended for use with adolescents under 14 as there has been no research support on its application to this age group as yet. If one is interested in assessing children and young adolescents, the Inventory of Children's Activities is recommended (Tracey & Ward, 1998).

The PGI regular version (i.e., the one that only includes the activity items) has a reading grade level of under sixth grade (Flesch-Kincaid reading grade level: 5.79 and a Flesch Reading ease score of 61.88) so it can be used by a wide variety of individuals. The PGI occupational scales which are only part of the PGI extended have a higher reading threshold (Flesch-Kincaid reading grade level: 9.19 and a Flesch Reading ease score of 34.22) which is to be expected as occupational titles are more complex than occupational activities.

The PGI regular version is typically taken online as the calculations of all the scale scores is very involved. It is possible to administer the PGI or the PGI-Short in a paper and pencil format if one is only interested in obtaining the raw scale scores. The items and scoring is included in the Appendix. It takes generally 20-30 minutes to complete the regular PGI, while the PGI-Short takes roughly 10 minutes. The PGI-Mini takes only 3 minutes. Anyone can take the PGI in that there is no special access required but the test is complex and it would help to have a qualified professional assist with the interpretation.

Psychometric Support

Psychometric support for the PGI is detailed in Tracey (2002 and 2010) and will be summarized here. Table 1 presents the reliability estimates (internal consistency and two week test retest reliability) for the PGI. As can be seen, the internal consistency estimates (alpha) were uniformly high across the scales and the item types.

Structural validity. The Personal Globe model (like Holland's model of six interest types) is based on the circular arrangement of the scales. Scales on the basic interest circle are arranged uniformly around the circle, with more similar scales closer to each other and more dissimilar ones more distant or opposite. A crucial demonstration of the validity of the instrument is the extent to which this circular structure holds in different samples. If the circular structure does not hold, then the underlying assumptions about the test and the basis of interpretation are inappropriate. To examine the validity of the circular model, each type of scale was examined for the extent to which it could be validly described using a circular model using the randomization test of hypothesized order relation (Hubert & Arabie, 1987; Tracey, 1997b). This test provides an inferential statistic indicating the significance of any departure in circular fit from chance as well as correlation of model-data fit (correspondence index, CI). The CI ranges from -1.0 to +1.0. A CI value of +1.0 indicates that the data perfectly fit the circle. A CI value of .00 indicates that the fit is roughly 50-50 and a value of -1.0 indicates that there is no fit to a circular structure.

Table 1
Internal Consistency and Test-Retest Reliability Estimates on Interest, Competence, Occupation, and Composite Subscales (N=1381) for the PGI

	Internal Consistency[a] (α)				Two week Test-retest r[b]
Scale	Int.	Comp.	Occup.	Composite	Composite
Eight Basic Interest Scales					
Social Facilitating	0.69	0.80	0.81	0.88	0.83
Managing	0.77	0.83	0.87	0.91	0.85
Business Detail	0.74	0.89	0.81	0.95	0.82
Data Processing	0.75	0.85	0.88	0.93	0.88
Mechanical	0.78	0.84	0.81	0.93	0.85
Nature/Outdoors	0.79	0.82	0.89	0.92	0.83
Artistic	0.80	0.78	0.92	0.94	0.82
Helping	0.80	0.86	0.86	0.93	0.81
Five Higher Prestige					
Social Sciences	0.83	0.88	0.90	0.94	0.79
Influence	0.85	0.88	0.89	0.89	0.80
Business systems	0.82	0.88	0.88	0.91	0.78
Financial Analysis	0.85	0.88	0.90	0.90	0.81
Science	0.86	0.89	0.90	0.93	0.83
Five Lower Prestige					
Quality Control	0.87	0.90	0.88	0.88	0.81
Manual work	0.88	0.88	0.88	0.94	0.78
Personal Service	0.89	0.90	0.91	0.95	0.77
Construction/Repair	0.91	0.90	0.91	0.93	0.81
Basic Services	0.92	0.92	0.89	0.90	0.80
Six Basic Interest Scales[c]					
Realistic	0.78	0.84	0.81	0.93	0.85
Investigative	0.79	0.82	0.89	0.92	0.83
Artistic	0.80	0.78	0.92	0.94	0.82
Social	0.88	0.91	0.90	0.93	0.80
Enterprising	0.88	0.90	0.90	0.95	0.82
Conventional	0.93	0.93	0.92	0.96	0.80
Four Basic Interest Scales					
Things	0.88	0.90	0.92	0.95	0.83
Ideas	0.89	0.90	0.89	0.94	0.84
People	0.88	0.89	0.88	0.95	0.85
Data	0.88	0.90	0.90	0.96	0.81
Three Dimensional Scales					
People/Things	0.94	0.94	0.93	0.97	0.88
Data/Ideas	0.91	0.95	0.95	0.96	0.86
Prestige	0.93	0.96	0.94	0.97	0.82

[a] N=1381 across both high school and college samples
[b] N=95 college students
[c] Values corrected from Tracey (2002)

Table 2 lists the results of the circular test on the data across different subgroups of high school and college students and across male and female students for all the different types of scales on the PGI. As can be seen there is a significant fit to the circular structure in each case and that the magnitude is high as demonstrated by the CI values. Indeed, the CI values for the Holland scales were higher than the benchmark found across other existing Holland measures (Rounds Tracey, 1996; Tracey & Rounds, 1993).

Table 2

Summary of the Results of the Randomization Test of Hypothesized Circular Order Relations Across Age and Gender Data Sets

Sample	All	Females	Males	Female vs. Male
Eight Basic Interest Scales				
High School Sample				
N	375	194	181	
Predictions Made	288	288	288	
Predictions Met	262	252	241	
p	.0004	.0004	.0004	.40
CI	.82	.75	.67	.03
College Sample				
N	1006	390	602	
Predictions Made	288	288	288	
Predictions Met	279	280	271	
p	.0004	.0004	.0004	.44
CI	.93	.94	.88	.02
High School vs. College				
CI difference	-.05	-.18	-.19	
P difference	.22	.09	.07	
Six Basic Interest Scales				
High School Sample				
N	375	194	181	
Predictions Made	72	72	72	
Predictions Met	65	62	61	
p	.02	.02	.02	.48
CI	.80	.72	.69	.01

Table 5 (continued)

College Sample				
N	1006	390	602	
Predictions Made	72	72	72	
Predictions Met	68	69	63	
p	.02	.02	.02	.39
CI	.89	.92	.75	.03
High School vs. College				
CI difference	-.03	-.19	-.08	
P difference	.38	.07	.28	
Spherical Model (18 scales)				
High School Sample				
N	375	194	181	
Predictions Made	9472	9472	9472	

Predictions Met	7245	7355	7198	
p	.0000	.0000	.0000	.48
CI	.53	.55	.52	.01
College Sample				
N	1006	390	602	
Predictions Made	9472	9472	9472	
Predictions Met	7558	7762	7520	
p	.0000	.0000	.0000	.42
CI	.60	.64	.59	.02
High School vs. College				
CI difference	-.04	-.05	-.03	
p difference	.40	.39	.45	

The construct validity of the PGI scales were also examined as they varied across the different ethnic groups. This is an examination that the scales are being responded to similarly across the different groups. The randomization test results across ethnic group are reported in Table 3e. As can be seen, there is a very similar fit of the PGI responses to the circular model in each ethnic group, supporting the use of the PGI with different U.S. ethnic groups. Rounds and Tracey (1996) found that in general, there was poorer fit to the circular for Holland scales when used with U.S. ethnic minorities. The PGI does not demonstrate this problem.

Table 3
Summary of the Results of the Randomization Test of Hypothesized Circular Order Relations Across Ethnicity Data Sets

Sample	All	Euro Amer.	African Amer.	Asian Amer.	Latino Amer.
Eight Basic Interest Scales					
High School Sample					
N	375	202	84		
Predictions Made	288	288	288		
Predictions Met	262	265	257		
p	.0004	.0004	.0004		
CI	.82	.84	.78		
College Sample					
N	1006	650	151	89	80
Predictions Made	288	288	288	288	288
Predictions Met	279	281	275	264	259
p	.0004	.0004	.0004	.0004	.0004
CI	.93	.95	.91	.83	.80
Combined High School and College Sample					
N	1381	852	235	123	110
Predictions Made	288	288	288	288	288
Predictions Met	275	275	269	268	260
p	.0004	.0004	.0004	.0004	.0004
CI	.91	.91	.87	.86	.81
Six Basic Interest Scales					
High School Sample					
N	375	202	84		
Predictions Made	72	72	72		
Predictions Met	65	64	60		
p	.02	.02	.02		
CI	.80	.78	.67		
College Sample					
N	1006	650	151	89	80
Predictions Made	72	72	72	72	72
Predictions Met	68	67	59	60	58
p	.02	.02	.02	.02	.02
CI	.89	.86	.64	.67	.61
Combined High School and College Sample					
N	1381	852	235	123	110
Predictions Made	72	72	72	72	72
Predictions Met	67	66	61	62	60
p	.02	.02	.02	.02	.02
CI	.86	.83	.70	.72	.67
Spherical Model (18 scales)					
High School Sample					
N	375	202	84		
Predictions Made	9472	9472	9472		
Predictions Met	7245	7284	7146		
p	.0000	.0000	.0000		
CI	.53	.55	.51		
College Sample					
N	1006	650	151	89	80
Predictions Made	9472	9472	9472	9472	9472
Predictions Met	7558	7589	7504	7452	7298
p	.0000	.0000	.0000	.0000	.0000
CI	.60	.60	.58	.57	.54
Combined High School and College Sample					
N	1381	852	235	123	110

Predictions Made	9472	9472	9472	9472	9472
Predictions Met	7597	7522	7258	7356	7235
p	.0000	.0000	.0000	.0000	.0000
CI	.60	.59	.53	.55	.53

To examine the concurrent validity of the scale, the PGI Holland scales were correlated with General Occupational theme scales from the Strong Interest Inventory (SII, Harmon, et, al. 1994) which assess interests and the scales form the Skills, Confidence Inventory (SCI, Betz et al., 1996). The correlations are presented in Table 4. As expected the PGI interest scales correlated highly with the SII interest scales and the PGI competence scales correlated highly with the SCI scales supporting the validity of the PGI scales.

Table 4
Correlations of SII and SCI Scale Scores with the Similar PGI RIASEC using a college sample

Scale	SII	SCI
N	831	404
PGI Interest		
Realistic	.77	.58
Investigative	.69	.53
Artistic	.75	.55
Social	.68	.53
Enterprising	.65	.49
Conventional	.65	.56
PGI Competence		
Realistic	.52	.77
Investigative	.55	.76
Artistic	.59	.86
Social	.49	.79
Enterprising	.45	.75
Conventional	.48	.80
PGI Occupation		
Realistic	.59	.65
Investigative	.61	.64
Artistic	.60	.75
Social	.58	.70
Enterprising	.57	.59
Conventional	.53	.58
PGI Composite		
Realistic	.73	.73
Investigative	.72	.66
Artistic	.77	.75
Social	.69	.63
Enterprising	.69	.67
Conventional	.63	.71

The PGI-Short was derived from the PGI but given its alteration, it required separate psychometric support. So a similar pattern of tests was conducted to those provided on the PGI. First Table 5 is a reporting of the reliability estimates for the shortened scales. Both internal consistency estimates and the test-retest reliabilities are comparable to the values obtained for the longer scales. So with respect to reliability, there was no drop-off when the scales were shortened.

