IDENTIFYING AGILE AND VERSATILE OFFICERS TO SERVE IN THE OBJECTIVE FORCE

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ABSTRACT

Officers in the Objective Force will be operating in increasingly complex, fast-paced, and unstructured mission environments. Identifying the attributes predictive of officer performance in these environments is critical for establishing optimum selection and training systems for the Objective Force. One way to do this is to empirically examine the attributes associated with mission performance among Special Forces officers since these individuals currently operate in unstructured, ambiguous, fast-paced environments. Several motivational characteristics were found to predict the performance of officers as they led their Special Forces teams through an intensive, highly realistic training exercise. The implications of these results for Objective Force officer selection and training are discussed.

1. INTRODUCTION

Officers in the 21st Century U.S. Army will be faced with operating in progressively more complex, fast-paced, and unstructured mission environments. This is particularly true in the Objective Force, which must be prepared to face a variety of possible regional enemies, each with their own set of tactics and capabilities, under diverse weather and terrain conditions, on very short notice, anywhere in the world. This represents a quantum increase in the level of ambiguity and complexity that Objective Force officers must be able handle.

Technological improvements are also adding to the complexity of this task. Future military operations will require leaders to precisely coordinate multiple ground, sea, air, and possibly space-based forces across the entire depth of the battlefield. Moreover, the rapid tempo of 21st Century warfare may require delegation of more decision-making authority to junior officers, and the lethality of new weapon systems increases the chances that actions taken by these individuals will affect the outcome of the battle.

In order to optimize officer selection and training systems for the Objective Force, the attributes that predict mission performance for officers in these environments must be identified. This is frequently done through expert consensus, but another approach is to empirically examine the relationship between officer attributes and mission performance in these environments. One group of officers currently operating in these environments is in the U.S. Army's Special Forces.

The U.S. Army's Special Forces play an important role in protecting American interests around the world. The Special Forces, commonly known as the Green Berets, consist of highly trained soldiers who perform a wide variety of missions, including counterterrorism, reconnaissance behind enemy lines, training/directing indigenous forces in unconventional warfare and foreign internal defense, providing humanitarian aid to foreign countries, and executing direct action assaults that seize/destroy targets or recover friendly personnel.

Special Forces (SF) is designed around 12-man operational detachment teams (ODAs). These teams often operate for long periods of time under harsh conditions, isolated from other Army units. In order to perform their missions, these teams must be resourceful and self-sufficient. They must be flexible enough to overcome unanticipated obstacles and adjust quickly to rapidly changing contingencies without higher-order guidance. The performance of SF soldiers in these situations defines success for SF as a whole.

Although the specific tasks and missions of Objective Force officers will undoubtedly be different from those of

Special Forces officers, research with SF soldiers is particularly relevant to the Objective Force since SF soldiers routinely are required to operate in fast-paced, complex, unstructured environments. Understanding the attributes associated with success among SF officers provides valuable clues about the characteristics important for Objective Force officers who likely will be operating under similar conditions.

This research examines the relationship between psychological tests that assess cognitive aptitude and motivational characteristics and subsequent mission performance of officers leading their SF teams through an intensive, highly realistic field exercise.

2. METHOD

2.1 Subjects & Procedure

Subjects were 88 officers who were completing their final training for entry into the Special Forces. Criteria data were obtained for a subset of these officers, resulting in sample sizes of between 32 to 48 officers depending upon the particular predictor-criteria match. Approximately three-fourths of the officers in this research were captains and the remainder first lieutenants. Each of these officers passed several requirements in order to join SF. These included meeting various background and aptitude prerequisites for applying to SF, completing the 24-day SF selection course, SF Selection and Assessment program (SFAS), and completing the SF Qualification Course, SFQC, which trains the skills and knowledge necessary for service in SF.

