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An Analysis of Proposed 97E10 Selection Characteristics

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13. ABSTRACT (Maximum 200 words)

   For this report, an analysis of proposed characteristics of Military Intelligence interrogator personnel and performance in interrogator training was conducted. This analysis is part of a broad-based initiative by the Department of Human Intelligence (HUMINT), U.S. Army Intelligence Center and Fort Huachuca (USAIC&FH), to improve interrogator performance and proficiency. The effort was designed to obtain measures on interrogator characteristics using marker tests, the Myers-Briggs Type Indicator (MBTI), the California Psychological Inventory (CPI), biographical data, and other pertinent personnel proficiency scores (e.g., ASVAB, DLPT), and relate these measures to several performance milestones in the interrogator training process. A total of 170 97E10 students participated. The overall analysis yielded several significant but low-order correlations between predictor measures and performance criteria, particularly with scale scores from the CPI and ASVAB. An important consideration was the need for more precise measures of interrogator performance vice academic scores. Further work is suggested using scenario-based data collections in one-on-one interrogation situations.

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AN ANALYSIS OF PROPOSED 97E10 SELECTION CHARACTERISTICS

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AN ANALYSIS OF PROPOSED 97E10 SELECTION CHARACTERISTICS

Introduction

According to a report by Knapp (1989), there was relatively high attrition from the 97E10 Military Intelligence (MI) Interrogation course at the US Army Intelligence Center & School (USAICS) during the time period 1986-1988. A study was conducted to determine those characteristics that would allow screening (i.e., selection and training strategies) for those individuals who might prove to be better suited for that particular Military Occupational Specialty (MOS) and thereby lower attrition. This was one of several initiatives by USAICS, Department of Human Intelligence (DHI), to better understand interrogator performance and improve proficiency.

Through a sophisticated technique of characteristic derivation, which included subject matter expert interviews and statistical sortings and rankings, Knapp (1989) derived eight factors or characteristics that were considered to contribute to successful interrogator performance. These included skill (e.g., good foreign language skills), psychological (e.g., common sense, flexible), and personality (e.g., communicates easily with people, picks up on subtle cues) components (a full listing is presented in Table 1).

Given this preliminary step of defining these relevant characteristics, the next phase of the research was to consider whether these factors could be useful in the selection and training process. To accomplish this, various instruments or marker tests were selected (Knapp, 1991) to measure the eight characteristics (Table 1). The 97E10 students' scores on these measures would then be correlated with performance measures. To the extent that the measures of the eight characteristics were significantly correlated with performance measures, they would be determined to be worthy of further consideration in personnel selection and training decisions.

Method

The overall strategy of this study was straightforward. It included obtaining measures on the eight characteristics using the marker tests and several performance measures and then determining any possible predictor/criterion relationships.

Subjects

The subjects in this study were 170 incoming students in MI 97E10 training at Ft. Huachuca. These 170 students contributed to the formation of the primary data set. Out of this original set

of 170 students, there were complete data on 151. For the sake of completeness in reporting, the results presented below will indicate whether the 170 or 151 (or some other number of) subjects contributed to a given analysis. Finally, there were an additional 52 students from whom only measures of "interpersonal perception" (Table 1, #8), and performance, were taken.

Materials

The predictor measures (marker tests) were chosen from standardized instruments that included:

Myers-Briggs Indicator (MBTI) (Myers & McCaulley, 1985). This instrument assesses individuals' <u>types</u>, and is based on the type theory of Jung (1921), the essence of which is that individuals differ in the way they <u>prefer</u> to use perception and judgment. Thus, this instrument assesses one's preferences to act (behave) in particular ways. Some simple bi-polar descriptors of typical preferences would include extroversion/introversion, sensing/intuition, thinking/feeling, and judgment/perception. Many researchers have used this instrument to determine the most appropriate type of individual for a particular occupation or profession.

California Psychological Inventory (CPI). This instrument was developed to "assess the kind of everyday variables that ordinary people use to understand, classify, and predict their own behavior and that of others," and has the objectives to "predict what people will say and do in specified contexts...and to identify individuals who will be evaluated and described in particular and interpersonally significant ways" (Gough, 1987). Thus, individuals have assigned scores on such dimensions as dominance, social presence, flexibility, and femininity/masculinity, among many others.

Armed Forces Classification Test (AFCT). This instrument assesses military personnel along several dimensions which are used for MOS assignment, among other things. This instrument is given to every individual entering military service. The AFCT yields 10 scores, one for each of 10 areas of military occupation. These include: CO, combat; FA, field artillery: EL, electronics repair; OF, operators and food services; SC, surveillance and communications; MM, mechanical maintenance; GM, general maintenance; CL, clerical; ST, skilled technical, and GT, general technical. Each of these subscales is derived from composites of AFCT subtest performance, that include such things as general science, arithmetic reasoning, coding speed, mechanical comprehension, and so on. There is also a Verbal Score (VE) which is a composite of word knowledge and paragraph comprehension.