Table 5
Internal Consistency and Test-Retest Reliability Estimates on Interest, Competence, and Composite Scales of the PGI-Short

	Internal Consistency[a] (α)			Two week Test-retest r[b]		
Scale	Int.	Comp.	Composite	Int.	Comp.	Composite
			Eight Basic Interest Scales			
Social Facilitating	0.72	0.81	0.90	0.75	0.74	0.83
Managing	0.75	0.82	0.90	0.77	0.73	0.81
Business Detail	0.76	0.90	0.96	0.75	0.76	0.83
Data Processing	0.75	0.84	0.91	0.71	0.72	0.79
Mechanical	0.79	0.80	0.90	0.73	0.70	0.76
Nature/Outdoors	0.71	0.78	0.88	0.76	0.70	0.78
Artistic	0.76	0.75	0.89	0.77	0.75	0.80
Helping	0.81	0.85	0.91	0.74	0.78	0.79
High Prestige	0.86	0.85	0.93	0.76	0.81	0.83
Low Prestige	0.82	0.82	0.89	0.78	0.71	0.75
			Six Basic Interest Scales[c]			
Realistic	0.79	0.80	0.90	0.73	0.70	0.76
Investigative	0.71	0.78	0.88	0.76	0.70	0.76
Artistic	0.79	0.75	0.89	0.77	0.75	0.80
Social	0.81	0.85	0.92	0.72	0.74	0.77
Enterprising	0.77	0.86	0.90	0.68	0.65	0.73
Conventional	0.88	0.86	0.90	0.77	0.81	0.82
			Four Basic Interest Scales			
Things	0.87	0.89	0.93	0.77	0.75	0.79
Ideas	0.88	0.90	0.93	0.81	0.76	0.83
People	0.82	0.80	0.90	0.73	0.76	0.82
Data	0.81	0.85	0.90	0.75	0.72	0.77
			Three Dimensional Scales			
People/Things	0.91	0.92	0.95	0.78	0.81	0.84
Data/Ideas	0.89	0.90	0.95	0.76	0.80	0.83
Prestige	0.91	0.91	0.96	0.82	0.81	0.86

[a] Validation Sample (N=1813)
[b] N=95 college students
[c] Values corrected from Tracey (2010)

The structural validity was examined as it varied across age and gender with respect to fit to the circular model. These results are reported in Tables 6 and 7. As can be seen, the PGI-S fits the data well and did not differ in fit from that obtained using the longer PGI. Finally, Table 8 summarizes the test of the circular structure across the major ethnic groups. Like the results with the longer PGI, the PGI-S fit each ethnic group well and the values were above those yielded elsewhere for Holland type measures. Very similar results have been found for the PGI-Mini and these results will be published soon. So overall, there is strong psychometric support for the scales.

Table 6
Summary of the Results of the Randomization Test of Hypothesized Circular Order Relations Across the Original PGI scales and the PGI-Short scales on the Validation Sample for the Basic Interest Scales

	PGI		PGI-S		PGI vs. PGI-S difference	
	CI	*p*	*CI*	*p*	*CI*	*p*
			8 Basic Interest Scales			
Interest						
Total	.90	.0004	.89	.0004	.00	.49
Males	.85	.0004	.82	.0004	.02	.42
Females	.91		.86	.0004	.03	.38
Females vs. Males						
CI difference	.05		.03			
p difference	.32		.40			
Competence						
Total	.91	.0004	.90	.0004	.01	.47
Males	.92	.0004	.93	.0004	.00	.53
Females	.83	.0004	.80	.0004	.01	.47
Females vs. Males						
CI difference	.06		.07			
p difference	.26		.11			

Composite						
Total	.94	.0004	.92	.0004	.02	.37
Males	.87	.0004	.88	.0004	-.01	.56
Females	.93	.0004	.92	.0004	.00	.47
Females vs. Males						
CI difference	.03		.03			
p difference	.36		.28			

Table 7
Summary of the Results of the Randomization Test of Hypothesized Circular Order Relations Across the Original PGI scales and the PGI-Short scales on the Validation Sample for the Holland RIASEC Interest Scales

	PGI		PGI-S		PGI vs. PGI-S difference	
	CI	*p*	*CI*	*p*	*CI*	*p*
			RIASEC Interest Scales			
Interest						
Total	.86	.02	.83	.02	.03	.26
Males	.83	.02	.78	.02	.04	.19
Females	.88	.02	.85	.02	.01	.40
Females vs. Males						
CI difference	.04		.07			
p difference	.24		.17			
Competence						
Total	.85	.02	.81	.02	.03	.36
Males	.76	.02	.69	.02	.06	.10
Females	.89	.02	.81	.02	.05	.18
Females vs. Males						
CI difference	.08		.09			
p difference	.09		.10			
Composite						
Total	.87	.02	.88	.02	-.01	.55
Males	.78	.02	.75	.02	.02	.43
Females	.93	.02	.90	.02	.02	.39
Females vs. Males						
CI difference	.10		.09			
p difference	.06		.08			

Table 8

Summary of the Results of the Randomization Test of Hypothesized Circular Order Relations Across Ethnicity in the Validation Sample

Sample	Anglo Amer.	African Amer.	Asian Amer.	Latino Amer.	Native Amer.
N	1109	95	131	295	98
	Eight Basic Interest Scales				
Interests					
p	.0004	.0004	.0004	.0004	.0004
CI	.91	.88	.92	.90	.87
Competence					
p	.0004	.0004	.0004	.0004	.0004
CI	.90	..85	.89	.82	.88
Composite					
p	.0004	.0004	.0004	.0004	.0004
CI	.95	.89	.91	.88	.89
	Six RIASEC Interest Scales				
Interests					
p .	.02	.02	.02	.02	.02
CI	.86	.80	.88	.85	.79
Competence					
p .	.02	.02	.02	.02	.02
CI	.86	.80	.86	.80	.82
Composite					
p .	.02	.02	.02	.02	.02
CI	.88	.82	.88	.84	.82

PGI-Mini results are support of the very brief measure. Alpha estimates are presented in Table 9. These reliability estimates vary from low (.50) top high (/86). Generally the values are considered acceptable given the very few number of items, i.e., only two.

The test of the fit of the circular order model to the scale scores is presented in Table 10 and it is clear that the scales fit the theoretical circular model is well supported by these data for either the octant or RIASEC types.

Table 9
Internal consistency(N=32,379) and two-week test-retest reliability (N=95) on Scales from the PGI-Mini

	Internal Consistency (ω with polychoric correlations)	two-week *r*
Eight Basic Interest Scales		
Social Facilitating	0.62	.62
Managing	0.69	.65
Business Detail	0.91	.61
Data Processing	0.70	.59
Mechanical	0.78	.64
Nature/Outdoors	0.65	.64
Artistic	0.92	.68
Helping	0.69	.62
High Prestige	0.68	.67
Low Prestige	0.78	.54
Six Basic Interest Scales[c]		
Realistic	0.78	.64
Investigative	0.65	.64
Artistic	0.92	.68
Social	0.63	.62
Enterprising	0.70	.62
Conventional	0.85	.60
Four Basic Interest Scales		
Things	0.76	.67
Ideas	0.73	.68
People	0.77	.71
Data	0.86	.63

Table 10
Summary of the Results of the Randomization Test of Hypothesized Circular Order Relations on the PGI-Mini Interest scales

	CI	*p*
		Octant Interest Scales
Total (n=32379)	.83	.01
Males (n=10797)	.81	.01
Females (n=21582)	.81	.01
Females vs. Males	.00	.49
Across 75 countries	.77	.01
RIASEC Interest Scales		
Interest		
Total	.75	.02
Males	.83	.02
Females	.86	.02
Females vs. Males	.02	.36
Across 75 countries	.71	.01

Male-Female Differences

As demonstrated by Su, Rounds, and Armstrong (2009), there is a very strong mean difference between men and women on the Things/People dimension on all interest measures. Women jscore much more toward the People end and men score toward the Things end. In a meta analysis across most major jinterest measures, Su et al. (2009) found an average value of d = -.93 of the differences on Things/People between men and women, indicating that men socre, on average, one standard deviation higher than women. This is a major difference and has caused concern with test users. Su et al. also found that this index varied across measures that sought to restrict the scale to items that were least different between the sexes. The UNIACT adopted a strategy to restrict items to those where there were fewest gender differences and the d was -.67, while Hollands's SDS which does not restrict items if they differ across gender had a d of -1.65. While the UNIACT may work to minimize gender differences, it may come at the cost of predictive validity (Su et al., 2009) because it deletes perhaps the best items to achieve less gender difference. So this issue is a difficult one to resolve.

A comparison of the male-female differences in mean scores are reported in Table 11 for both the PGI and the PGI-S along with the values presented by Su et al. The PGI, which is emtirely empirically derived and thus made no attempt to restrict item selection based on gender differences, has a Things/People gender difference of d = .29. This is among the lowest of all measures examined by Su et al. with only one scale lower, and that scale does not explicitly assess Holland types. It is not clear why the PGI has a much lower gender difference on Things/People because no overt method was adopted to cause this. It is plausible that the removal of prestige from the basic interest circle results in a cleaner model; prestige could be counfounding Things/People difference. Men may be basing respnses in part on low perceive prestige of social activities (e.g., helping) while women may be viewing these as more prestigious. Separating out prestige from the basic interest circle has the unforeseen benefit of dramatically lowering the important gender differences on Things/People, thus obviating the construct validity issues that may arise in the item restriction strategy while still adequately representing the construct itself.

As can be seen, the gender differences are very low for all the PGI scales while they are more in keeping with the higher differences found in the Su et al. study for the PGI-S scales. These differences are due to different norms and a more restricted item set in the PGI-S. The implicaitons are that if the goal is to use an instrument with minimal gender differences in means, then the PGI should be used over the PGI-S or PGI-Mini.

Table 11
Summary of PGI and PGI-S Male-Female differences in means (Cohen's d) for each of the scores relative to Su et al. (2009) meta analytic results (minus values indicate females lower)

Scale	PGI	PGI-S	PGI-Mini	Su et al.
Social Facilitating	-.50	-.42	-.11	-
Management	-.33	-.14	.10	-
Business Detail	-.30	.21	.21	-
Data Processing	-.10	.85	.38	-
Mechanical	.07	.69	.68	-
Nature/Outdoors	-.24	.13	.20	-
Artistic	-.20	-.16	-.20	-
Helping	-.42	-.91	-.36	-
Social Science	-.22	-		-
Influence	-.36	-		-
Business Systems	-.24	-	-	
Quality control	-.04	-	-	
Manual work	.04	-	-	
Personal Service	-.62	-	-	
Financial Analysis	-.23	-	-	
Science	.00	-		.36
Construction	.19	-	-	
Business Service	-.11	-	-	
Perople	-.52	-	-	
Things	-.11	-	-	
Data	-.60	-	-	
Ideas	-.26	-	-	
Realistic	.07	.74	.68	.84
Investigative	-.24	.13	.20	.26
Artistic	-.20	-.15	-.20	-.35
Social	-.50	-.88	-.33	-.68
Enterprising	-.43	-.01	.03	.04
Conventional	-.20	-.66	.53	-.33
People/Things	-.29	-.99	-.83	-.93
Ideas/Data	-.11	-.08	-.16	-.10
Prestige	-.23	-.62	-.11	-

International validity

The PGI has been adapted and translated for use in many countries and there is similar strong, published validity support for the structure in Ireland (Darcy, 2004), Croatia (Sverko, 2008), Serbia, (Hedrih, 2008), China (Long, Adams, & Tracey, 2005), Caribbean (Wilkins, Ramkissoon, & Tracey, 2013), Iran (Akbarzadeh, 2010), Turkey (Vardarli, Özyüre, Wilkins-Yel, & Tracey, 2017), Germany (Etzel & Nagy, 2019; Etzel, Nagy, & Tracey, 2016), and Japan (Long, Watanabe, & Tracey, 2006; Tracey, Watanabe, & Schneider, 1997). It has also been validated in Singapore (Caulum, Tracey, Gresham, & McCarty, 2011) and is being used as a required part of the career planning curriculum for every secondary student in Singapore. There is also substantiated validity support for a pictoral version (Enke, 2009). The instrument has been adapted and translated for use in many other countries. In each of these countries, there is established validity support, although they are not published. These countries include: Slovenia, Macedonia, Turkey, France, Italy, Hong Kong, Malaysia, Philippines, and Portugal.

Rounds and Tracey (1996) examined the structural validity of RIASEC measures on U.S. ethnic and international samples relative to benchmark values for majority U.S. samples and found that the fit of the circular model was much less for ethnic U.S. groups and international samples. A comparison of CI values shows that the PGI RIASEC scales fits the U.S., ethnic U.S. and international samples better than other RIASEC measures. So there is strong support for the PGI in U.S. and international contexts. An examination of the PGI mini in over 74 countries (Glosenberg et al, 2019) demonstrated good reliability and excellent fit to the 6 type and 8-type circular models, far above the values found in Raunds and Tracey (1996).