The culmination of SFQC is a 14-day field exercise called Robin Sage, in which teams are sent out to conduct missions in an environment very similar to what SF teams encounter operationally. A battery of paper-and-pencil psychological tests was administered to the officers approximately one month before they led their teams through the Robin Sage exercise. Indices of the officers' performance leading their teams through the exercise were collected immediately after the exercise. Zero-order correlations were computed to assess the criterion-related validity of the psychological tests.

2.2 Predictor Measures

The officers completed two cognitive aptitude tests. General cognitive aptitude was assessed by the Wonderlic test (Wonderlic, 2000). Spatial ability was assessed using the Assembling Objects test (Wolfe, 1997), which was developed specifically to assess spatial ability for military populations.

A test of Conceptual Complexity also was administered. This test, the Modified Career Path Appreciation (MCPA) measure (McGee, Jacobs, Kilcullen, and Barber, 1999) is designed to measure comfort with uncertainty and a desire to construe cause-effect relationships in the environment. The MCPA correlates highly with the original Career Path Appreciation test (Jacobs & Jacques, 1991), which has been shown to predict advancement into executive leadership positions (Stamp, 1988).

A variety of temperament measures were also included in the predictor battery. Rational biodata scales measuring motivational attributes that predicted the performance of SF enlisted soldiers while on deployments (Kilcullen, Mael, Goodwin, & Zazanis, 1999) were administered. These attributes included Achievement Orientation, Fitness Motivation, Intellectual Openness, and Tolerance of Ambiguity.

Rational biodata scales measure temperament characteristics by asking questions about the test-taker's past behavior and reactions to life events. Developing a rationally scored biodata instrument typically involves identifying motivational constructs (e.g., Achievement Orientation) likely to predict the criterion of interest and writing items that sample behaviors believed to be manifestations of these attributes. Item responses are scored based upon their presumed relationship to the construct, and item scores are summed to form scale scores having substantive meaning. Previous research with rational biodata scales suggests that these assessments can reliably and validly measure their intended constructs and may be less fakable than traditional personality measures (Kilcullen, White, Mumford, & Mack, 1995).

The officers also completed the Adjective Checklist, a standard 'Big Five' personality instrument (Saucier, 1994) that asks subjects to describe themselves in terms of 40 adjectives (e.g., Bold). Two other personality scales, one measuring General Self Efficacy (Chen, Gully, & Eden, 2001), and another measuring Leadership Self Efficacy (Kane, personal communication) were included in the test battery. A complete list of predictor measures is provided in Figure 1.

Cognitive Aptitude
- Wonderlic Personnel Test
- Assembling Objects Test

Cognitive Complexity
- MCPA

Motivation/Temperament Assessments
- Adjective Checklist
  - Conscientiousness
  - Emotional Stability
  - Agreeableness
  - Extroversion
  - Openness to Experience
- General Self-Efficacy
- Leadership Self-Efficacy
- Rational Biodata Scales
  - Achievement Orientation
  - Fitness Motivation
  - Intellectual Openness
  - Tolerance of Ambiguity

Figure 1. Predictor Test Battery

2.3 Mission Performance Criteria

Robin Sage is a 24-hour-a-day, 14-day field exercise in which the teams perform many of the activities that operational SF teams are required to perform. This includes infiltrating covertly into a 'hostile' area, maneuvering covertly through rugged terrain, executing multiple combat actions and patrols, establishing contact and rapport with guerrilla forces, and arming and training the guerrilla forces to execute multiple combat missions. The exercise is conducted in a large, rural area, and 'enemy forces' and 'native guerrilla forces' are role-played by experienced SF cadre, airborne soldiers, and local civilians. During the 14-day exercise the SF teams experience levels of calorie and sleep deprivation similar to those encountered under high-intensity operational conditions.

Because the Robin Sage exercise is designed to mimic the SF operational environment, there is a deliberate attempt to introduce ambiguity and uncertainty into the exercise. Teams must frequently adapt to unexpected obstacles or unforeseen dilemmas. The teams frequently encounter problems for which there is unclear or incomplete information available to use in developing a solution. As the team leaders, the officers in this research were ultimately responsible for their team's ability to overcome these challenges and successfully execute its missions. The officer's ability to be flexible and adaptive under these conditions determines, in large part, the team's success in the Robin Sage exercise.