Interpersonal Perception Test (IPT). This instrument, developed
by Costanzo and Archer (1988) was selected (Marshall, 1990) to
assess individuals' ability to pick up on subtle cues of nonverbal
communication. It consists of 30, short, video segments about
which one must make a conclusion as to particular peoples' roles.
The higher one's score on the IPT, the better one should be at
picking up subtle cues of nonverbal communication.

Defense Language Aptitude Battery (DLAB) and Defense Language
Proficiency Test (DLPT III). The DLAB assesses one's general
potential for foreign language acquisition and potential skill.
The DLPT III assesses one's proficiency in listening, speaking,
and reading a particular foreign language, presumably after
training.

Finally, some information was gathered in the form of
biographical information (e.g., gender, years in service,
knowledge of US and USSR military, etc.).

The particular scales from these instruments that were
determined (Knapp, 1989) to relate to the derived characteristics
of successful interrogator performance are shown in Table 1.

Table 1

Hypothesized Predictor Variables for High-Level Interrogator
Performance

Characteristic	Test Instrument
1. Foreign language skill	DLAB, DLPT III
2. Common sense, "street wise"	MBTI - E, S, F, P
	CPI - In, Ai, Sp
3. Well-rounded background; intellectual knowledge	CPI - Ie; AFCT - GT
4. Flexible, adaptable to any situation	CPI - Fx, To
5. Knows military tactics: US/USSR	Biodata (self report)
6. Keeps control of situation	CPI - Sc, Re, Ai, To
7. Communicates easily with people	MBTI - E, S, F, P
	CPI - Sp, Sy
8. Picks up on subtle, nonverbal cues	CPI - Em, Py; IPT

MBTI Scales: E = Extroversion
             S = Sensing
             F = Feeling
             P = Perception

CPI Scales:
In	= Independence	Sc	= Self-Control
Ai	= Achievement via independence	Re	= Responsibility
Sp	= Social Presence	Sy	= Sociability
Ie	= Intellectual Efficiency	Em	= Empathy
Fx	= Flexibility	Py	= Psychological-
To	= Tolerance		Mindedness

Besides the measures of the derived characteristics, performance (criterion) variables were selected. Since the individuals were students in a classroom situation, the variables that were most available and quantifiable were measures of classroom performance. Initially, data were collected on several such variables. These and the subjects' mean scores on them are defined in Table 2.

Table 2

Performance Variables

		Mean	Max	Standard Deviation
1.	Map reading	24.68	30	2.35
2.	General subject matter	36.92	40	3.20
3.	Conduct of interrogation exercise (INTER-PE)	34.02	39	4.48
4.	Reporting of interrogation results (TACT-PE)	16.19	20	4.39
5.	Course grade	88.50	100	15.88
6.	Instructor rating (0-7)#	4.85	7	1.47

Additional Data

7.	Percent who passed the course	97.40*
8.	Percent who were dropped	2.00
9.	Percent who were recycled	15.90**

#The "instructor rating" scale was developed by ARI to derive a measure of interrogator potential.
*Indicates percent of those who eventually (includes recycled students) passed the course.
**Indicates percent of those who were recycled at least once. Nearly all of those recycled went on to complete the course successfully.

For the purpose of the remaining analyses, a decision was made to limit the number of criterion variables for conceptual and statistical reasons. The conceptual reasons had to do with the intent of the original Knapp (1989) study, the basis for this phase of the research. Knapp (1989) was concerned with defining a manageable set of characteristics of high level interrogator performance. Several of the variables on which data were collected in the current analysis were concerned with performance in the classroom (e.g., course grades and instructor ratings of students). In spite of being somewhat pedagogically compelling, such measures may not necessarily relate to good actual interrogator performance. There is also the statistical dependence that exists between such observations as course grades and instructor ratings. In trying to assess interrogator performance by the "instructor rating," an instructor might reasonably be expected to use, in part, the grades that the students had achieved. Therefore the two measures might be significantly correlated [in fact, this was so, r (149) = .49, p < .001)]. (Appendix A shows the intercorrelations among several of the dependent variables.)

Consequently, two measures that approached indices of actual performance were chosen for principal consideration. These were the two measures on the tactical simulation exercises, namely, "INTER-PE" and "TACT-PE." For the record, both the INTER-PE and the TACT-PE were significantly correlated with "grade" in the course, r's (149) = .50, and .71, respectively. They were also significantly correlated with each other, r (149) = .29, p < .01. Despite this significant inter-relatedness, this report will present data on each of these measures, because they represent different aspects of the interrogation procedure. What this report refers to as the "INTER-PE" is actually the Methodology Performance Test (HEWT3T) given to 97E10 students. It is an examination of general "order of battle" information, and has no special priority information as its objective. The student is graded on how well the interrogation is conducted. This test has the following sub-sections:

Planning and Preparation. This section examines the student's collection of preliminary source information and the plan for the interrogation.