Occupational and Major Match Validity

The PGI provides matches to occupations and majors. There are two key areas where the validity of these need support. First the actual scores for each occupation or major need to be reliably represented. Second, the method of matching the test score to the occupation itself must be valid.

Occupations: The original PGI used expert ratings of the People/Things, Data/Ideas, and Prestige for the 332 occupations in the Occupational Outlook Handbook. This was updated in the current version using more current figures from the O*NET occupational list which contains the RIASEC codes for 1030 occupations. The RIASEC scores were transformed using simple trigonometric formulae into People/Things and Data/Ideas.
Things/People = (2R + I – A -2S – E + C)
Data/Ideas = (1.73E + 1.73C – 1.73I - 1.73A)
Prestige for each O*NET occupation was originally determined using the prestige listings provided by Nakao and Treas (1994). In cases where there was no ratings, two exerts in

vocational psychology provided extrapolation scores using the Nakao & Treas (1994) figures for similar occupations and the mean of the two expert ratings was used. So People/Things, Data/Ideas and Prestige ratings were obtained for 1030 occupation. However the latest version (post 2013) uses the mean of the O*NET values ratings of Recognition and Achievement as the occupational index of prestige.

Major: A list of 280 common majors offered by most colleges in the country served as the major pool. Each major was rated for People/Things, Data/Ideas, and prestige by three to eight professional or graduate student raters knowledgeable in vocational psychology ("experts"). The mean ICC agreement levels obtained were .91 People/Things, .88 for Data/Ideas and .93 for prestige. The mean of the ratings across the raters was used as the estimate for each major.

To examine the validity of these ratings, each of the 280 occupations was categorized into one of the 23 groups of the World-of-Work map (Prediger & Vansickle, 1992; Swaney, 1995) each of which has associated values for People/Things and Data/Ideas. These values were correlated with the values obtained by the above rating method. The rating People/Things correlated r = .88 with the values based on the ACT and the rating Data/Ideas correlated r = .86 with the Act based values. To examine the prestige, the 280 majors were matched with occupations listed in Nakao and Treas. These values correlated r = .92 with the ratings. So the ratings used for each major showed high agreement across different methods of estimation. The ratings of the experts' ratings were the ones used. A similar procedure was used to derive scores for majors offered at ASU. The same expert raters rated those majors unique to ASU that were not in the list of 280.

Career Clusters: To represent each of the 16 Career Cluster created by the Office of Vocational and Adult Education (OVAE), 12 occupations were selected that fell under each cluster. The People/Things, Data/Ideas, and Prestige scores associated with each of these occupations was drawn from the larger pool of O*NET occupations described above. The mean of each score across all 12 occupations was used to represent each career cluster. So there were People/Thing, Data/Idea and Prestige scores calculated for each of the 16 Career Clusters.

Matching PGI scores to occupations, major and cluster: Given that there were commensurate People/Tings, Data/Ideas and Prestige scores for the PGI, occupations, majors, and career clusters, a simple Euclidean distance algorithm across the three dimensions of People/Things, Data/Ideas and Prestige was used to determine PGI-environment fit. This is the same procedure that was used effectively in matching interest scores to majors in two large nationally representative studies (Tracey & Robbins, 2006; Tracey, Allen, & Robbins, 2011). The Euclidean distance has the benefit of using all the scale data (not just high point codes are typically used) and obviates and problems with ties in scores.

References

Akbarzadeh, M. (2010). *Normalization, determining validity and reliability of the Occupational Preference form of Personal Globe Inventory in students of Isfahan University*. Master's thesis, University of Isfahan, Isfahan, Islamic Republic of Iran

Betz, N. E., Borgen, F. H., & Harmon, L. W. (1996). *Skills Confidence Inventory*. Palo Alto, CA: Consulting Psychologists Press.

Caulum, D., Tracey, T. J. G., Gresham, S., & McCarty, K. (2011, September). *TECHNICAL REPORT: Re-Validation Studies of the PGI and Other ecareers.sg Assessments*. Madison, WI: Center for Work and Education, University of Wisconsin.

Darcy, M. U. A. (2004). Examination of the structure of Irish students' vocational interests and competence perceptions *Journal of Vocational Behavior, 67*, 321-333.

Enke, S. (2009). *A pictorial version of the RIASEC scales of the Personal Globe Inventory*. Doctoral Dissertation, Colorado State University, Fort Collins, CO

Etzel, J. M., Nagy, G. & Tracey, T. J. G. (2016). The spherical model of vocational interests in Germany. *Journal of Career Assessment, 24,* 701-717. DOI: 10.1177/1069072715616122.

Etzel, J. M. & Nagy, G. (2019). Evaluation of the dimensions of the spherical model of vocational interests in the long and short version of the Personal Globe Inventory. *Journal of Vocational Behavior, 112,* 1-16. doi.org/10.1016/j.jvb.2019.01.003

Glosenberg, A., Tracey, T. J. G., Behrend, T. S., Blustein, D. L., & Foster, L. L. (2019). Person-vocation fit across the world of work: Evaluating the generalizability of the circular model of vocational interests and social cognitive career theory across 74 countries. *Journal of Vocational Behavior, 112*, 92-108. DOI:10.1016/j.jvb.2019.01.002

Harmon, L. W., Hansen, J. C., Borgen, F. H., & Hammer, A. L. (1994). *Strong Interest Inventory*. Stanford, CA: Stanford University Press.

Hedrih, V. (2008) Structure of vocational interests in Serbia: Evaluation of spherical model. *Journal of Vocational Behavior, 73*, 13-23.

Holland, J. L. (1997). *Making vocational choices*. Odessa, FL: Psychological Assessment Resources.

Hubert, L. & Arabie, P. (1987). Evaluating order hypotheses within proximity matrices. *Psychological Bulletin, 102*, 172-178.

Long, L., Adams, R. S., & Tracey, T. J. G. (2005). Generalizability of interest structure to China: Application of the Personal Globe Inventory. *Journal of Vocational Behavior, 66,* 66-80. DOI:10.1016/j.jvb.2003.12.004

Long, L., Watanabe, N., & Tracey, T. J. G. (2006). Structure of interests in Japan: Application to the Personal Globe Inventory occupational scales. *Measurement and Evaluation in Counseling and Development, 38,* 222-235.

Nakao, K. & Treas, J. (1994). Updating occupational prestige and socioeconomic scores: How the new measures measure up. *Sociological Methodology, 24*. 1-72.

Prediger, D. J. (1982). Dimensions underlying Holland's hexagon: Missing link between interests and occupations? *Journal of Vocational Behavior, 21*, 259-287.

Prediger, D. J. (1996). Alternative dimensions for the Tracey-Rounds interest sphere. *Journal of Vocational Behavior, 48*, 59-67.

Prediger, D. J., & Vansickle, T. R. (1992). Locating occupations on Holland's hexagon: Beyond RIASEC. *Journal of Vocational Behavior, 40*, 111-128.

Rounds, J., & Tracey, T. J. (1996). Cross-cultural structural equivalence of RIASEC models and measures. *Journal of Counseling Psychology, 43*, 310-329.

Sodano, S., Tracey, T. J. G. (2008). Prestige in interest activity assessment. *Journal of Vocational Behavior*, *73*, 310-317. DOI:10.1016/j.jvb.2008.07.002

Su, R., Rounds, J., Armstrong, P. I. (2009). Men and things, women and people: A meta-analysis of sex differences in interests. *Psychological Bulletin,135*, 859–884.

Sverko, I. (2008). Spherical model of interests in Croatia. *Journal of Vocational Behavior, 72*, 14-24.

Swaney, K. B. (1995). *Technical manual: Revised Unisex Edition of the ACT Interest Inventory (UNIACT).* Iowa City, IA: American College Testing.

Tracey, T. J. G. (1997-a). The structure of interests and self-efficacy estimations: An expanded examination of the spherical model of interests. *Journal of Counseling Psychology, 44*, 32-43.

Tracey, T. J. G. (1997-b). RANDALL: A Microsoft FORTRAN program for the randomization test of hypothesized order relations. *Educational and Psychological Measurement, 57*, 164-168.

Tracey, T. J. G. (2002). Personal Globe Inventory: Measurement of the spherical model of interests and competence beliefs. [*Monograph*]. *Journal of Vocational Behavior, 60*, 113-172. DOI:10.1006/jvbe.2001.1817

Tracey, T. J. G. (2010). Development of an abbreviated Personal Globe Inventory using item response theory: The PGI-Short. *Journal of Vocational Behavior*, *76*, 1-15. DOI:10.1016/j.jvb.2009.06.007

Tracey, T. J. G., & Robbins, S. B. (2006). The interest-major congruence and college success relation: A longitudinal study. *Journal of Vocational Behavior, 69*, 64-89. DOI:10.1016/j.jvb.2005.11.003

Tracey, T. J. G., Allen, J, & Robbins, S. B. (2011). Moderation of the relation between person-environment congruence and academic success: Environmental constraint, personal flexibility and method. *Journal of Vocational Behavior*. DOI: 10.1016/j.jvb.2011.03.005

Tracey, T. J., & Rounds, J. B. (1993). Evaluating Holland's and Gati's vocational interest models: A structural meta-analysis. *Psychological Bulletin, 113*, 229-246.

Tracey, T. J., & Rounds, J. (1995). The arbitrary nature of Holland's RIASEC types: Concentric circles as a structure. *Journal of Counseling Psychology, 42*, 431-439.

Tracey, T. J. G., & Rounds, J. (1996-a). The spherical representation of vocational interests. *Journal of Vocational Behavior, 48*, 3-41.

Tracey, T. J. G., & Rounds, J. (1996-b). Contributions of the spherical representation of vocational interests. *Journal of Vocational Behavior, 48,* 85-95.

Tracey, T. J. G., Watanabe, N., & Schneider, P. L. (1997). Structural invariance of vocational interests across Japanese and American culture. *Journal of Counseling Psychology, 44*, 346-354.

Vardarli, B., Özyüre, R., Wilkins-Yel, K.G., & Tracey, T.J.G. (in press, 2017). Examining the structure of vocational interests in Turkey in the context of the

Personal Globe model. *International Journal for Educational and Vocational Guidance*.

Wilkins, K. G., Ramkissoon, M. & Tracey, T. J. G. (2013). Structure of interest in a Caribbean sample: Application of the Personal Globe Inventory. *Journal of Vocational Behavior*, *83*, 367-372.

Appendix A

Items and scoring

Personal Globe Inventory (PGI) Occupations Scales

Below you will find many different occupations. For each occupation choose the number from 1 (strongly dislike) to 7 (strongly like) that describes how you feel about doing that kind of work. Don't worry about whether you would be good at doing the job or whether you have the skills to do the work. Think only about HOW MUCH YOU LIKE OR DISLIKE THE WORK. Please place your response to the space to the left of each occupation and respond to all occupations.

