

Augmenting The Military's Recruitment Strategies: An Assessment-Based System that Addresses Psychographic Marketing and Placement Challenges

John W. Jones, Ph.D.; Noelle K. Newhouse, M.S.; Michael R. Stowers, M.A.

Executive Summary

This study was designed to better understand the personality profiles and vocational preferences of 3,511 research subjects in the 17-24 year age range. This age range was selected since it seemed to mirror the age ranges of high school graduates and college students who might be interested in a career in the military. The research study yielded the following major findings (partial listing):

- Based on a review of 16 primary personality factors and the big-5 global factors, this research group has a unique constellation of personality traits that have marketing and recruitment implications. For example, the group is fairly extraverted and exhibits above average levels of warmth, liveliness, and even team-orientation. Moreover, the dominant Holland vocational typology is the Social type which means this group, on average, is concerned about the welfare of others. Hence, both the extraverted and the social themes suggest a very powerful marketing orientation to appeal to powerful personality needs.
- The group also exhibited some personality traits that will be a bit more challenging in a military culture, such as slightly lower levels of emotional stability and conscientiousness - dependability, coupled with above average levels of worry and apprehension. Hence,

more time and sophisticated indoctrination strategies are probably needed to make sure that contemporary recruits learn and adopt the "right stuff" in terms of their attitudes and personality manifestations.

- Wide diversity in the six vocational personality styles was obtained. This is an important finding since many of the higher demand military jobs fall into Dr. Holland's Realistic and Enterprising categories, yet many of the subjects in this study fell into the Social type category so some conflict between labor demand and supply was identified.
- Finally, it is suggested that military recruiters could benefit from having preliminary personality scores and profiles of their recruitment candidates early on in the recruitment process for two major reasons: (a) the recruiters would know which types of military jobs would be most appealing to each recruit; and (b) unique personality profiles could be identified early on so that the recruiters could better fit their offerings to the needs of the recruits.

Opportunity

The purpose of this study is to present an expanded paradigm for recruiting prospective enlistees. Military recruitment presents classic supply-demand challenges just like any other labor market force. Due to the all-volunteer nature of the military's staffing model, there is obviously going to be wider variability as to whether or not the military achieve its recruitment goals. For example, during times of war and less positive press coverage, the recruitment challenge will obviously be tougher. Conversely, during peace time and when the labor market is tight, recruitment goals should be easier to hit.

Military recruiters are at the front line of the recruitment process. The recruiter's challenge is to "sell" the reasons why a prospective enlistee would want to join a particular branch of the military. The recruiter must identify prospects, quickly develop rapport with these prospects, and then engage the prospect in the recruitment and enlistment process. The ultimate goal is to meet one's recruitment quota. Selling points include matching the recruit's career interests with the needs of the military, appealing at an emotional

level to the prospect's sense of honor to country, and basically overcoming all objections to enlisting (e.g., family members' concerns and personal safety concerns).

Because of the recruitment challenges that the military faces, this study was designed to identify a new recruitment strategy that would enable recruiters to better understand the prospects with whom they are interacting and help them address the aforementioned challenges. More specifically, it is hypothesized that if recruiters were trained and certified to offer a web-enabled measure of normal personality to prospective enlistees, then they would have a much broader understanding, immediately, of these prospects' career interests and personality styles and would, therefore, be better prepared to meet these enlistees' career goals and objectives. By understanding a prospective enlistee's personality style, the recruiter would also be better able to quickly develop rapport with the prospect. Unfortunately, most forms of military assessment happen after a prospect has already made a decision to enlist; therefore the goal of this study is to review the merits of using a personality instrument to assist recruiters who are at the beginning stages of the recruitment process. Parenthetically, only trained and certified recruiters¹ would have access to such a program, and all professional standards would be followed.

Background

The Sixteen Personality Factor Questionnaire: Fifth Edition (16PF) is a universal measure of normal personality traits that generates a wide variety of assessment reports for an extensive variety of applications, including human resource assessment and vocational testing. The 16PF has a successful history of application in the fields of protective services and military assessment, too. The 16PF measures 16 primary personality traits, 5 global personality factors, and 6 vocational personality typologies. The names and definitions of these assessment scales and composite scores are summarized in Tables 1 and 2.

¹ Military recruiters with relevant college-level coursework in Tests and Measurement and/or satisfactory completion of an IPAT or comparable certification training course.