Approach. This section concerns the student's relationship (rapport) with the source.

Questioning. This section concerns specific questioning procedures.

Map Tracking. This section examines the student's preparation of source travel and location information.

What this report refers to as the "TACT-PE" is actually the Tactical Interrogation Performance Test (HEWT4T). This test is similar to the "INTER-PE" with the exception that the purpose of the interrogation is to obtain specific information on prioritized

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objectives. The exercise is conducted under two different scenarios, and performance is graded in terms of how many of the desired information objectives are obtained. The test follows the INTER-PE by a week or more.

Results

The results will be presented according to the following scheme. First, there will be a description of the subject sample as determined by the self-report questions. Second, the analysis of proposed correlations between the predictor variables (the proposed measures of the eight characteristics) and the two performance variables will be presented. Third will be a presentation of significant unanticipated findings, where correlations between other variables derived from the predictor instruments and the performance variables will be presented. For example, the CPI and the AFCT yielded scores on factors that were not a priori hypothesized to be relevant to the eight derived characteristics, but which, nonetheless, were significan_ly related to the performance variables.

Description of Subject Sample

To provide a summary description of the student, it should be noted that 74% of the sample were male; 72% were over 21 years old; 40%, 35%, and 25% had no, 1-3 years, and more than 3 years prior military experience; 67% report knowledge of US military organizations and 44% reported the same for USSR military, and 78% reported knowing their MOS requirements.

Correlations of Hypothesized (a priori) Relationships

Table 3 shows the product-moment correlations obtained between the predictor variables and INTER-PE and TACT-PE (as defined in Table 2). The number of subjects from which the correlations were derived is indicated, and * indicates significance at $p < .05$, ** at $p < .01$, and *** at $p < .001$.

Additional Myers-Briggs Analyses

The Myers-Briggs Type Indicator test defines 16 distinct types. The instrument produces eight raw scores: extrovert, introvert, sensing, intuition, thinking, feeling, judgment, and perception. From these eight scores, individuals are characterized as having certain preferences and thus being of a certain type. Extroverts are oriented towards the outer world, while introverts are oriented towards the inner world. The sensing individual relies on sensory data and facts to operate in the world, while the intuition individual relies more on intuitions and possibilities. The thinking person relies more on logical relationships, while the feeling person decides issues more on the basis of personal or social values. The judgment person has a preference for using either thinking or feeling processes, while a perception person has a preference for using sensing or intuition processes.

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Table 3

Predictive Potential of Marker Tests to Interrogator Performance

PREDICTOR VARIABLES		INTER-PE	TACT-PE	N SIZE
Foreign Language Skill	DLAB#	.15	.10	130
	DLPT-L	.27***	.13	
	DLPT-R	.12	.03	
	DLPT-S	.06	-.01	
Common Sense	MBTI-E	.07	.17	151
	MBTI-S	-.01	-.08	
	MBTI-F	-.02	.01	
	MBTI-P	-.01	.01	
	CPI – In	.16	.16	
	CPI – Sp	.10	.24**	
	CPI – Ai	.05	.04	
Well-Rounded Background	CPI – Ie	.11	.01	170
	AFCT – GT#	.18*	.23*	115
Flexible, Adaptable	CPI – Fx	-.06	.09	151
	CPI – To	.06	.02	
Knows Military Tactics	KNOWUS	-.07	-.05	151
	KNOWUSSR	-.04	-.01	
Keeps Control of Situation	CPI – Sc	-.07	-.14	151
	CPI – Re	-.00	-.14	
	CPI – Ai	.05	.04	
	CPI – To	.06	.02	
Communicates Easily	MBTI-E	.07	.17	151
	MBTI-S	-.01	-.08	
	MBTI-F	-.02	.01	
	MBTI-P	-.01	.12	
	CPI – Sp	.10	.24**	
	CPI – Sy	.09	.14	
Picks up on Nonverbal Behaviors	CPI – Em	-.03	.12	151
	CPI – Py	.06	-.07	
	IPT#	-.04	-.07	52
AFCT Scores	GT	.18*	.23*	115

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As originally considered in this study, individuals' performance was correlated with separate "raw" scores, one for each considered dimension. However, it might be preferable to consider individuals in terms of the degree to which they may be extroverted or introverted, sensing or intuitive, etc. The set of 16 possible types may be divided into those characterized as extroverted or introverted, thinking or feeling, and so on. The mean performance scores of these major "opposite" types are given in Table 4. None of the mean differences between the presented types of individuals were significant (t-tests, all p's > .10).