STRONGLY DISLIKE			**INDIFFERENT**			**STRONGLY LIKE**
1	2	3	4	5	6	7

__1.	Social Service Director	__ 2.	Bank Teller
__3.	Financial Analyst	__ 4.	Power Station Director
__5.	Airplane Mechanic	__ 6..	Ecologist
__7.	Sculptor	__ 8.	School Counselor
__9.	Personnel Director	__10.	Office Manager
__11.	Bank Examiner	__12.	Electronics Technician
__13.	Auto Mechanic	__14.	Forester
__15.	Musician	__16.	Speech Therapist
__17.	Publicity Director	__18.	Department Store Manager
__19.	Banker	__20.	Microelectronics Technician
__21.	Avionics Technician	__22.	Oceanographer
__23.	Composer	__24.	Social Worker
__25.	Sales (Clothes)	__26.	Sales Clerk
__27.	Cost Estimator	__28.	Electrician
__29.	Chemical Engineer	__30.	Naturalist
__31.	Poet	__32.	Child Care Worker
__33.	Travel Agent	__34.	Sales Manager
__35.	Certified Public Accountant	__36.	Electrical Engineer
__37.	Chemical Lab Technician	__38.	Fish & Game Warden
__39.	Playwright	__40.	Marriage & Family Therapist
__41.	Aerobics Instructor	__42.	Hotel Manager
__43.	Accounting Clerk	__44.	Electronics Assembler
__45.	Machinist	__46.	Veterinarian
__47.	Author	__48.	Educational Psychologist
__49.	Clinical Psychologist	__50.	Scientific Research Director
__51.	Business Computer Specialist	__52.	Bricklayer
__53.	Maid	__54.	Flight Attendant
__55.	Budget Consultant	__56.	Social Scientist
__57.	Bulldozer Operator	__58.	Receptionist
__59.	Psychotherapist	__60.	Research Scientist
__61.	Business Computer Programmer	__62.	Locksmith
__63.	Meter Reader	__64.	Sightseeing Guide
__65.	Business Management Analyst	__66.	Biologist

	STRONGLY DISLIKE			INDIFFERENT			STRONGLY LIKE
	1	2	3	4	5	6	7

__67.	Crane Operator	__68.	Hotel Clerk
__69.	Pediatrician	__70.	Surgeon
__71.	Business Programmer	__72.	Bridge Inspector
__73.	Window Cleaner	__74.	Waiter/Waitress
__75.	Market Research Analyst	__76.	Anthropologist
__77.	Tree Pruner	__78.	Hair Stylist
__79.	Family Physician	__80.	Geneticist
__81.	System Analyst	__82.	Pipe Fitter
__83.	Ride Attendant	__84.	Bartender
__85.	Personal Investment Analyst	__86.	Earth Scientist
__87.	Construction Worker	__88.	Mail Clerk
__89.	Sociologist	__90.	Physicist
__91.	Computer Operator	__92.	Building Inspector
__93.	Coatroom Attendant	__94.	Travel Guide
__95.	Consumer Affairs Director	__96.	Geologist
__97.	Roofer	__98.	Escort
__99.	Psychiatric Caseworker	__100.	Astronomer
__101.	Computer Consultant	__102.	High School Shop Teacher
__103.	Bus Driver	__104.	Personal Shopper
__105.	Stockbroker	__106.	Chemist
__107.	Building Contractor	__108.	Secretary

Personal Globe Inventory - Activities

Please look at the following list of activities and respond to each TWICE. Once regarding how much you LIKE the activity and once regarding your ABILITY or COMPETENCE to do the activity. Use the scales listed below to rate Liking and Ability.

LIKING

Strongly Dislike				Neutral		Strongly Like
1	2	3	4	5	6	7

COMPETENCE

Unable to do				Moderately Competent		Very Competent
1	2	3	4	5	6	7

Liking	Competence	
_____	_____	1. Greet people when entering a business
_____	_____	2. Oversee a hotel
_____	_____	3. Prepare financial reports
_____	_____	4. Oversee a data analysis group
_____	_____	5. Install electrical wiring
_____	_____	6. Categorize different types of wildlife
_____	_____	7. Write poetry
_____	_____	8. Help others
_____	_____	9. Seat patrons at a restaurant
_____	_____	10. Sell goods to others
_____	_____	11. Estimate costs of new procedures
_____	_____	12. Repair computers
_____	_____	13. Oversee building construction
_____	_____	14. Write a scientific article
_____	_____	15. Sculpt a statue
_____	_____	16. Help children with learning problems
_____	_____	17. Interview people for a survey
_____	_____	18. Manage an office
_____	_____	19. Maintain office financial records
_____	_____	20. Manage an electrical power station
_____	_____	21. Design electronics systems
_____	_____	22. Teach science
_____	_____	23. Paint a portrait
_____	_____	24. Study people's behavior
_____	_____	25. Sell clothes to others
_____	_____	26. Oversee sales

PLEASE GO ON TO THE NEXT PAGE

LIKING

Strongly Dislike				Neutral		Strongly Like
1	2	3	4	5	6	7

COMPETENCE

Unable to do				Moderately Competent		Very Competent
1	2	3	4	5	6	7

Liking	Competence	
_____	_____	27. Prepare insurance reports
_____	_____	28. Write computer programs for business
_____	_____	29. Repair airplanes
_____	_____	30. Draw medical illustrations
_____	_____	31. Write a play
_____	_____	32. Teach people to dance
_____	_____	33. Escort people through a television studio
_____	_____	34. Organize office records
_____	_____	35. Keep records of stock sales
_____	_____	36. Write computer programs
_____	_____	37. Inspect construction sites for safety
_____	_____	38. Chart stars
_____	_____	39. Draw cartoons
_____	_____	40. Teach others cooking
_____	_____	41. Do gift wrapping at a store
_____	_____	42. Operate an office copy machine
_____	_____	43. Establish a business accounting procedure
_____	_____	44. Analyze survey maps
_____	_____	45. Assemble precision optical instruments
_____	_____	46. Study wildlife
_____	_____	47. Write novels
_____	_____	48. Supervise children in a nursery
_____	_____	49. Help others with marriage problems
_____	_____	50. Write legal documents
_____	_____	51. Sell stocks and bonds
_____	_____	52. Guard buildings
_____	_____	53. Drive a truck
_____	_____	54. Polish others' fingernails
_____	_____	55. Examine financial records of businesses
_____	_____	56. Conduct chemical experiments
_____	_____	57. Repair cars
_____	_____	58. Serve food in a cafeteria
_____	_____	59. Help others with speech difficulties
_____	_____	60. Give lecture to large groups
_____	_____	61. Oversee a bank
_____	_____	62. Check progress of a factory order

PLEASE GO ON TO THE NEXT PAGE

LIKING

Strongly Dislike				Neutral		Strongly Like
1	2	3	4	5	6	7

COMPETENCE

Unable to do				Moderately Competent		Very Competent
1	2	3	4	5	6	7

Liking	Competence	
_____	_____	63. Drive a bus
_____	_____	64. Style hair
_____	_____	65. Examine finances
_____	_____	66. Cure medical ailments
_____	_____	67. Grind metal pieces
_____	_____	68. Run a vacuum cleaner
_____	_____	69. Assist those with mental problems
_____	_____	70. Study the effects of elections
_____	_____	71. Manage a department store
_____	_____	72. Keep track of inventory
_____	_____	73. Carry and load containers
_____	_____	74. Cook large food orders
_____	_____	75. Study causes of stock market fluctuations
_____	_____	76. Study genetics
_____	_____	77. Install mufflers on cars
_____	_____	78. Wash clothes
_____	_____	79. Study juvenile delinquency
_____	_____	80. Set up social programs
_____	_____	81. Counsel others about financial investments
_____	_____	82. Use a radio to dispatch repairers
_____	_____	83. Drive a taxi
_____	_____	84. Train dogs
_____	_____	85. Consult with others about how to run a business
_____	_____	86. Conduct scientific experiments
_____	_____	87. Operate a bulldozer
_____	_____	88. Sell pets to people
_____	_____	89. Help others with personal problems
_____	_____	90. Help others find employment
_____	_____	91. Provide financial counseling
_____	_____	92. Inspect landfill sites
_____	_____	93. Operate a woodworking machine
_____	_____	94. Groom pets
_____	_____	95. Plan a business budget
_____	_____	96. Study the shifts in the earth
_____	_____	97. Operate a crane

PLEASE GO ON TO THE NEXT PAGE

LIKING

Strongly Dislike				Neutral		Strongly Like
1	2	3	4	5	6	7

COMPETENCE

Unable to do				Moderately Competent		Very Competent
1	2	3	4	5	6	7

Liking	Competence	
____	_____	98. Sell hot dogs at a sporting event
____	_____	99. Help others with hearing disorders
____	_____	100. Defend people in court
____	_____	101. Administer loans
____	_____	102. Inspect automobiles
____	_____	103. Smooth wood-furniture with sandpaper
____	_____	104. Model clothes
____	_____	105. Analyze financial records
____	_____	106. Study plants
____	_____	107. Cut down trees
____	_____	108. Rent fishing equipment
____	_____	109. Work with people
____	_____	110. Work with things
____	_____	111. Work with ideas
____	_____	112. Work with data
____	_____	113. Work in high prestige activities

PGI Scoring

Template for Producing Raw Scores for Each Scale (activity preferences, activity competence beliefs and occupational preferences)

Scale Scoring

1. Social Facilitating= (il + i9 + i17 + i25 + i33 + i41)/6
2. Managing= (i2 + i10 + i18 + i26 + i34 + i42)/6
3. Business Detail= (i3 + i11 + i19 + i27 + i35 + i43)/6
4. Data Processing= (i4 + i12 + i20 + i28 + i36 + i44)/6
5. Mechanical= (i5 + i13 + i21 + i29 + i37 + i45)/6
6. Nature/Outdoors= (i6 + i14 + i22 + i30 + i38 + i46)/6
7. Artistic = (i7 + i15 + i23 + i31 + i39 + i47)/6
8. Helping= (i8 + i16 + i24 + i32 + i40 + i48)/6
9. Social Sciences=(i49 + i59 + i69 + i79 + i89 + i99)/6
10. Influence= (i50 + i60 + i70 + i80 + i90 + i100)/6
11. Business Systems= (i51 + i61 + i71 + i81 + i91 + i101)/6
12. Quality Control= (i52 + i62 + i72 + i82 + i92 + i102)/6
13. Manual Work= (i53 + i63 + i73 + i83 + i93 + i103)/6
14. Personal Service= (i54 + i64 + i74 + i84 + i94 + i104)/6
15. Financial Analysis= (i55 + i65 + i75 + i85 + i95 + i105)/6
16. Science= (i56 + i66 + i76 + i86 + i96 + i106)/6
17. Construction/Repair=(i57 + i67 + i77 + i87 + i97 + i107)/6
18. Basic Service = (i58 + i68 + i78 + i88 + i98 + i108)/6
19. People =.924 * (Scale8 + Scale1) + .383 * (Scale2 + Scale7)
20. Things =.924 * (Scale4 + Scale5) + .383 * (Scale3 + Scale6)
21. Data =.924 * (Scale2 + Scale3) + .383 * (Scale1 + Scale4)
22. Ideas =.924 * (Scale7 + Scale6) + .383 * (Scale5 + Scale8)
23. Realistic =Scale5
24. Investigative =Scale6
25. Artistic =Scale7
26. Social =(2 * Scale8 + Scale1)/3
27. Enterprising =(2 * Scale2 + Scale1)/3
28. Conventional =(2 * Scale4 + Scale3)/3
29. People/Things =Scale19 - Scale20
30. Ideas/Data =Scale22 - Scale21
31. Prestige =(2 * Scale10 + .71 * (Scale15 + Scale11 + Scale9 + Scale16) -2 * Scale13 - .71 * (Scale12 + Scale17 + Scale14 + Scale18))/2

Personal Globe Inventory – Short

Please look at the following list of activities and respond to each TWICE. Once regarding how much you LIKE the activity and once regarding your ABILITY or COMPETENCE to do the activity. Use the scales listed below to rate Liking and Ability.