This is by no means an easy task since the team is continuously performing highly strenuous activities for extended periods of time with little sleep or rest while carrying rucksacks weighing in excess of 100 pounds. Added to the stress is the knowledge that SF cadre are constantly observing and evaluating the team's performance, and that sub-par performance in this exercise can result in an individual's dismissal from the Special Forces Qualification Course and, hence, not being selected for SF.

The two criteria in this research consisted of team member (i.e., peer) and SF cadre ratings of the officers' performance in the Robin Sage exercise. Ratings were made immediately after completion of the exercise. Team members rated the officers on their Physical Performance, Effort and Persistence, Social Interactions, Teamwork, Leadership Performance (i.e., planning, directing, coordinating, and supervising the actions of team members to achieve mission objectives), and Tactical Performance. An SF cadre member who had accompanied the team during the entire exercise rated the officer's performance on the following dimensions: Judgment/Decisiveness, Initiative/Effort, Responsibility/Trustworthiness, Physical Fitness, Technical/Tactical Proficiency, and Teamwork/Maturity.

The alpha reliability of the peer and cadre ratings scales as sets were .97 and .94, respectively, indicating a high degree of internal consistency among the scales. For this reason all of the peer rating scales were combined to form a single peer rating criterion, and the same was done for the cadre scales.

3. RESULTS

Descriptive statistics and internal consistency reliability coefficients (where applicable) are presented in Table 1. Reliability coefficients were over .60 for all but the Tolerance of Ambiguity scale.

In addition to the predictor scales described above, a 'Response Distortion' scale was included in the test battery to detect individuals who appear to be describing themselves as being better than they actually are. Previous research suggests that the validities of self-report temperament tests improve when subjects who distort their responses are removed from the analyses (White & Kilcullen, 1998). One of the officers in this research was identified as distorting his responses to the self-report predictor measures. This individual was eliminated from further analysis.

Table 1. Predictor descriptive statistics and reliabilities (n=88)

Predictor	Mean	s	α
Cognitive Aptitude			
1. Wonderlic	29.1	5.01	---
2. Assembling Objects	28.4	4.51	---
Conceptual Complexity			
3. MCPA	3.55	0.92	---
Big Five Personality			
4. Conscientiousness	4.08	0.51	.77
5. Emotional Stability	4.03	0.55	.80
6. Agreeableness	3.89	0.51	.79
7. Extroversion	3.75	0.60	.82
8. Openness	3.91	0.48	.79
Self-Efficacy			
9. General SE	5.92	0.88	.78
10. Leadership SE	3.99	0.50	.89
Rational Biodata			
11. Intellect. Openness	3.70	0.48	.78
12. Tol. of Ambiguity	3.61	0.52	.57
13. Achievement Orien.	4.00	0.37	.65
14. Fitness Motivation	3.87	0.46	.81

Table 2. Zero-order correlations between predictors and Robin Sage criteria (n=31 to 48)

Predictor	Peer Ratings	Cadre Ratings
Cognitive Aptitude		
1. Wonderlic	-.03	.02
2. Assembling Objects	.12	.20
Conceptual Complexity		
3. MCPA	.43**	-.10
Big Five Personality		
4. Conscientiousness	.12	.16
5. Emotional Stability	.27	.10
6. Agreeableness	.13	.12
7. Extroversion	.14	.19
8. Openness to Experience	.23	.19
Self-Efficacy		
9. General SE	.17	.25
10. Leadership SE	.40*	.28
Rational Biodata		
11. Intellect. Openness	.37*	.15
12. Tol. of Ambiguity	.34*	.07
13. Achievement Orien.	.39*	.36*
14. Fitness Motivation	.45**	.44**