Table 4

Mean Performance of Individuals of Major MBTI Types

| COMPARISON | MEAN PERFORMANCE MEASURES | |
	INTER-PE	TACT-PE
Introverts (n=63)	35.05	15.51
Extroverts (n=88)	34.00	16.68
Sensing (n=60)	34.05	15.82
Intuitive (n=91)	34.00	16.44
Thinking (n=101)	34.38	16.49
Feeling (n=50)	33.30	15.60
Judgment (n=69)	34.62	15.64
Perception (n=82)	33.51	16.66

Additional CPI Analyses

The CPI instrument yields a classification of individuals by four psychological types. The characteristics of these possible types include

Alpha: enterprising, dependable, outgoing
Beta: reserved, responsible, moderate
Gamma: adventurous, restless, pleasure-seeking
Delta: withdrawn, private, disaffected

Figure 1 shows the percentage distribution of the four psychological types by student gender. The male students can be seen to be bi-modally distributed around alpha and gamma, while the female students are largely gamma (64%). Figures 2 and 3 show the mean performance scores on INTER-PE and TACT-PE of the four psychological types for 97E10 males and females, respectively. It should be noted that the data for the males are more reliable given their substantially greater number (n=112 vs n=39). The data in Figure 2 shows uniform INTER-PE performance for the four
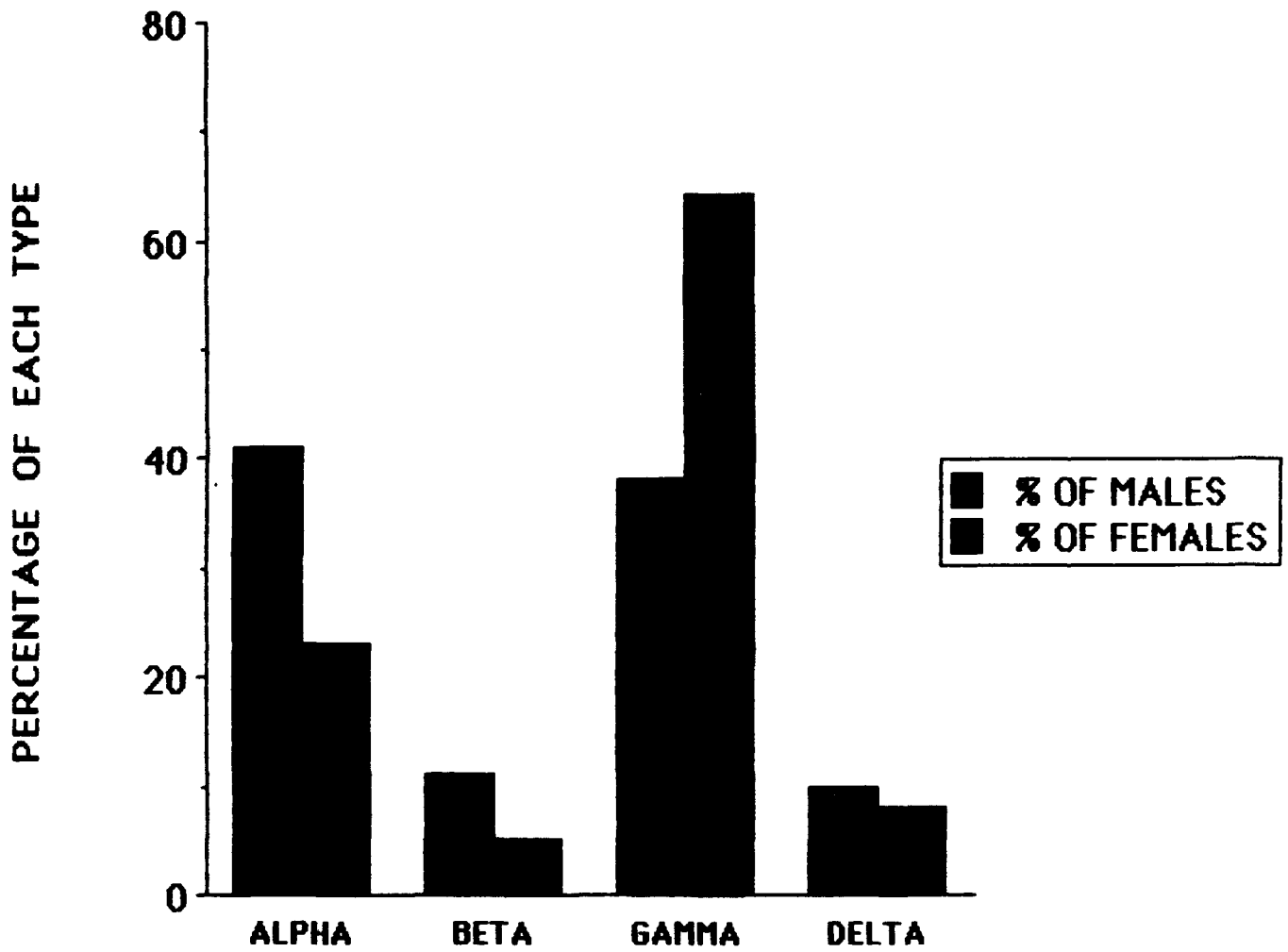
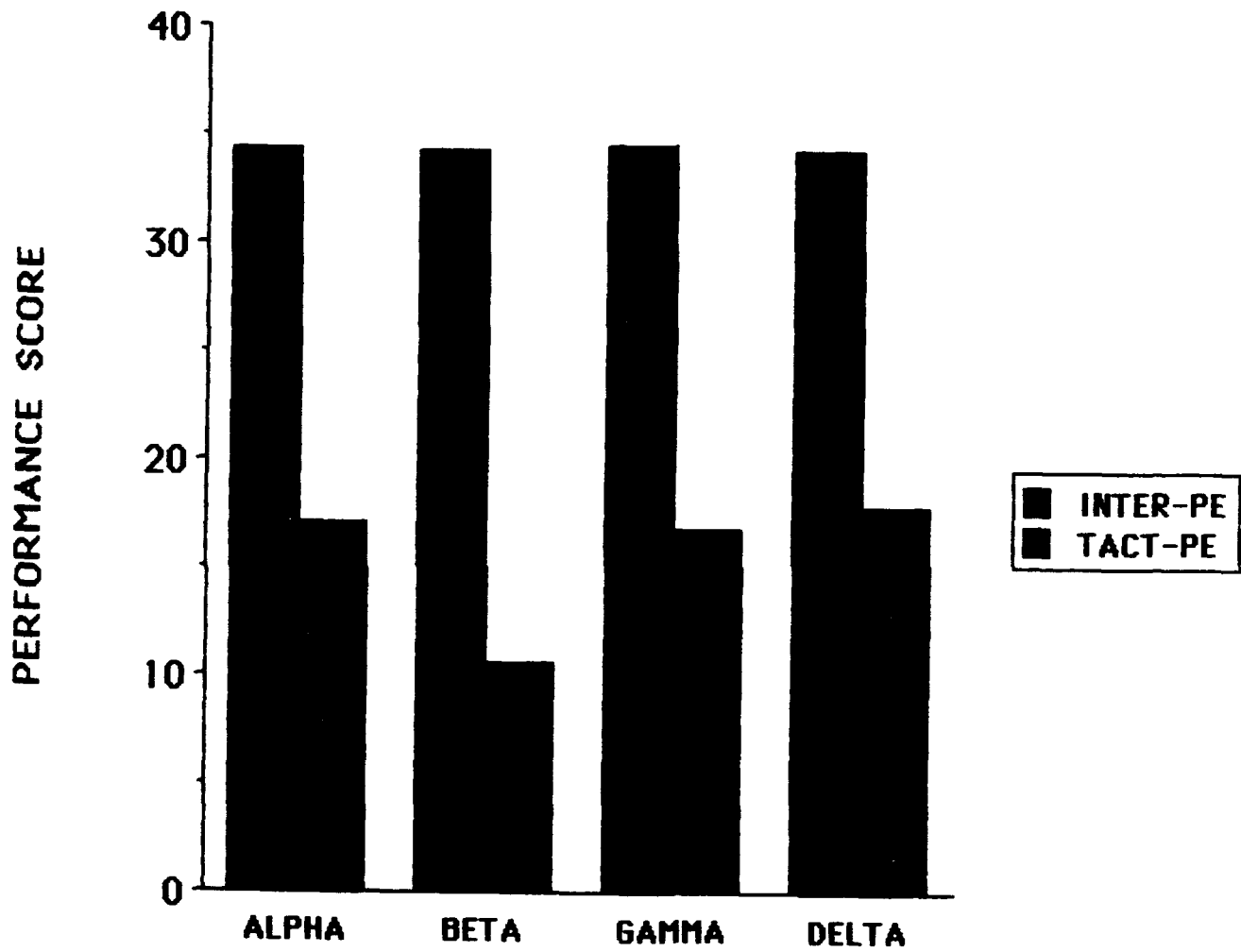8