LIKING

Strongly Dislike				Neutral		Strongly Like
1	2	3	4	5	6	7

COMPETENCE

Unable to do				Moderately Competent		Very Competent
1	2	3	4	5	6	7

Liking	Competence	
____	_____	1. Seat patrons at a restaurant
____	_____	2. Oversee a hotel
____	_____	3. Prepare financial reports
____	_____	4. Oversee a data analysis group
____	_____	5. Install electrical wiring
____	_____	6. Categorize different types of wildlife
____	_____	7. Sculpt a statue
____	_____	8. Help children with learning problems
____	_____	9. Give lecture to large groups
____	_____	10. Drive a bus
____	_____	11. Interview people for a survey
____	_____	12. Manage an office
____	_____	13. Maintain office financial records
____	_____	14. Manage an electrical power station
____	_____	15. Oversee building construction
____	_____	16. Write a scientific article
____	_____	17. Paint a portrait
____	_____	18. Teach people to dance
____	_____	19. Study the effects of elections
____	_____	20. Carry and load containers
____	_____	21. Sell clothes to others
____	_____	22. Oversee sales
____	_____	23. Keep records of stock sales
____	_____	24. Write computer programs for business
____	_____	25. Inspect construction sites for safety

PLEASE GO ON TO THE NEXT PAGE

LIKING

Strongly Dislike				Neutral		Strongly Like
1	2	3	4	5	6	7

COMPETENCE

Unable to do				Moderately Competent		Very Competent
1	2	3	4	5	6	7

Liking	Competence	
____	_____	26. Teach science
____	_____	27. Write a play
____	_____	28. Teach others cooking
____	_____	29. Set up social programs
____	_____	30. Drive a taxi
____	_____	31. Escort people through a television studio
____	_____	32. Organize office records
____	_____	33. Establish a business accounting procedure
____	_____	34. Analyze survey maps
____	_____	35. Assemble precision optical instruments
____	_____	36. Study wildlife
____	_____	37. Draw cartoons
____	_____	38. Supervise children in a nursery
____	_____	39. Defend people in court
____	_____	40. Smooth wood-furniture with sandpaper

Scoring PGI-Sh

Template for Producing Raw Scores for Each Scale
(activity preferences and activity competence beliefs)

Scale Scoring

1. Social Facilitating = (il + i11 + i21 + i31)/4
2. Managing = (i2 + i12 + i22 + i32)/4
3. Business Detail = (i3 + i13 + i23 + i33)/4
4. Data Processing = (i4 + i14 + i24 + i34)/4
5. Mechanical = (i5 + i15 + i25 + i35)/4
6. Nature/Outdoors = (i6 + i16 + i26 + i36)/4
7. Artistic = (i7 + i17 + i27 + i37)/4
8. Helping = (i8 + i18 + i28 + i38)/4
9. High Prestige = (i9 + i19 + i29 + i39)/4
10. Low Prestige = (i10 + i20 + i30 + i40)/4

11. People .924 * (Scale8 + Scale1) + .383 * (Scale2 + Scale7)
12. Things .924 * (Scale4 + Scale5) + .383 * (Scale3 + Scale6)
13. Data .924 * (Scale2 + Scale3) + .383 * (Scale1 + Scale4)
14. Ideas .924 * (Scale7 + Scale6) + .383 * (Scale5 + Scale8)
15. Realistic = Scale5
16. Investigative = Scale6
17. Artistic = Scale7
18. Social = (2 * Scale8 + Scale1)/3
19. Enterprising = (2 * Scale2 + Scale1)/3
20. Conventional = (2 * Scale4 + Scale3)/3
21. People/Things = Scale11 – Scale12
22. Ideas/Data = Scale14 – Scale13
23. Prestige = Scale9 – Scale10

Personal Globe Inventory – Mini

Please look at the following list of activities and respond to each regarding how much you LIKE the activity.

Strongly Dislike			Neutral			Strongly Like
1	2	3	4	5	6	7

_____ 1. Seat patrons at a restaurant
_____ 2. Oversee a hotel
_____ 3. Prepare financial reports
_____ 4. Oversee a data analysis group
_____ 5. Install electrical wiring
_____ 6. Categorize different types of wildlife
_____ 7. Sculpt a statue
_____ 8. Help children with learning problems
_____ 9. Give lecture to large groups
_____ 10. Drive a bus
_____ 11. Interview people for a survey
_____ 12. Manage an office
_____ 13. Maintain office financial records
_____ 14. Manage an electrical power station
_____ 15. Oversee building construction
_____ 16. Write a scientific article
_____ 17. Paint a portrait
_____ 18. Teach people to dance
_____ 19. Study the effects of elections
_____ 20. Carry and load containers

Scoring PGI-mini

Template for Producing Raw Scores for Each Scale
(activity preferences and activity competence beliefs)

Scale Scoring

1. Social Facilitating = (il + i11)/2
2. Managing = (i2 + i12)/2
3. Business Detail = (i3 + i13)/2
4. Data Processing = (i4 + i14)/2
5. Mechanical =(i5 + i15)/2
6. Nature/Outdoors = (i6 + i16)/2
7. Artistic = (i7 + i17)/2
8. Helping = (i8 + i18)/2
9. High Prestige = (i9 + i19)/2
10. Low Prestige = (i10 + i20)/2

11. People .924 * (Scale8 + Scale1) + 383 * (Scale2 + Scale7)
12. Things .924 * (Scale4 + Scale5) + .383 * (Scale3 + Scale6)
13. Data .924 * (Scale2 + Scale3) + .383 * (Scale1 + Scale4)
14. Ideas .924 * (Scale7 + Scale6) + .383 * (Scale5 + Scale8)
15. Realistic = Scale5
16. Investigative = Scale6
17. Artistic = Scale7
18. Social = (2 * Scale8 + Scale1)/3
19. Enterprising = (2 * Scale2 + Scale1)/3
20. Conventional = (2 * Scale4 + Scale3)/3
21. People/Things = Scale11 – Scale12
22. Ideas/Data = Scale14 – Scale13
23. Prestige = Scale9 – Scale10

Vector= SQRT(People/Things^2 + Data/Ideas^2)

Appendix B

Interpetation Samples

Example 1: female aged 21

The eight type interest circle (Figure 1) shows that the respondent is oriented toward people, with her Helping and Social Facilitating scores being her highest scores (both T scores around 60). Her Artistic T score is slightly lower at 55. Business Contact is T=50. The other scales are all quite low. This pattern clearly shows a preference for activities involving other people. The vector also demonstrates this pattern, pointing toward People and only slightly toward the Ideas side. This profile is fairly straightforward, and the information provided is similar to that provided by most instruments that report Holland RIASEC scales (except here there are eight scales instead of 6). This woman did not demonstrate any preference for either high or low prestige as demonstrated in her scores listed in Table 1 (hence it is not represented), nor were there any major differences between her Liking responses and her Competence responses (and so neither were these represented). The list of similar occupations are presented in Table 2. there are several that are fairly similar to the individual's interests, with all focusing on very social and helping aspects (e.g., social worker and human services work).

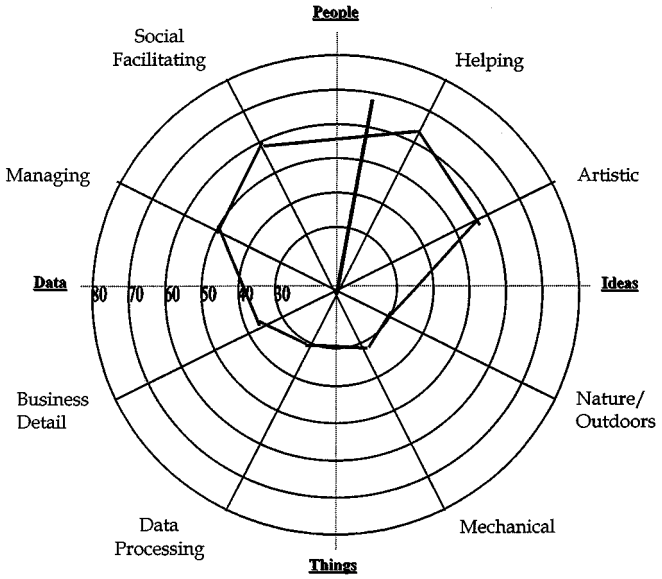


FIG. 1. Circular graph and vector score for example 1 eight basic interest types.

TABLE 1. Personal Globe Inventory Technical Score Profile for Example 1

Scale	T scores			
	Composite	Same sex (norm)	Liking	Competence
Spherical scales				
Social Facilitating	58	50	57	56
Managing	49	52	50	46
Business Detail	37	41	36	38
Data Processing	34	43	34	37
Mechanical	34	39	37	30
Nature/Outdoors	30	35	30	31
Artistic	55	51	58	54
Helping	63	54	62	66
Social Sciences	56	47	61	51
Influence	51	55	54	50
Business Systems	37	39	31	45
Quality Control	38	42	30	46
Manual Work	35	36	35	35
Personal Service	51	47	50	53
Financial Analysis	41	46	40	42
Science	40	49	40	40
Construction/Repair	30	37	29	32
Basic Service	30	25	25	35
Liking–Competence				
Basic Interest	49	50		
High Prestige	51	50		
Low Prestige	48	49		
Six types				
Realistic	34	44		
Investigative	30	42		
Artistic	55	51		
Social	60	52		
Enterprising	50	54		
Conventional	35	42		
Four types				
People	60	52		
Things	34	44		
Data	41	45		
Ideas	45	52		
Dimensional				
People/Things	67	65		
Ideas/Data	48	49		
Prestige	52	53		

TABLE 2. Personal Globe Inventory Listing of Similar Occupations for Example 1

Similarity score	Occupation
88	Social and recreation workers
85	Human services work
85	Recreation workers
84	Social workers
84	Clergy
83	Teachers, librarians, and counselors
82	Adult education teachers
81	Counselors
80	School teachers
77	Special education teachers
75	Psychologists
74	Urbana and regional planners
73	Registered nurses
72	Respiratory therapists
72	Dental hygienists'
71	Dispensing opticians
70	Electroneurodiagnostic technologists
70	Emergency medical technicians
68	Licensed practitioner nurses
67	Medical record technicians
65	Occupational therapists
65	Physical therapists
64	Physician assistants
62	Recreational therapists
62	Speech—Language pathologists and audiologists
61	Personnel, training, and labor relations specialists
60	Managers
58	Social scientists
57	Economists and marketing research analysis
57	Dentists
56	Optometrists
54	Physicians
53	Pharmacists
52	Librarians

Example 2: male aged 21

This profile is more complex than example 1 as there were several added pieces of information deemed relevant for this test taker. First the interest circle (Figure 2) and the listing of scores (Table 3) shows a clear preference for Nature/Outdoors and Mechanical activities. These are the only two scale scores above T=50. The vector clearly demonstrates the focus of these interests and their strength (a fairly even balance between working with things and ideas); very much in line with many physical science and engineering occupations (Table 4).

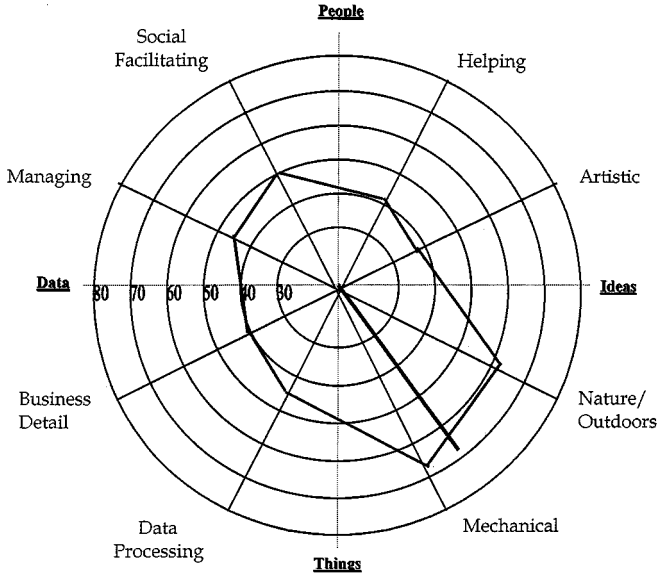


FIG. 2. Circular graph and vector score for example 2 eight basic interest types.