Table 1. Primary Factor Descriptions

16PF Primary Left	Factors Meaning (-)	Right Meaning (+)
A Warmth	Reserved, Impersonal, Distant	Warm, Outgoing, Attentive to Others
B Reasoning	Concrete	Abstract
C Emotional Stability	Reactive, Emotionally Changeable	Emotionally Stable, Adaptive, Mature
E Dominance	Deferential, Cooperative, Avoids Conflict	Dominant, Forceful, Assertive
F Liveliness	Serious, Restrained, Careful	Lively, Animated, Spontaneous
G Rule-Consciousness	Expedient, Nonconforming	Rule-Conscious, Dutiful
H Social Boldness	Shy, Threat-Sensitive, Timid	Socially Bold, Thick-Skinned, Venturesome
I Sensitivity	Utilitarian, Objective, Unsentimental	Sensitive Aesthetic, Sentimental
L Vigilance	Trusting Unsuspecting, Accepting	Vigilant, Suspicious, Skeptical, Wary
M Abstractedness	Grounded, Practical, Solution-Oriented	Abstracted, Idea-Oriented, Imaginative
N Privatness	Forthright, Genuine, Artless	Private, Discreet, Non-Disclosing
O Apprehension	Self-Assured, Unworried, Complacent	Apprehensive, Self-Doubting, Worried
Q ₁ Openness to Change	Traditional, Attached to Familiar	Open to Change, Experimenting
Q ₂ Self-Reliance	Group-Oriented, Affiliative	Self-Reliant, Solitary, Individualistic
Q ₃ Perfectionism	Tolerates disorder, Unexacting, Flexible	Perfectionistic, Organized, Self-Disciplined
Q ₄ Tension	Relaxed, Placid, Patient	Tense, High Energy, Driven

Table 2. Global Factor Descriptions

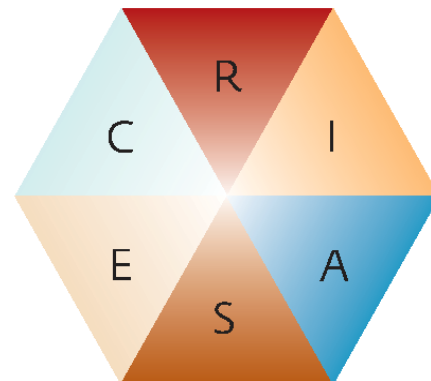
Cattell's 16PF Left Meaning (-) "Big 5" Global	Factors	Right Meaning (+)
EX Extraversion	Introverted, Socially Inhibited	Extraverted, Socially Participating
AX Anxiety	Low Anxiety, Unperturbed	High Anxiety, Perturbable
TM Tough Mindedness	Receptive, Open-Minded, Intuitive	Tough-Minded, Resolute, Unempathic
IN Independence	Accommodating, Agreeable, Selfless	Independent, Persuasive, Willful
SC Self-Control	Unrestrained, Follows Urges	Self-Controlled, Inhibits Urges

As mentioned above, the 16PF also successfully predicts the following six Holland vocational code types:

- **Realistic (R):** Works effectively with hands and tools;
- **Investigative (I):** Enjoys research, learning and problem solving and inventing;
- **Artistic (A):** Imaginative, creates original works in writing, painting, music, and arts;
- **Social (S):** Interacts effectively with others, enjoys working with and helping others;
- **Enterprising (E):** Welcomes responsibility and leadership roles, speaks effectively to groups; and
- **Conventional (C):** Strong organizational and arithmetic skills, detailed and accurate.

The aforementioned six (6) vocational personality code types form a universal theory of vocational choice and preference by John Holland. That is, almost all jobs can fit under each of the six code types. However the 16PF approach differs from the Holland approach to career preferences in one major way. That is, with the Holland approach, test-takers simply self-report the types of jobs they **think** they prefer. Their preferences can obviously be shaped by parental and societal expectations, and not just their personal preferences. With the 16PF approach, it is helpful to conceptualize these Holland themes graphically as a kind of continuum (see Figure 1).

Figure 1. Holland's Occupational Personality



Occupational themes tend to be most similar to the two themes on either side of your most dominant theme and the most different from the theme directly across. Thus, if "R" is your dominant theme, then "I" and "C" are the two most similar themes and theme "S" is the most dissimilar. A broader description of each vocational personality typology follows along with a listing of military occupations that fall within each vocational category. Additionally, the following descriptions list the 16PF primary personality scales that predict each vocational personality type.

Realistic: Works Effectively With Hands and Tools

The Realistic theme centers on manipulation of tools and knowledge of mechanical principles. Persons scoring high on this theme show interest in activities such as repairing mechanical apparatus, working on cars, mechanical drawing and outdoor activities such as farming, hunting and fishing. In a related vein, they often show experience and skill in mechanical drawing, operating machinery and repairing automobiles, furniture or electrical devices. They rate themselves as high in mechanical ability and manual skills.

Holland claims that Realistic people may lack social skills and this is evidenced by the personality data. The data indicates many aspects of tough mindedness including reticence, reserve,

and an objective and unsentimental outlook. However, Realistic people may be open to new ideas, which is not an aspect of tough-minded people, who tend to be conservative. Realistic people are also characterized by aspects of low anxiety; they are self-assured and laid back, and they are typically relaxed and tolerant.

Realistic people indicate interest in mechanical or outdoor professions such as mechanic, electrician, fire fighter, carpenter, fish and wildlife specialist, and surveyor.