Figure 1. Percentage of each CPI type by gender.

Figure 2.   Performance as a function of CPI types (males, N=112).
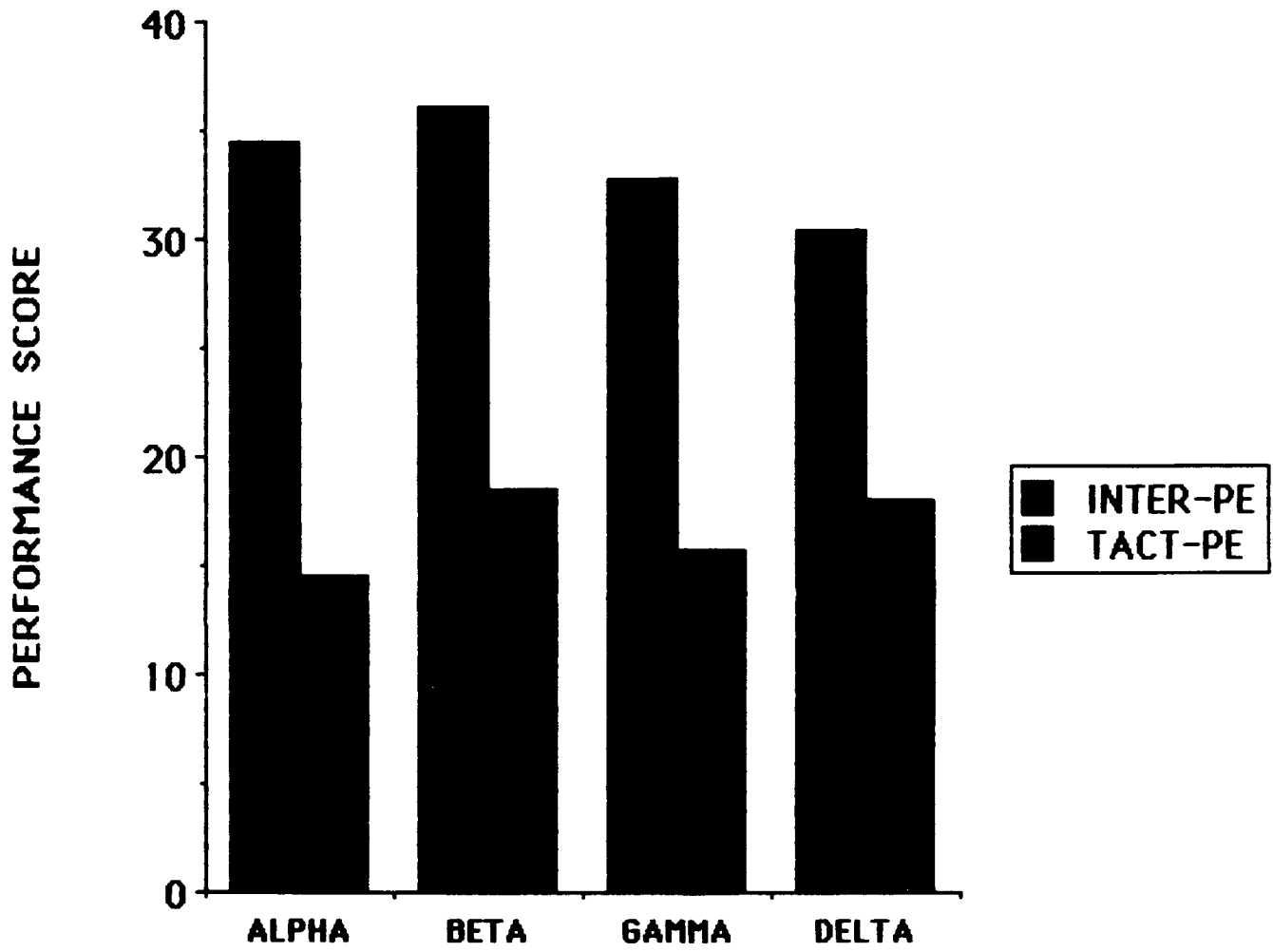
Figure 3. Performance as a function of CPI types (females, N=39).

male psychological types, and distinctly inferior performance on TACT-PE for the beta types (individual $\underline{t}$-test comparison, all $\underline{p}$'s < .001). To be sure, male betas constitute only 11% of the total male sample, but it is clear that they perform significantly worse on the tactical exercise than the other types. Because of their relatively low numbers, comparable statistical comparisons were not made on the female students. Finally, Figure 4 shows the percentage of each psychological type that had to be recycled. It is clear that male betas are more likely to be recycled than other males. Conclusions about the female students require much more caution. Of course, recycling is in part a function of class performance, so the male recycling data may just reflect the already stated poor examination performance for the betas.

Each of the tests, particularly the CPI and the AFCT, yield scores on quite a few scales. There were several significant correlations between some of these other scale scores and the two performance measures. They are presented in Table 5.

Table 5

Unanticipated Correlations with Performance Variables

MEASURE	INTER-PE	TACT-PE	N SIZE
CPI - Sp Scale		.24**	151
- F/M Scale (femininity/masculinity)	-.21**		
AFCT-CO		.26**	115
-FA		.21*	
-EL		.21*	
-OF		.29**	
-SC		.29**	
-MM		.24**	
-GM		.23*	
-CL		.21*	
-ST		.24*	