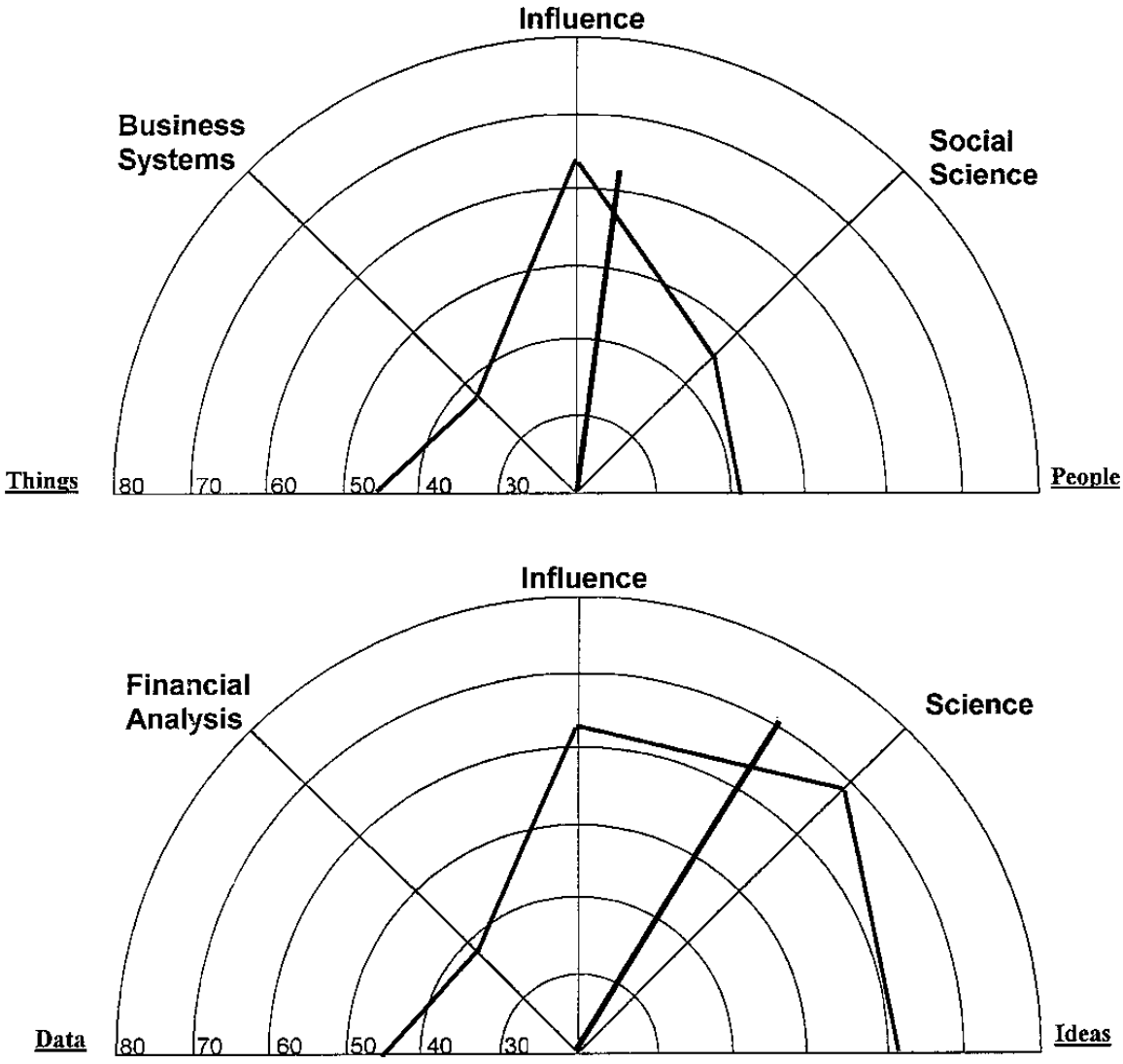


FIG. 3. Graphs and vectors for higher prestige scales for example 2.

TABLE 3 Personal Globe Inventory Technical Score Profile for Example 2

	T score			
Scale	Composite	Same sex (norm)	Liking	Competence
Spherical scales				
Social Facilitating	40	45	40	40
Managing	44	45	42	47
Business Detail	42	40	40	45
Data Processing	47	45	40	52
Mechanical	70	60	72	68
Nature/Outdoors	63	56	69	59
Artistic	37	40	40	35
Helping	43	50	45	40
Social Sciences	53	57	54	56
Influence	65	60	72	43
Business Systems	48	45	48	45
Quality Control	35	33	33	37
Manual Work	28	28	25	30
Personal Service	31	35	29	33
Financial Analysis	38	32	35	40
Science	68	60	72	67
Consruction/Repair	40	35	40	41
Basic Service	30	35	30	31
Liking–Competence				
Basic Interest	60	59		
High Prestige	66	66		
Low Prestige	44	43		
Six types				
Realistic	60	57		
Investigative	63	60		
Artistic	37	45		
Social	42	49		
Enterprising	44	44		
Conventional	45	44		
Four types				
People	42	46		
Things	46	40		
Data	44	40		
Ideas	62	60		
Dimensional				
People/Things	35	37		
Ideas/Data	40	40		
Prestige	66	65		

TABLE 4. Personal Globe Inventory Listing of Similar Occupations for Example 2

Similarity score	Occupation
88	Biological and medical scientists
85	Aerospace engineers
84	Electrical and electronics engineers
83	Chemical engineers
82	Health services managers
82	Physicians
81	Architects
80	Engineering, science, and data processing managers
77	Civil engineers
76	Physical scientists
76	Geologists and geophysicists
76	Meteorologists
75	Physicists and astronomers
74	Industrial engineers
73	Mechanical engineers
72	Metallurgical, ceramic, and materials engineers
71	Mining engineers
71	Nuclear engineers
69	Petroleum engineers
69	Podiatrists
65	Veterinarians
60	Landscape architects
54	Life scientists
54	Agricultural scientists
53	Foresters and conservation scientists

The respondent scored high on Prestige (66) and thus the five high prestige scale scores are depicted in Figure 3. This individual is very interested in Science and Influence (high prestige). This presents a picture of a fairly ambitious individual with Science interests. The high prestige interests involving finances (Business Systems and Financial Analysis were clearly rejected. Using the Prestige scales results in a more clearly defined picture of the interests for this individual.

This individual also had a large discrepancy between his Liking responses and his Competence responses, indicating that he sees the two as fairly different (see Table 3). The difference between Liking and Competence was manifest for him in the high Prestige scales. Figure 4 is a graphical depiction of the Liking and Competence scores of the high Prestige scales. The main difference is in his assessment of his desire for influence and his lack of perceived competence. This discrepancy needs to be explored with this individual as it could cause considerable disappointment in his future as he may not reach the ideals to which he aspires. Obvious interventions could be directed at helping increase his sense of competence or helping him gain a more realistic perspective of his aspirations. The information presented to this individual is much more complex than it was for the individual in example one as the responses indicated that there was important variance that needed to be represented.

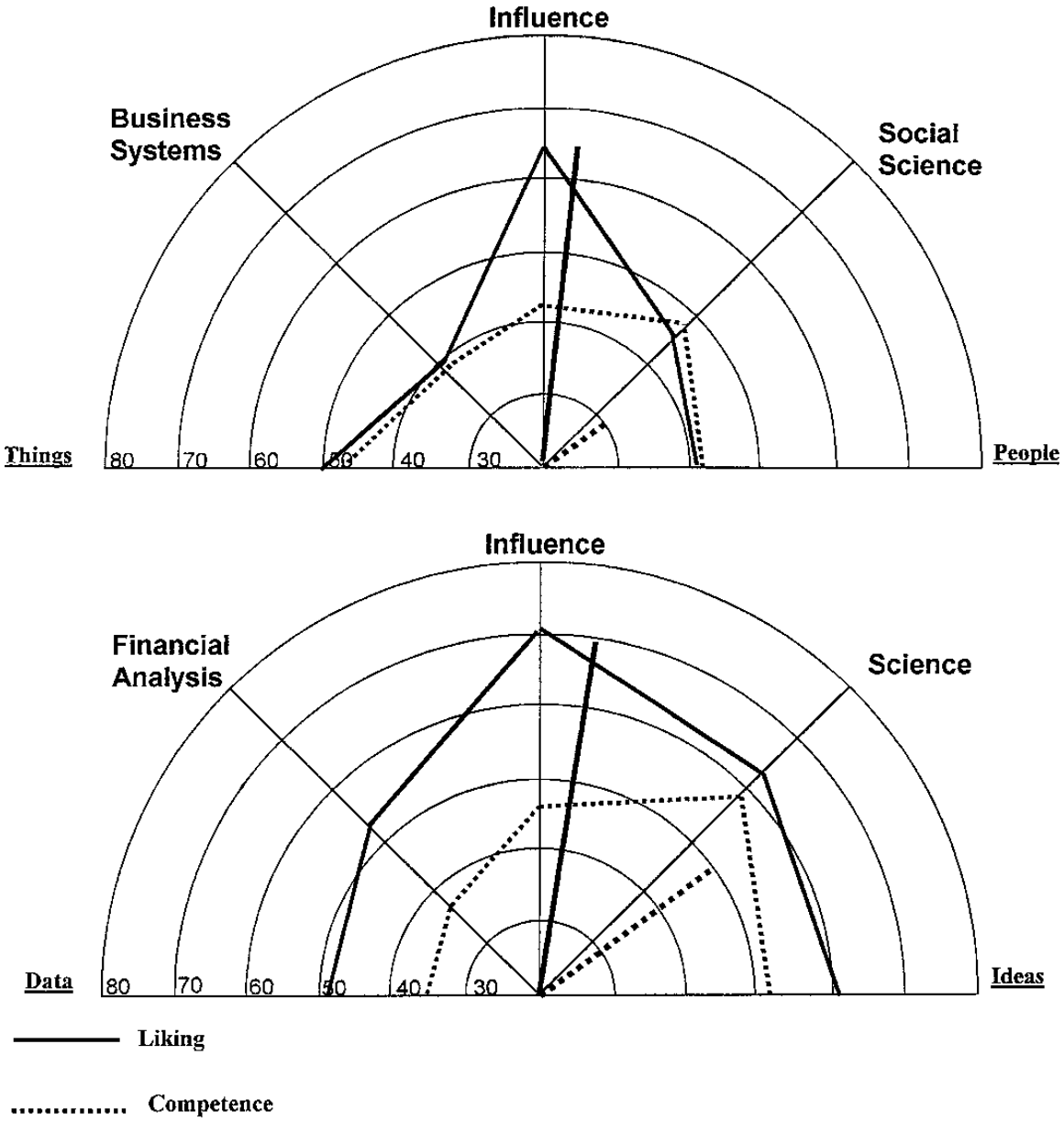


FIG. 4. Graphs and vectors for higher prestige scales for example 2 using liking and competence separately.

Example 3: female aged 18

This is an undifferentiated profile. There is no clear interest pattern demonstrated in the eight scale scores (see Table 5), so the four more molar scales are presented (Figure 5). This individual has a slight preference for people but it is not pronounced. This is a profile of someone who has not specifically thought out what she likes or may not have had enough experience to help her sort out her interests. However, her Prestige score reveals a more differentiated profile. Her Prestige score was low (T=40, listed in Table 5) indicating that she had preferences for lower status activities, and as such the five lower prestige occupations are presented (Figure 6). She demonstrates a differential pattern of interests with Personal Service Basic Service being her highest scores. By incorporating Prestige, the interest pattern of this individual is much more explicit, and much more specific information about occupations can be provided than was possible given just her basic interest scores. As can be seen from her listing of similar occupations presented in Table 6, there are several occupations that are good matches to her interests.

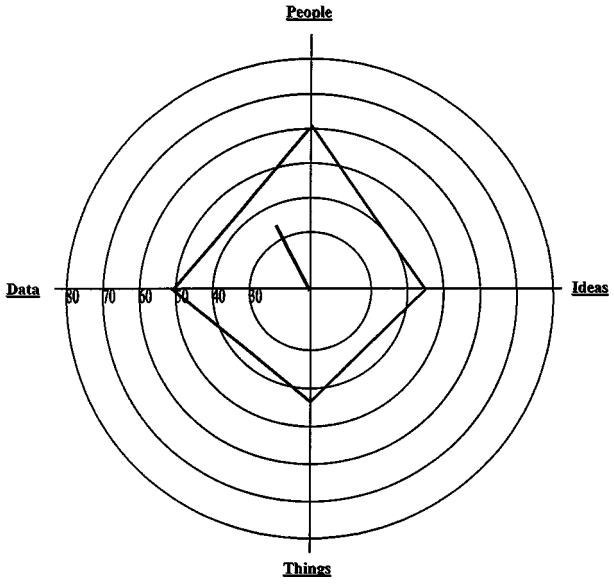


FIG. 5. Circular graph and vector score for example 3 four basic interest scores.