16PF Correlates: Similarities between personality characteristics and the Realistic theme are predicted by these 16PF factors: Low Warmth (A-), Low Sensitivity (I-), Low Apprehension (O-), Openness to Change (Q1+), and low Tension (Q4-).

Military Occupations Benefiting From A Dominant "R" Theme:

Air Crew Members	Construction Specialists	Marine Engineer Mechanics	Radar & Sonar Operators
Air Traffic Controllers	Dental & Optical Laboratory Technicians	Medical Care Technicians	Radiologic (X-Ray) Technicians
Aircraft Launch & Recovery Specialists	Dental Specialists	Medical Laboratory Technicians	Seamen & Sea women
Aircraft Mechanics	Divers	Meteorological specialists	Ship Electricians
Airplane Navigators	Electrical Products Repairers	Non-Destructive Testers	Space Operations Specialists
Airplane Pilots	Electronic Instrument & Equipment Repairers	Optometric Technicians	Special Forces
Armored Assault Vehicle Crew Members	Emergency Management Specialists	Ordnance Specialists	Surveying, Mapping & Drafting Technicians
Artillery & Missile Crew Members	Firefighters	Petroleum Supply Specialists	Survival Equipment Specialists
Audiovisual & Broadcast Technicians	Flight Engineers	Pharmacy Technicians	Unmanned Vehicle Operations Specialists
Avionics Technician	Food Services Specialists	Plumbers & Pipe Fitters	Vehicle Drivers
Building Electricians	Heating & Cooling Mechanics	Power Plant Electricians	Warehousing & Distribution Specialists
Cardiopulmonary & EEG Technicians	Helicopter Pilots	Powerhouse Mechanics	Water & Sewage Treatment Plant Operators
Cargo Specialists	Infantry	Precision Instrument & Equipment Repairers	Weapons Maintenance Technicians
Communications Equipment Operators	Law Enforcement & Security Specialists	Printing Specialists	Welders & Metal Workers
Construction Equipment operators	Machinists	Quartermasters & Boat Operators	

Investigative: Enjoys Research, Learning and Problem-Solving, and Inventing

The Investigative theme is characterized by analytical skill and curiosity. High scorers show interest in the manipulation of ideas or scientific principles. They enjoy reading scientific books or articles, working in a laboratory – especially on a science project or theory – applying math to problems and taking courses in science or math. They are well-versed in scientific and math principles and are experienced in the use of the associated tools such as calculators, microscopes, and computers. They rate themselves as high in scientific and math ability.

Investigative people's personality characteristics are quite diverse. As would be expected, they show above-average reasoning ability. They tend to be reserved and reticent rather than sociable

and are also objective and unsentimental. Regression analyses indicate that the Investigative type is predicated by a willingness to entertain new perspectives and opinions, along with an inward focus on ideas and abstract possibilities. This latter combination may be related to some aspect of scientific creativity. When in potentially frustrating situations, Investigative people tend to be patient.

Investigative people indicate interests in the scientific professions (e.g. biologists, chemist, zoologist, geologist, physicist, etc.) and also in editing and writing scientific books and journals.

16PF Correlates: Similarities between personality characteristics and the Investigative theme are predicted by these 16PF factors: Low Warmth (A-), Reasoning (B+), Low Sensitivity (I-), Abstractedness (M+), Low Privatness (N-), Openness to Change (Q1+), and finally, Low Tension (Q4-).

Military Occupations Benefiting From A Dominant "I" Theme:

Aerospace Engineers	Environmental Health & Safety Professionals	Life Scientists	Physical & Occupational Therapists
Civil Engineers	Industrial Engineers	Marine Engineers	Physician Assistants
Computer Systems Specialists	Intelligence Officers	Nuclear Engineers	Physicians & Surgeons
Dentists	Intelligence Specialists	Optometrists	Psychologists
Dieticians	Interpreters & Translators	Pharmacists	Space Operations Officers
Electrical & Electronics Engineers			

Artistic: Imaginative, Creates Original Works in Writing, Painting, Music, and Arts

The Artistic theme concerns self-expression, particularly in the creation of artistic ideas or products. Interests of high scorers typically cover vast areas of art and entertainment including drawing and painting, acting, musical performance, composing, and writing, photography, and design. Not unexpectedly,

artistic people have experience in musical performance, acting, artwork, writing, designing, and so forth. They rate themselves as highly skilled in artistic and musical ability.

Artistic people are characterized by tender mindedness; they usually are sensitive and sentimental and they show strong aesthetic tastes. They can also be abstracted, fanciful, and idea-oriented. They are open to change and to new experiences. Additionally Artistic people tend to be bold and uninhibited. Correlations and mean

profiles indicate that Artistic people may be low in self-control; they may go against the grain and question tradition as part of their creative process.

Artistic people prefer occupations in the arts and entertainment industry. They indicate interest in the evident options of artist sculptor or painter and they also express interest in occupations involving cartooning, creative writing (poet, playwright, novelist, freelance writer, journalist), music (musician, musical arranger, singer, composer, symphony conductor), and acting.