Note.
* $p < .05$; ** $p < .01$

An examination of predictor inter-correlations revealed that, generally speaking, the highest correlations were obtained with other measures in the same category. For example, the correlation between the two cognitive aptitude tests ($r = .51$, $p < .01$) was greater than the correlations between these tests and other predictor measures. A similar pattern of results was obtained with the Big Five and rational biodata temperament measures (median $r = .27$, $p < .05$). Correlations were particularly high for scales measuring similar motivational constructs. The correlation between the Big Five Openness to Experience and the rational biodata Intellectual Openness was $r = .63$ ($p < .01$), and the correlation between Big Five Conscientiousness and the rational biodata Achievement Orientation was $r = .43$ ($p < .01$).

Zero-order correlations were computed to assess the criterion-related validities of the predictor measures (see Table 2). Measures of Cognitive Aptitude and 'Big Five' personality did not significantly predict either peer or cadre ratings of the officers' mission performance.

Indices of cognitive complexity and leadership self-efficacy successfully predicted peer ratings ($r = .43$, $p < .01$, and $r = .40$, $p < .05$, respectively). However, these measures did not significantly predict cadre ratings, although leadership self-efficacy approached significance ($r = .28$, $p < .06$).

Rational biodata scales were able to significantly predict both peer and cadre ratings. Peer ratings were predicted by Intellectual Openness ($r = .37$, $p < .05$), Tolerance of Ambiguity ($r = .34$, $p < .05$), Achievement Orientation ($r = .39$, $p < .05$), and Fitness Motivation ($r = .45$, $p < .01$). Cadre ratings were predicted by Achievement Orientation ($r = .36$, $p < .05$), and Fitness Motivation ($r = .44$, $p < .01$). As a whole, the rational biodata scales were the most consistent predictors of officer performance in the Robin Sage exercise.

4. DISCUSSION

Advancing technologies and new political realities suggest that the operational environment of Objective Force officers will become progressively more ambiguous, complex, and fast-paced. Although expert opinion can and should be used to identify the attributes necessary for Objective Force officers, it is a good idea to confirm these opinions with empirical data whenever possible.

Empirical research with Special Forces officers provides clues about the attributes necessary for Objective Force officers since SF officers often must operate in complex, uncertain, rapidly changing environments. The purpose of this research was to examine the validity of cognitive and temperament measures for predicting officer performance in a highly realistic and unstructured Special Forces field exercise.

It is important to keep in mind that the participants in this research were extensively prescreened with respect to cognitive aptitudes, physical fitness, and motivation/desire by the SF selection process. For example, an average score of 29 on the Wonderlic IQ test was obtained in this sample, which is substantially higher than the average U.S. population score of 21.

The restricted nature of this sample makes it more difficult to statistically establish the criterion-related validity of the predictor battery. Therefore, caution should be exercised when interpreting the results. Attributes that did not significantly predict officer performance herein (e.g., cognitive aptitude) could still play important roles when applied to samples with less range restriction. On the other hand, significant prediction under these conditions helps to illustrate some of the attributes necessary for officer success in complex, ambiguous, volatile operational environments, and some of the more effective techniques for measuring these attributes.

In this regard the most compelling finding in this research is that, even among elite soldiers who have been extensively prescreened, motivational differences as measured by paper-and-pencil rational biodata tests exist, and these differences translate into differences in officer performance in a high-intensity, complex, ill-defined operational environment. These results are consistent with previous research linking rational biodata measures to the performance of SF enlisted soldiers while on deployment (Kilcullen et al., 1999), further suggesting that these attributes help determine the success of soldiers serving in environments similar to what the Objective Force will encounter.

Research on predicting officer performance in Robin Sage is ongoing. Larger samples will be collected both to confirm the results of this research and also to permit more sophisticated multivariate data analysis techniques. The validity of other attributes will also be assessed. One direction for future research is to replicate these findings in similar settings with officers who are not serving in SF. Empirical findings such as these can improve officer selection and training systems for the Objective Force by identifying the right attributes and measuring them with greater precision.

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