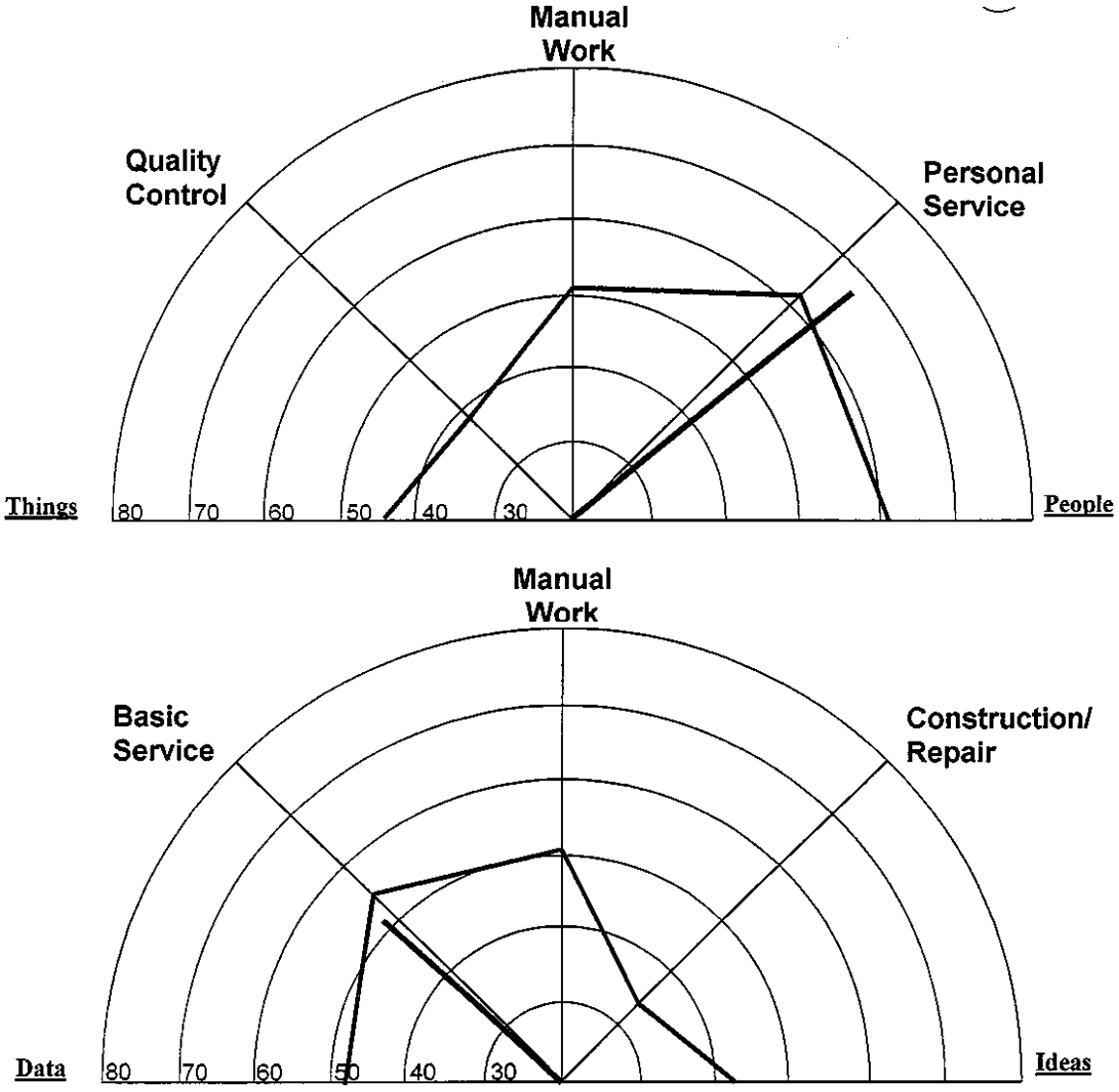


FIG. 6. Graphs and vectors for lower prestige scales for example 3.

TABLE 5. Personal Globe Inventory Technical Score Profile for Example 3

Scale	T scores			
	Composite	Same sex (norm)	Liking	Competence
Spherical scales				
Social Facilitating	60	55	60	60
Managing	62	53	61	62
Business Detail	52	56	50	54
Data Processing	53	54	50	54
Mechanical	45	50	45	46
Nature/Outdoors	42	47	42	43
Artistic	52	52	50	54
Helping	55	50	57	53
Social Sciences	34	29	36	30
Influence	35	33	39	32
Business Systems	45	44	48	43
Quality Control	38	40	35	40
Manual Work	52	55	50	54
Personal Service	63	60	67	60
Financial Analysis	42	45	44	40
Science	31	35	32	30
Construction/Repair	35	40	38	33
Basic Service	55	52	50	59
Liking–Competence				
Basic Interest	45	47		
High Prestige	55	54		
Low Prestige	44	45		
Six types				
Realistic	49	52		
Investigative	42	47		
Artistic	52	52		
Social	57	53		
Enterprising	59	52		
Conventional	52	56		
Four types				
People	62	57		
Things	46	50		
Data	52	53		
Ideas	45	49		
Dimensional				
People/Things	55	53		
Ideas/Data	52	54		
Prestige	40	42		

TABLE 6. Personal Globe Inventory Listing of Similar Occupations for Example 3

Similarity score	Occupation
87	Cashiers
87	Travel agents
86	Retail sales workers
85	Preschool teachers and child care workers
85	Flight attendants
84	Barbers and cosmetologists
83	Homemaker—Home health aides
80	Janitors and cleaners and cleaning supervisors
80	Private household workers
79	Counter and rental clerks
77	Interviewing and new accounts clerks
76	Reservation and transportation ticket agents
75	Secretaries
75	Stenographers and medical transcriptionists
74	Teachers' aides
74	Information clerks
73	Hotel and motel desk clerks
71	Nurses' aides and psychiatric aides
71	Occupational therapy assistants and aides
70	Mail clerks and messengers
70	Library assistants and bookmobile drivers
69	Telephone operators
68	Dental assistants
67	Medical assistants
66	Physical therapy assistants and aides
62	Chefs, cooks, and other kitchen workers
62	Food and beverage service workers
61	Correctional officers
61	Firefighting occupations
60	Guards
60	Police, detectives, and special agents
59	Private detectives and investigators
58	Insurance agents and brokers
58	Manufacturers' and wholesale sales representatives
57	Service sales representatives

Example 4: male aged 17

This is a very undifferentiated profile where there were no clear patterns of difference between the eight basic interest scales (see Table 7), so the more molar four scales are represented (Figure 7). The individual has a slight tendency toward things and less so toward data. General interventions aimed at helping him explore these basic interest types should be used. There were no clear prestige or like-competence discrepancy patterns (see Table 7), so these were not presented. The presentation of similar occupations (Table 8) indicates that there are few occupations which are similar to the interest pattern of this individual. Given this very undifferentiated profile, it seems most appropriate to focus on the four basic scales as a first step to explore himself and the world of work.

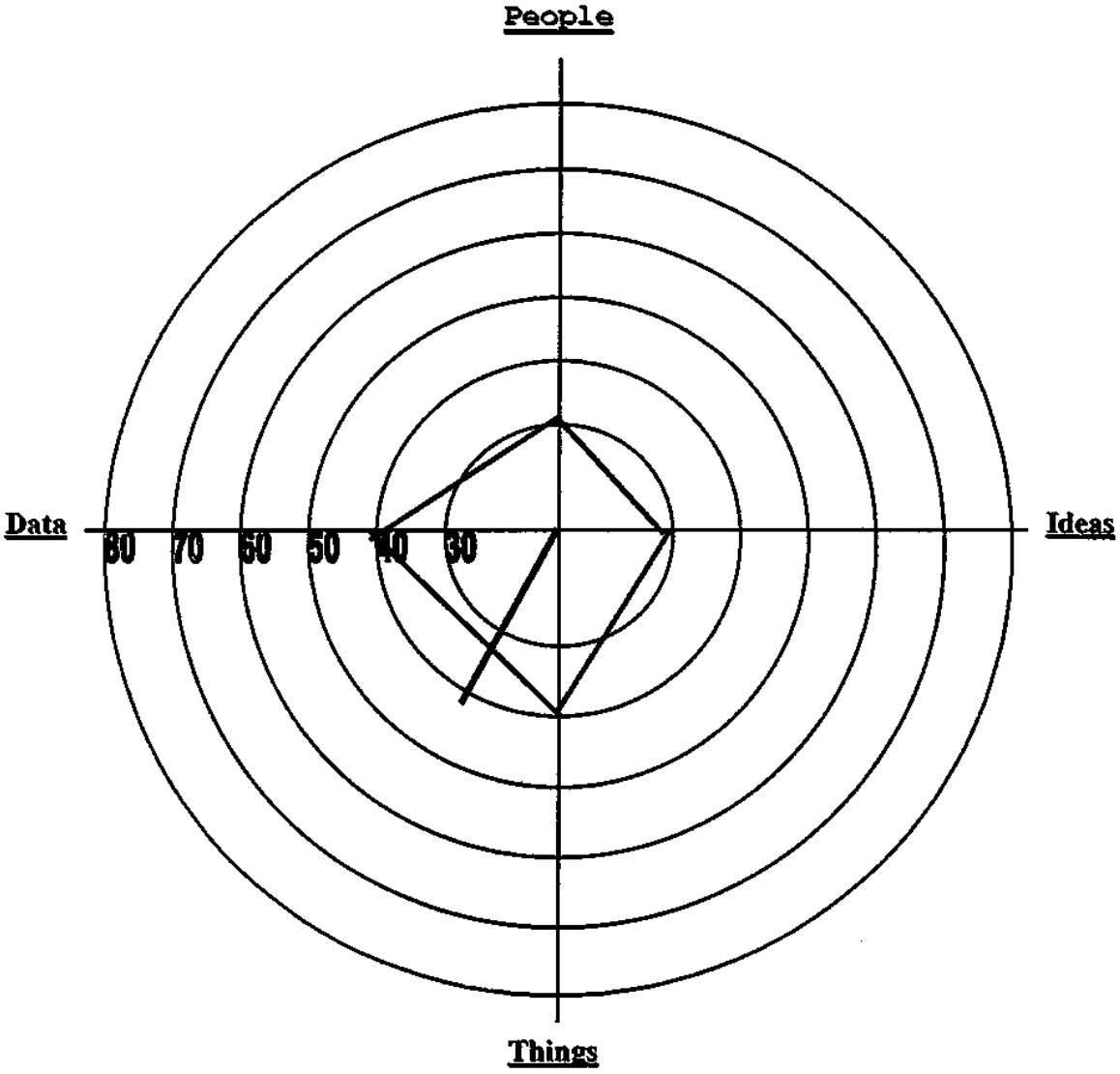


FIG. 7. Circular graph and vector score for example 4 four basic interest scores.