16PF Correlates: Similarities between personality characteristics and the Artistic theme are predicted by these 16PF factors: Social Boldness (H+), Sensitivity (I+), Abstractedness (M+), and Openness to Change (Q1+).

Military Occupations Benefiting From A Dominant "A" Theme:

- Graphic Designers & Illustrators
- Musicians
- Photographic specialists

Social: Interacts Effectively with Others, Enjoys Working With and Helping Others

The Social Theme pertains to the desire to help and care for others. High scorers show interest in charitable work, taking care of children, studying juvenile delinquency, teaching and studying

psychology and human relations. They find it easy to talk with all kinds of people, to lead group discussions, to explain things to people and in general to teach others. They participate in charity drives, are good at helping people who are upset or troubled and indicate that others seek them out to tell their troubles. They rate themselves highly in the ability to teach and in the skill of understanding others.

Not surprisingly, Social people are extraverted. Correlations show them to be exuberant, forthright, and group-oriented. They tend to be warm, personable and sociable, but also bold and venturesome in social contacts. They remain open to new ideas and experiences, perhaps facilitating their interplay with diverse individuals.

High Social scorers prefer working in helping professions such as teaching and school administration; counseling- related positions such as marriage counselor, speech therapist, social worker and vocational counselor; human relations jobs such as director of welfare agency or youth camp director; and positions relating to work in general fields such as psychology and sociology.

16PF Correlates: Similarities between personality characteristics and the Social theme are predicted by these 16PF factors: Warmth (A+), Low Emotional Stability (C-), Rule Consciousness (G+), Social Boldness (H+), and Openness to Change (Q1+).

Military Occupations Benefiting From A Dominant "S" Theme:

Broadcast Journalists & News Writers	Medical Service Technicians	Recruiting Managers	Social Workers
Caseworkers & Counselors	Personnel Managers	Registered Nurses	Speech Therapists
Chaplains	Physical & Occupational Therapy Specialists	Religious Program Specialists	Training Specialists & Instructors
International Relations Officers			

Enterprising: Welcomes Responsibility and Leadership Roles, Speaks Effectively to Groups

The Enterprising theme involves persuasion of others, leadership, and generally a high need for achieving objectives. High scorers indicate interest in influencing others, leading a group, or taking charge of a political campaign. They are drawn to business-related activities such as sales and attending sales conferences, running their own business, and learning business success strategies. Additionally they show interest in taking courses in business, administration, or leadership. Enterprising people report that they have earned awards for sales or leadership. They have experience in managing a small business or service or a sales campaign; they may have a reputation for being able to deal with difficult people. They have organized others' work and admit to being ambitious, assertive, and persuasive. They rate themselves as having above

average sales and leadership abilities as well as good managerial and public speaking skills.

Enterprising persons are sociable and friendly yet they have a tendency to exert their will over others. They tend to be bold in social settings and may enjoy being the focus of a group's attention. They have an unsentimental and objective outlook. Correlations show them to be exuberant and self-assured.

Enterprising people prefer business occupations such as general manager, buyer, advertising executive, sales person, business executive, restaurant manager, estate agent, travel guide, TV/Radio announcer, and emcee.

16PF Correlates: Similarities between personality characteristics and the Enterprising theme are predicted by these 16PF factors: Warmth (A+), Dominance (E+), Social Boldness (H+), Low Sensitivity (I-), and Privateness (N+).

Military Occupations Benefiting From A Dominant "E" Theme:

Administrative Officers	Computer Systems Officers	Lawyers & Judges	Special Forces Officers
Air Traffic Control Managers	Emergency Management Officers	Logisticians	Store Managers
Armored Assault Vehicle Officers	Finance & Accounting Managers	Management Analysts & Planners	Supply & Warehousing Managers
Artillery & Missile Officers	Food Service Managers	Music Directors	Training & Education Directors
Audiovisual & Broadcast Directors	Health Services Administrators	Ordnance Officers	Transportation Maintenance Managers
Combat Mission Support Officers	Infantry Officers	Public Information Officers	Transportation Managers
Communications Managers	Law Enforcement & Security Officers	Purchasing & Contracting Managers	

Conventional: Strong Organizational and Mathematical Skills, Detailed and Accurate

The Conventional theme entails a preference for organizing and maintaining information. High scorers indicate interests in filling out tax forms, typing, bookkeeping and business computations,

operating business machines and computers, setting up and keeping detailed records, doing inventory, and taking courses in business, bookkeeping, or commercial math. Such persons are competent typists and data processors. They can operate business machines, have experience doing tasks such as taking shorthand and filing, can do large amounts of paperwork in little time, and can keep detailed and accurate records. They

rate themselves as having above-average clerical ability and office skills.

Personality characteristics of Conventional people include having an objective, unsentimental outlook and being practical and solution-oriented. These people show a high need for order and they are self-disciplined if not perfectionistic.