*Indicates $\underline{p}$ < .05
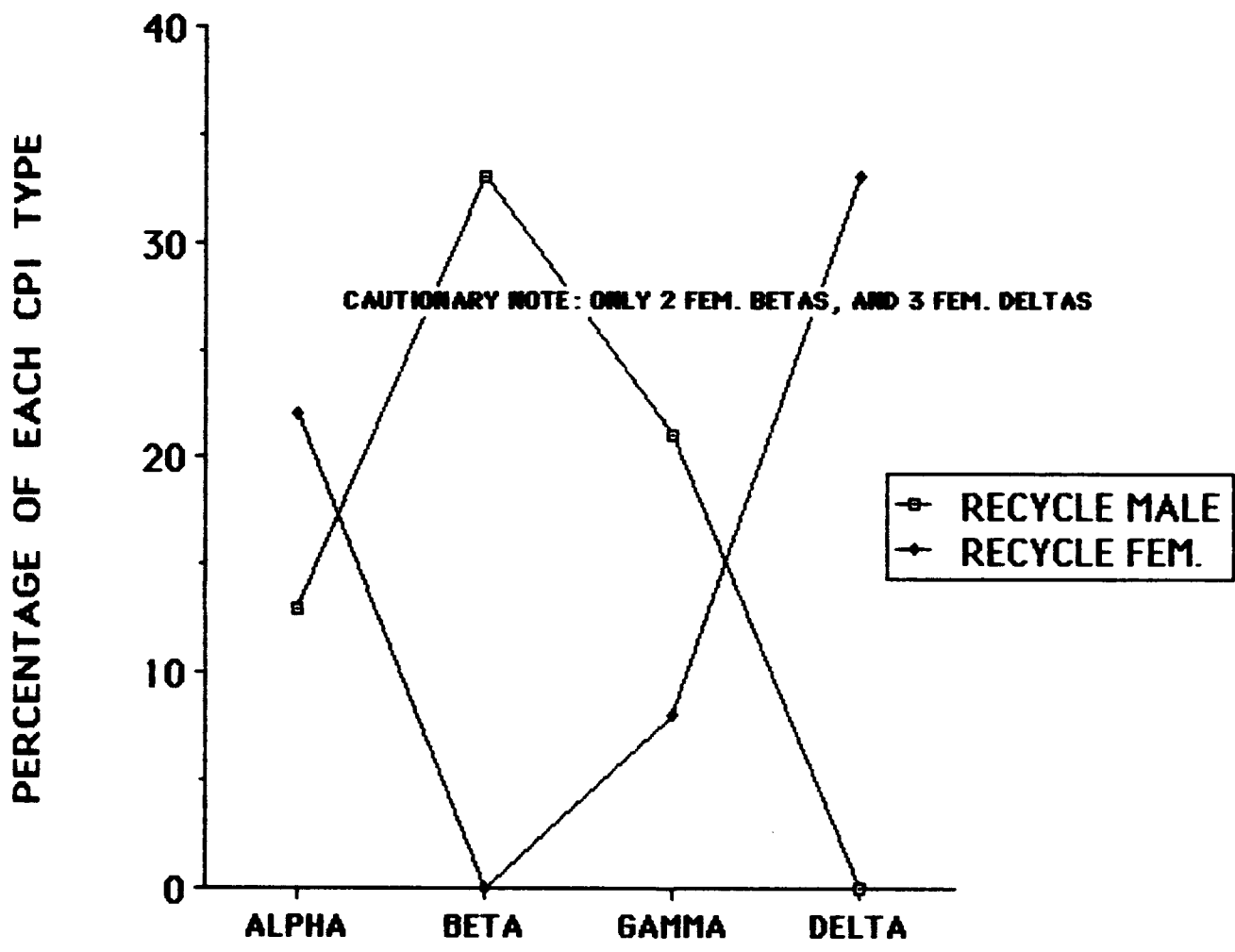**Indicates $\underline{p}$ < .01

Figure 4. Percentage of each CPI type recycled by gender.

Discussion

To review, the data collected for this report were an attempt to evaluate the screening potential of eight characteristics that a previous study (Knapp, 1989) had determined to contribute to interrogator success. Measures of these eight characteristics were correlated with performance scores of 97E10 students in an attempt to validate the hypothesized relationships.

For the most part, the results of the analyses reported here do not show substantial or strong relationships between the chosen measures of the eight characteristics and performance on the two most salient performance indices. Moreover, the several a priori relationships that were statistically substantiated were of a low order of magnitude (i.e., with r^2's, amount of variance accounted for, in the 4-9% range).

Whenever hypotheses are unsupported by data analysis, there are always a number of possible reasons. These include, but are not limited to, incorrect original hypotheses, inadequate measuring techniques, or insufficient statistical power to detect relationships. The latter would seem to be ruled out in the present case, since the 151 subjects on whom most analyses were based is a substantial number. In several instances, fairly low order significant correlations (e.g., r's of around .20) were able to be detected.

In some instances, there may be some conceptual measurement dilemmas to be considered. For example, Merenda (1991) has commented that the MBTI has as its cornerstone the individual's preference for a particular behavioral style. Merenda goes on to note "whether or not the person is able to display those preferences and resort to them when it is important to do so is another matter" (p. 181). Put even more simply, chosen preference may not predict actual behavior.