TABLE 7. Personal Globe Inventory Technical Score Profile for Example 4

	T scores			
Scale	Composite	Same sex (norm)	Liking	Competence
Spherical scales				
Social Facilitating	30	33	30	30
Managing	36	36	35	37
Business Detail	40	39	42	37
Data Processing	44	42	44	45
Mechanical	42	40	42	43
Nature/Outdoors	30	28	28	24
Artistic	25	25	28	24
Helping	34	38	30	38
Social Sciences	47	49	45	49
Influence	48	45	48	48
Business Systems	43	43	43	44
Quality Control	42	40	40	44
Manual Work	40	40	38	42
Personal Service	47	47	45	49
Financial Analysis	42	40	44	40
Science	40	37	42	35
Construction/Repair	49	45	51	47
Basic Service	39	41	37	40
Liking–Competence				
Basic Interest	44	45		
High Prestige	48	48		
Low Prestige	51	60		
Six types				
Realistic	43	42		
Investigative	30	28		
Artistic	25	25		
Social	32	37		
Enterprising	37	38		
Conventional	42	42		
Four types				
People	32	37		
Things	43	40		
Data	40	40		
Ideas	28	27		
Dimensional				
People/Things	42	44		
Ideas/Data	55	60		
Prestige	45	46		

TABLE 8. Personal Globe Inventory Listing of Similar Occupations for Example 4

Similarity score	Occupation
70	Computer programmers
65	Drafters
65	Computer scientists and systems analysts
64	Statisticians
62	Accountants and auditors
62	Engineering technicians
60	Library technicians
59	Paralegals
58	Science technicians
58	Inspectors and compliance officers
57	Actuaries
52	Broadcast technicians
51	Underwriters
50	Budget analysts
50	Bank tellers
49	Clerical supervisors and managers
48	Computer and peripheral equipment operators
47	Municipal clerks
47	Proofreaders and copy markers
46	Real estate clerks
45	Statistical clerks
43	Industrial engineers
42	Mechanical engineers
41	Metallurgical, ceramic, and materials engineers
40	Mining engineers
39	Nuclear engineers
38	Petroleum engineers
37	Court clerks
33	Credit clerks and authorizers
32	Credit analysts
32	Tax examiners, collectors, and revenue agents
31	Pharmacy technicians
31	Title examiners and searchers
30	Mathematicians
30	Operations research analysts
30	Veterinary technicians

Example 5: male aged 37

The basic interest profile (Table 9) is one of someone who is interested in a broad set of activities with high scores (greater than or equal to T scores of 50) on Social Facilitating, Helping, Artistic, Nature/Outdoors and Mechanical (Figure 8). Only Managing, Business Detail and Data Processing are low. However, there was a clear pattern of differences between the Liking and Competence items (see Table 10), and so these scores are represented graphically (Figure 9). This individual sees himself as liking Artistic, Helping, and Social Facilitating activities while he sees himself as not being especially competent in these same activities. The opposite pattern emerges on Nature/Outdoors and Mechanical activities, where he sees himself as competent, but that he does not like these activities. This individual's broad interest pattern is reflective of his very different pattern for likes and competence. This individual would need to work on finding a people or artistic interest that utilizes his mechanical and outdoor skills. Or if these two very different domains cannot be combined, then perhaps he should search for two separate domains to express each; for example the skills as an occupation and the liking as an avocation. However, given the different pattern of likes and competence, this individual would probably not be satisfied in very technical, less people oriented positions. Although the technical competence would prove helpful, the liking of these activities is low.

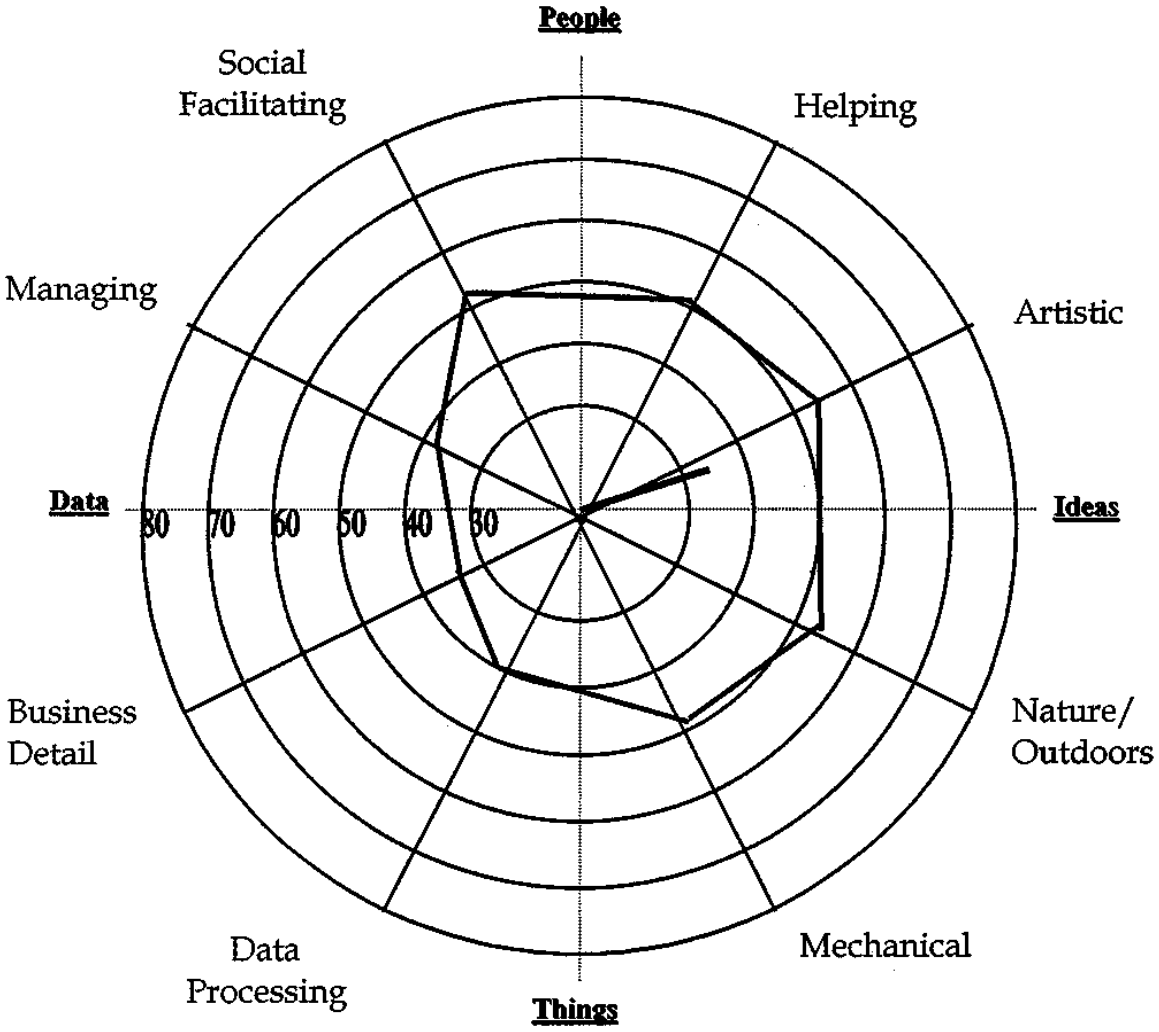


FIG. 8. Circular graph and vector score for example 5 eight basic interest scores.

TABLE 9. Personal Globe Inventory Technical Score Profile for Example 5

Scal	T scores			
	Composite	Same sex	Liking	Compete
Spherical scales				
Social Facilitating	53	56	56	40
Managing	37	38	45	34
Business Detail	34	33	33	35
Data Processing	42	40	36	53
Mechanical	50	47	41	61
Nature/Outdoors	56	54	46	62
Mechanical	50	47	41	61
Helping	52	55	58	38
Social Sciences	59	62	59	59
Influence	59	57	60	58
Business Systems	50	48	47	53
Quality Control	47	45	53	50
Manual Work	40	40	40	40
Personal Service	41	41	42	38
Financial Analysis	50	47	52	47
Science	59	55	58	59
Construction/Repai	42	40	40	44
Basic Service	40	42	40	41
Liking–Competence				
Basic Interest		65	66	
High Prestige		57	57	
Low Prestige		48	48	
Six types				
Realistic		47	44	
Investigative		56	54	
Artistic		56	58	
Social		59	62	
Enterprising		40	39	
Conventional		41	39	
Four types				
People		59	62	
Things		47	44	
Data		35	32	
Ideas		61	60	
Dimensional				
People/Things		55	57	
Ideas/Data		65	40	
Prestige		57	55	

TABLE 10. Personal Globe Inventory Listing of Similar Occupations for Example 5

Similarity score	Occupation
88	Engineering, science, and data processing managers
87	Life scientists
85	Agricultural scientists
85	Communications and transportation managers
84	Farm and home management advisers
82	Veterinarians
82	Veterinarian technicians
82	Camera and photographic equipment repairs
81	Biological and medical scientists
81	Foresters and conservation scientists
80	Social scientists
80	Economists and marketing research analysts
76	Psychologists
75	Residential counselors
74	Urban and regional planners
71	Reporters and correspondents
71	Writers and editors
70	Schoolteachers
70	Designers
70	Photographers and camera operators
69	Social and recreation workers
68	Human services work
65	Recreation workers
65	Social workers
62	Teachers, librarians, and counselors
62	Adult education teachers
61	Archivists and curators
61	College and university faculty
60	Counselors
60	Clergy
58	Optometrists
58	Special education teachers
57	Librarians
57	Recreational therapists
56	Registered nurses
52	Respiratory therapists
52	Speech—Language pathologists and audiologists
52	Occupational therapists
51	Pharmacists
51	Physical therapists
49	Physician assistants

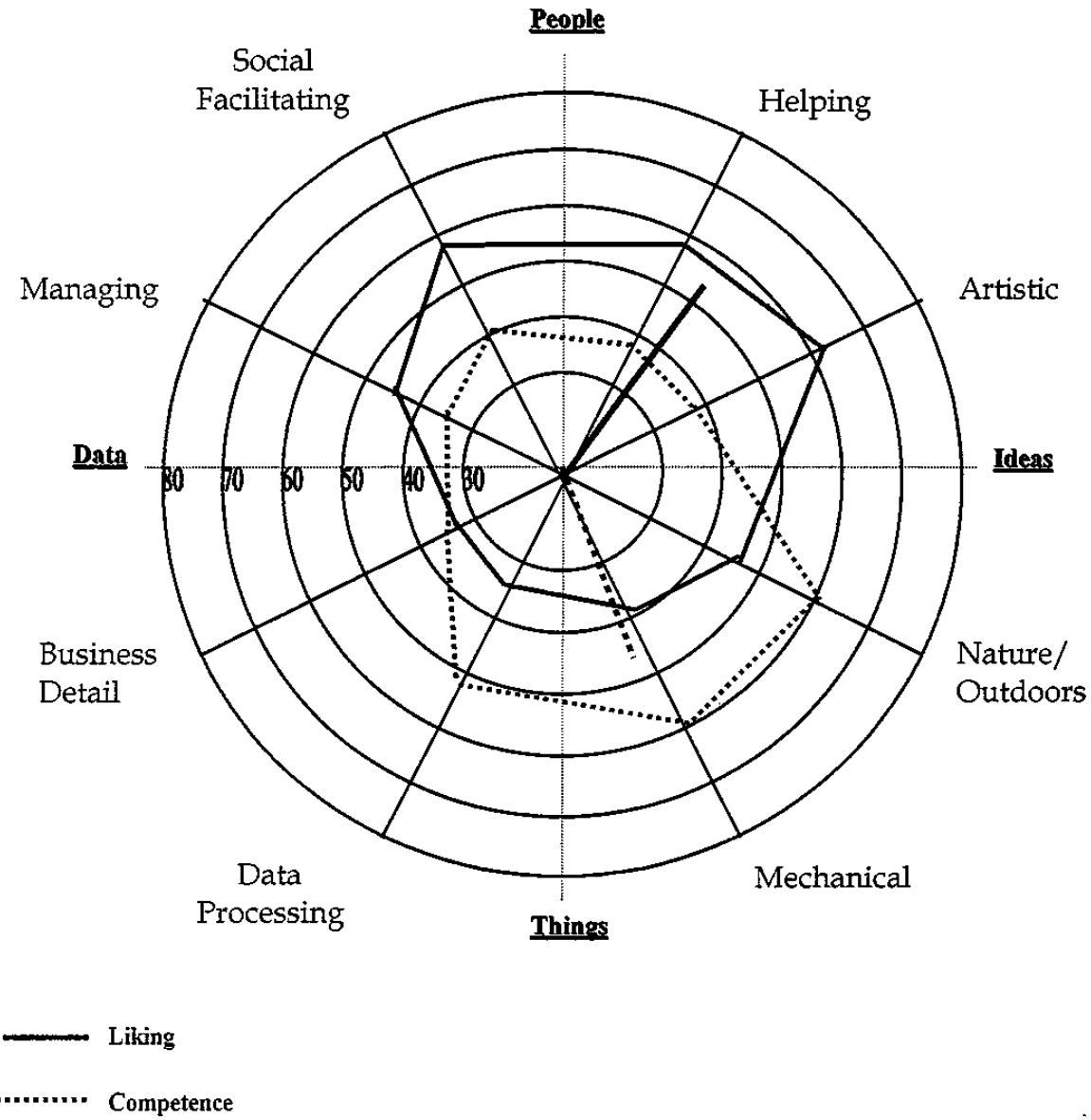


FIG. 9. Circular graph and vector score for example 5 with liking and competence scores represented separately.