Conventional people prefer clerical and record keeping professions such as bookkeeper, tax expert, certified public accountant, credit examiner, financial analyst, payroll clerk, bank examiner, bank teller, court stenographer, and inventory controller.

16PF Correlates: Similarities between personality characteristics and the Conventional theme are predicted by the following 16PF factors: Low Sensitivity (I-), Low Abstractedness (M-), and Perfectionism (Q3+).

Military Occupations Benefiting From A Dominant "C" Theme:

Administrative Support Specialists
 Finance & Accounting Specialists
 Flight Operations Specialists
 Legal Specialists & Court Reporters
 Medical Record Technicians
 Personnel Specialists
 Preventive Maintenance Analysts
 Sales & Stock Specialists
 Transportation Specialists

Case Study: Identifying Psychographic Profiles

The purpose of this study was to identify the percentage of subjects in our research sample that fit each of the six (6) Holland code types as predicted by the 16PF. The specific research sample was selected from a US Census group of subjects and falls within the age range of the typical military recruit (i.e., 17-24 years of age). A secondary purpose of the study was to provide the average personality profile across each of the six vocational typologies. Finally, the practical implications of this research study are discussed,

especially in relation to military recruitment efforts.

Sample

In this study, 3,511 respondents in the 17-24 year old age range were selected from a random sample of US Census norms that are used with the 16PF. This random sample of norms included 10,261 subjects. The breakdown between males and females was approximately 49.1% males and 50.9% females. It is estimated that 77.4% of the sample is White, while 22.6% comes from protected sub-groups of the population. All respondents completed the 16PF within the last 5-6 years.

Primary Factor Descriptives

Table 3 includes the average 16PF primary scale scores for the research sample of 3,511 subjects. (Refer to the aforementioned definitions of the primary scale scores when interpreting these average scores.) On average, this group of subjects in the 17-24 year age range tended to exhibit above-average scores on the following scales²:

Above-Average Sten Scores (M=5.5):

- Warmth
- Liveliness
- Social Boldness
- Vigilance
- Abstractedness
- Apprehension
- Openness to Change

On average, the group tended to exhibit below-average scores on these scales:

Below-Average Sten Scores (M=5.5):

- Reasoning
- Emotional Stability
- Dominance

² Note: The 16PF primary, global and Holland predicted scores are based on a Sten distribution with a theoretical mean of 5.5 and a standard deviation of 2.0. A broader set of interpretation guidelines is presented in Appendix A.

- Rule-Consciousness
- Privateness
- Self-Reliance
- Perfectionism
- Tension

These results have some practical implications. For example, looking at the above-average scores, this sample is warm, lively, and open, yet these personality traits are countered with a higher level of worry and vigilance. A review of the key below-average scores suggests a bit of concern over traits such as lower emotional stability and rule-consciousness. Yet the most striking finding is that this group is more group-oriented and affiliative as opposed to being self-reliant, individualistic, and solitary. The marketing implications of these psychographic variables need to be fully explored.

Global Factor Descriptives

The global personality traits or “Big-5 Factors” were also analyzed for this research sample

(Table 4). It is recommended that the reviewer study the directional scoring of the Big-5 Factors (Table 2).

Inspection of Table 4 indicates that the group, on average, is more extraverted than introverted. This means they gravitate toward people, they are affiliative, and a team-oriented culture is probably preferred. However this group as a whole is experiencing higher levels of anxiety. Slightly lower levels of emotional stability coupled with a higher degree of worry and apprehension leads to this higher anxiety score.

The group, on average, is also more open-minded and receptive to change than the norm. Hence, new experiences and changes in their lives should be seen as beneficial. Finally, lower self-control scales reflect a tendency to be more unrestrained as this group likes to follow their own urges. This desire, of course, will be challenged in a military culture that is built around discipline.

Table 3. Descriptive Statistics: Primary Factors

Primary Factors	N	Mean	Std. Deviation
A Warmth	3511	6.0450	1.75614
B Reasoning	3511	5.2928	1.75550
C Emotional Stability	3511	5.1655	1.75435
E Dominance	3511	5.2059	1.66907
F Liveliness	3511	6.3948	1.77212
G Rule-Consciousness	3511	5.2296	1.81015
H Social Boldness	3511	5.6295	2.02582
I Sensitivity	3511	5.3275	1.79262
L Vigilance	3511	6.3270	1.69318
M Abstractedness	3511	5.8396	1.70375
N Privateness	3511	5.3156	1.81041
O Apprehension	3511	5.8684	1.70011
Q1 Openness to Change	3511	5.5053	1.68195
Q2 Self-Reliance	3511	5.1991	1.69714
Q3 Perfectionism	3511	5.2410	1.85271
Q4 Tension	3511	5.4426	1.66976
Valid N (listwise)	3511		

Table 4. Descriptive Statistics: Global Factors

Big-5 Factors	N	Mean	Standard Deviation
Extraversion	3511	6.1034	1.74602
Anxiety	3511	6.0063	1.87153
Tough-Mindedness	3511	5.3727	1.72734
Independence	3511	5.5294	1.61020
Self Control	3511	5.0074	1.66065
Valid N (listwise)	3511		

Holland Type Descriptives

A major purpose of this study is to identify the dominant Holland code types among this group. The top-down ordering of these code types is listed below, and is based on the average predicted Holland code type score in Table 5:

- Social (Mean = 5.82)
- Enterprising (Mean = 5.54)
- Artistic (Mean = 5.48)

- Investigative (Mean = 5.39)
- Conventional (Mean = 5.36)
- Realistic (Mean = 5.36)

This means that a key motivator for this group is to reach out and help others. Another key motivator is to learn job skills and gain benefits that can help the individual make a living down the road.

Table 5. Descriptive Statistics: Predicted Holland types

Predicted Holland Types (from 16PF Fifth Edition)	N	Mean	Standard Deviation
Realistic	3511	5.3592	1.89075
Investigative	3511	5.3923	1.74293
Artistic	3511	5.4753	1.70584
Social	3511	5.8160	1.73104
Enterprising	3511	5.5418	1.58884
Conventional	3511	5.3640	1.74401
Valid N (listwise)	3511		

Holland Frequency Tables

Tables 6-11 provide breakdown analyses of how many respondents fall at the high end, average range, and low end of each predicted vocational type. The results from Tables 6-11 can best be summarized in the following composite table.

The vocational type that had the highest percentage of respondents fall in the high-end range was the Social (17.9%) typology group.

However, the vocational type with the second highest percentage of subjects in the high-end range was the Realistic (13.9%) typology group. These results suggest that a wide variety of niche marketing and recruitment campaigns are needed to best fit a recruit's vocational personality style. Of course, additional research is needed with actually military recruits since 17-24 year olds from the US Census norm group might be considerably different from the applicant pool of traditional military recruits.

Holland Type	Low % (Sten= 1,2,3)	Average % (Sten= 4,5,6,7)	High % (Sten= 8,9,10)
Realistic	16.9%	69.2%	13.9%
Investigative	14.6%	73.9%	11.5%
Artistic	12.0%	76.1%	11.5%
Social	8.8%	73.3%	17.9%
Enterprising	10.2%	78.5%	11.3%
Conventional	14.0%	73.9%	12.1%

Table 6. Realistic-Categorized

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Low 1-3	595	16.9	16.9	16.9
Average 4-7	2428	69.2	69.2	86.1
High 8-10	488	13.9	13.9	100.0
Total	3511	100.0	100.0	

Table 7. Investigative-Categorized

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Low 1-3	513	14.6	14.6	14.6
Average 4-7	2595	73.9	73.9	88.5
High 8-10	403	11.5	11.5	100.0
Total	3511	100.0	100.0	

Table 8. Artistic-Categorized

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low 1-3	420	12.0	12.0	12.0
	Average 4-7	2672	76.1	76.1	88.1
	High 8-10	419	11.9	11.9	100.0
	Total	3511	100.0	100.0	

Table 9. Social-Categorized

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low 1-3	309	8.8	8.8	8.8
	Average 4-7	2574	73.3	73.3	82.1
	High 8-10	628	17.9	17.9	100.0
	Total	3511	100.0	100.0	

Table 10. Enterprising-Categorized

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low 1-3	359	10.2	10.2	10.2
	Average 4-7	2757	78.5	78.5	88.7
	High 8-10	395	11.3	11.3	100.0
	Total	3511	100.0	100.0	

Table 11. Conventional-Categorized

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low 1-3	491	14.0	14.0	14.0
	Average 4-7	2596	73.9	73.9	87.9
	High 8-10	424	12.1	12.1	100.0
	Total	3511	100.0	100.0	

Profiling the Holland Code Types

Tables 12-23 are supplemental research findings. They basically reflect the average personality profiles for the six Holland groups focusing on the high-end respondents (i.e., the subjects who scored an 8, 9, or 10 on a specific Holland code

type). These results are a bit confounded since the 16PF primaries were used to predict the Holland code types, yet they are deemed important here since they clearly reflect the wide levels of diversity in personality across the six groups. Male versus female breakdown analyses will be provided in a follow up study.

High Realistic Primary Factor and Global Descriptives

Table 12. Descriptive Statistics: Primary Factors

Primary Factors	N	Mean	Standard Deviation
A Warmth	488	4.4816	1.52988
B Reasoning	488	5.1885	1.72591
C Emotional Stability	488	6.4385	1.45017
E Dominance	488	5.7131	1.56044
F Liveliness	488	6.2951	1.76057
G Rule-Consciousness	488	5.4754	1.99882
H Social Boldness	488	6.1107	1.94061
I Sensitivity	488	2.8852	1.13519
L Vigilance	488	6.1967	1.65575
M Abstractedness	488	5.2357	1.68573
N Privatness	488	5.6291	1.77124
O Apprehension	488	4.1270	1.33668
Q1 Openness to Change	488	5.5676	1.52715
Q2 Self-Reliance	488	4.8607	1.77278
Q3 Perfectionism	488	5.4836	1.82267
Q4 Tension	488	4.4816	1.69177
Valid N (listwise)	488		

Table 13. Descriptive Statistics: Global Factors

Global Factors	N	Mean	Standard Deviation
Extraversion	488	5.7082	1.71059
Anxiety	488	4.3770	1.68212
Tough-Mindedness	488	7.0566	1.40726
Independence	488	5.9707	1.46215
Self Control	488	5.4039	1.77688
Valid N (listwise)	488		

High Investigative Primary Factor and Global Descriptives

Table 14. Descriptive Statistics: Primary Factors

Primary Factors	N	Mean	Standard Deviation
A Warmth	403	3.9777	1.42368
B Reasoning	403	6.5881	1.49761
C Emotional Stability	403	5.6725	1.69339
E Dominance	403	5.4293	1.60436
F Liveliness	403	6.1117	1.88604
G Rule-Consciousness	403	4.9429	2.01591
H Social Boldness	403	5.5583	2.06208
I Sensitivity	403	3.6278	1.57260
L Vigilance	403	6.1514	1.75046
M Abstractedness	403	6.3102	1.79151
N Privatness	403	5.3598	1.95269
O Apprehension	403	5.2208	1.68498
Q1 Openness to Change	403	6.1166	1.67623
Q2 Self-Reliance	403	5.4764	1.92038
Q3 Perfectionism	403	5.1811	1.84995
Q4 Tension	403	4.7146	1.61012
Valid N (listwise)	403		

Table 15. Descriptive Statistics: Global Factors

Global Factors	N	Mean	Standard Deviation
Extraversion	403	5.2876	1.91007
Anxiety	403	5.2006	1.84697
Tough-Mindedness	403	6.1892	1.84506
Independence	403	5.7903	1.55312
Self Control	403	4.7842	1.82429
Valid N (listwise)	403		

High Artistic Primary Factor and Global Descriptives

Table 16. Descriptive Statistics: Primary Factors

Primary Factors	N	Mean	Standard Deviation
A Warmth	419	6.9260	1.49377
B Reasoning	419	5.8043	1.68013
C Emotional Stability	419	5.0095	1.71816
E Dominance	419	5.8067	1.60542
F Liveliness	419	7.2936	1.58710
G Rule-Consciousness	419	4.4177	1.86885
H Social Boldness	419	7.3747	1.70853
I Sensitivity	419	7.1098	1.42008
L Vigilance	419	6.1384	1.81960
M Abstractedness	419	7.5012	1.37541
N Privatness	419	4.3222	1.87371
O Apprehension	419	5.9332	1.68026
Q1 Openness to Change	419	7.5967	1.44999
Q2 Self-Reliance	419	4.9857	1.69570
Q3 Perfectionism	419	4.4415	1.80332
Q4 Tension	419	5.4320	1.59155
Valid N (listwise)	419		

Table 17. Descriptive Statistics: Global Factors

Global Factors	N	Mean	Standard Deviation
Extraversion	419	7.3484	1.60864
Anxiety	419	6.0338	1.82969
Tough-Mindedness	419	2.7612	1.01319
Independence	419	7.0031	1.35221
Self Control	419	3.6846	1.56065
Valid N (listwise)	419		

High Social Primary Factor and Global Descriptives

Table 18. Descriptive Statistics: Primary Factors

Primary Factors	N	Mean	Standard Deviation
A Warmth	628	8.2038	.86202
B Reasoning	628	5.3153	1.65027
C Emotional Stability	628	5.3185	1.71507
E Dominance	628	5.7261	1.61378
F Liveliness	628	7.2166	1.44575
G Rule-Consciousness	628	5.9268	1.76110
H Social Boldness	628	7.6131	1.51388
I Sensitivity	628	6.0828	1.69890
L Vigilance	628	5.9506	1.73319
M Abstractedness	628	5.7150	1.73985
N Privatness	628	4.0796	1.71587
O Apprehension	628	5.8599	1.76970
Q1 Openness to Change	628	6.1783	1.67257
Q2 Self-Reliance	628	4.3487	1.54808
Q3 Perfectionism	628	5.3041	1.92975
Q4 Tension	628	5.1131	1.66442
Valid N (listwise)	628		

Table 19. Descriptive Statistics: Global Factors

Global Factors	N	Mean	Standard Deviation
Extraversion	628	8.0202	1.11091
Anxiety	628	5.6970	1.93006
Tough-Mindedness	628	4.2642	1.55350
Independence	628	6.5632	1.45876
Self Control	628	5.1846	1.69169
Valid N (listwise)	628		

High Enterprising Primary Factor and Global Descriptives

Table 20. Descriptive Statistics: Primary Factors

Primary Factors	N	Mean	Std. Deviation
A Warmth	395	7.2582	1.42464
B Reasoning	395	5.3089	1.61867
C Emotional Stability	395	6.1646	1.66504
E Dominance	395	7.1392	1.43677
F Liveliness	395	7.1316	1.51905
G Rule-Consciousness	395	5.5392	2.01022
H Social Boldness	395	8.1215	1.26066
I Sensitivity	395	4.2481	1.63844
L Vigilance	395	6.5165	1.77593
M Abstractedness	395	5.3797	1.68227
N Privatness	395	5.0633	1.65672
O Apprehension	395	4.8734	1.64615
Q1 Openness to Change	395	5.7089	1.60070
Q2 Self-Reliance	395	4.2785	1.60374
Q3 Perfectionism	395	5.5696	2.01696
Q4 Tension	395	4.9646	1.76508
Valid N (listwise)	395		

Table 21. Descriptive Statistics: Global Factors

Global Factors	N	Mean	Standard Deviation
Extraversion	395	7.5387	1.26535
Anxiety	395	5.0743	1.96810
Tough-Mindedness	395	5.7059	1.67172
Independence	395	7.5359	1.15687
Self Control	395	5.2533	1.86258
Valid N (listwise)	395		

High Conventional Primary Factor and Global Descriptives

Table 22. Descriptive Statistics: Primary Factors

Primary Factors	N	Mean	Standard Deviation
A Warmth	424	5.8349	1.72894
B Reasoning	424	5.2193	1.56996
C Emotional Stability	424	6.4222	1.64700
E Dominance	424	5.6887	1.64231
F Liveliness	424	5.8844	1.73637
G Rule-Consciousness	424	6.7052	1.52841
H Social Boldness	424	6.1863	1.99069
I Sensitivity	424	3.8349	1.63909
L Vigilance	424	5.9340	1.65324
M Abstractedness	424	3.3396	1.18610
N Privatness	424	5.2759	1.64073
O Apprehension	424	4.9269	1.79488
Q1 Openness to Change	424	4.6792	1.52084
Q2 Self-Reliance	424	4.5849	1.76447
Q3 Perfectionism	424	7.3467	1.32625
Q4 Tension	424	4.6816	1.92287
Valid N (listwise)	424		

Table 23. Descriptive Statistics: Global Factors

Global Factors	N	Mean	Standard Deviation
Extraversion	424	6.1948	1.63669
Anxiety	424	4.7047	2.02027
Tough-Mindedness	424	7.3241	1.28908
Independence	424	5.6597	1.56578
Self Control	424	7.2920	1.01158
Valid N (listwise)	424		

Practical Implications for Military Recruiters and Marketers

This report suggests that military recruiters would benefit from knowing a candidate's personality profile sooner in the process. For illustrative purposes², qualified recruiters could be trained and certified to use Level-2 assessments like the 16PF. A user-friendly interpretive report designed specifically for military recruiters could be used to further ease any interpretive demands.

Next, a set of strategies would be needed whereby prospects, after giving full and informed consent, complete assessments like the 16PF online anywhere in the country. The instructions for taking the assessment could be provided to potential recruits via a handout card or even an e-mail. The report would then be computer-scored and would be immediately forwarded to the trained and certified recruiter. Since this assessment is a low-stakes assessment at this point in the recruitment process (one that would not be used to screen out recruits), pass codes for taking the assessment could be provided in both proctored (e.g., the recruiter's office) and unproctored (e.g., the recruit's home) settings. Parenthetically, IPAT has conducted research studies comparing proctored to unproctored administration paradigms in selection settings and no significant differences were found between the two groups. The reason might be that candidates are taking a non-cognitive test that does not include "right" or "wrong" answers.

During their training and certification class, the qualified military recruiters could be instructed on how to best use the assessment results. At a minimum, the results can be used to establish a better rapport with a high-potential candidate. The results can also be used to more accurately slot a candidate for a specific family of jobs, knowing full well that additional vocational personality assessments will be given "down stream." An online personality assessment system tailored specifically for military recruiters would provide next-generation scientific technologies to make recruiters more informed.

² The following description of how the current recruitment model can be augmented is conceptual only. Military psychologists will need to interface these concepts, if even applicable, with the realities of the real-world recruitment process.

Finally, the accumulated research on recruits' personality styles and preferences can lead to ongoing refinement in the military's marketing and recruitment strategies. The research in this report suggests that the average candidate is slightly more group-oriented and affiliative as opposed to being solitary and independent. Hence, a marketing message needs to address this finding once this study is replicated with typical military recruits. In addition, the most dominant predicted Holland type is the Social type which suggests that the need for helping other countries might be an important motivator for enlisting. Finally, marketing messages that address recruits' feelings of insecurity and worry might be useful to get over any "personality hurdles" that might be blocking their decision to enlist. Again, these research findings need to be replicated with actual applicant pools of potential military recruits

© Copyright 2006 IPAT, Inc.

® 16PF is a registered trademark of the Institute for Personality and Ability Testing, Inc (IPAT). IPAT is a wholly owned subsidiary of OPP Ltd.

® OPP is a registered trademark of OPP.