The Knapp (1989) study, from which came the impetus to assess the relationships in the present study, was concerned with predictors of high level interrogator performance, simply, those characteristics that make one an outstanding interrogator. The question here is whether the classroom situation, with novice or "green" students, is the best place to test the projected relationships. The present data were collected under the assumption that these eight characteristics were analogous to personality traits, and hence, measurable by standardized instruments. The fact may be, however, that certain of the characteristics are developed and matured over time and experience. If that is the case, then a better test of the characteristics predictive ability would be with senior, experienced personnel. The use of novice interrogators may not have provided the optimum empirical arena for validating the relationships. But again, one may run into problems with an

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expert sample. For example, in an expert sample the homogeneity of that sample might be so great as to preclude sufficient variance upon which to establish statistical correlation.

There are also problems associated with the performance ends of the relationship equations. The performance measures that were principally considered in this report (INTER-PE and TACT-PE) were obtained in a classroom situation. Students had some time to prepare for the exercises, and, in fact, went over similar exercises in laboratory situations prior to the actual tests. These test situations only approximated true field conditions (one cannot measure how much for, as an example, in addition to the obvious reasons, all exercises were conducted in English). It may be the case that under true field conditions, with their associated pressures and restrictions, the potential for variability on these characteristics to influence performance might emerge. The relative controlled calm of the classroom may not have pressed these characteristics into play.

Finally, there is the consideration that the eight high-level characteristics generated in the Knapp (1989) study are not related to, or are not sufficiently refined or comprehensive to relate directly to performance. Given the limitations of performance measures currently available, there is currently no way to assess this.

In spite of the rather modest relationships obtained overall, the CPI personality findings seem to be clear with respect to the male beta students. Though they constituted a small part of the overall male sample, they performed more poorly on the TACT-PE and, consequently, were more likely to be recycled. The CPI data are interesting in quite a different way, in that they show different psychological compositions between male and female samples. This finding may prove useful in other research contexts.

It was shown that the AFCT, already used routinely, was a modest predictor of 97E10 classroom performance for this sample. Correlations between the GT score (currently used as the selection scale for 97E10 classification) were of similar order of magnitude (r = .20 range) as any other significant correlations. Interestingly, only the GT score was significantly correlated with the INTER-PE, while all the occupation classification scores were significantly correlated (and in some instances to a greater extent) with the TACT-PE. Anomalously, the former finding substantiates the continued use of the AFCT, while the latter finding adds some confusion by allowing that the higher one's score on the "OF" (operators and food services) scale, the higher one's score on TACT-PE.

There are several conclusions or recommendations that may be offered at this time:

■ The GT score of the AFCT should continue to be used in the selection for the 97E10 MOS.

■ Continued investigation of the characteristics of successful interrogator performance and their relationships with performance scores should be conducted only if performance variables more similar to actual field conditions could be obtained. Such continued research is not immediately suggested by the present results, but would be a function of MI needs and priorities.

■ Given the nature of the interrogation task, the importance of one's sensitivity to nonverbal cues is a valuable area for further exploration, particularly if it can be related to performance in actual field situations. Continued investigation of this would be desirable if the conditions of the above para are met.

■ The CPI may prove to be a useful instrument, but the limited number of female students in the present sample precludes a definitive statement at this time.

Summary

In a study conducted by Knapp (1989), several characteristics of successful interrogator (MOS 97E10) performance were specified. These characteristics were derived from subject matter experts, and included skill, psychological, and attitudinal factors. For the present study, data were collected on evaluation instruments that were considered to reflect students' positioning on these characteristics, and on several performance measures taken during their 97E10 training. A total of 170 97E10 students participated in the data gathering. The overall strategy of the study was to determine the extent to which correlations existed between the predictor, characteristic variables and the several performance variables. In general, most of the specified predictor variables were found to contribute little to the performance variables, and in those instances where correlations were statistically significant, they accounted for very little variance. In fact, the AFCT (ASVAB), already routinely used, yielded significant correlations with performance of the same order of magnitude as any of the other characteristic measures. The failure to find clear support for the hypotheses of the earlier study (Knapp, 1989) was considered in terms of the possible inherent inadequacy of the predictors to reflect actual behavior, and of the limited fidelity of the performance variables to actual field situations. The continuation of this line of research should be driven by the

degree of practical need for solutions to existing problems, and such research would have to involve a reconsideration of potential measures of the eight characteristics and criterion/performance variables that significantly approach actual field conditions.

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Intercorrelations Among Several of the Performance Variables
(N=151)

	GS	INTER-PE	TACT-PE	PAS-FAIL	DROP	RECYCLE	GRADE	INS-RAT
MR	.06	.11	.31**	.43**	-.51**	.23*	.46**	.32**
GS		.28**	.20*	.09	.03	.18	.26**	.33**
INTER-PE			.29**	.37**	-.06	.34	.50	.30
TACT-PE				.61**	-.53**	.33**	.71**	.44**
PAS-FAIL					-.86**	.38**	.92**	.37**
DROP						-.33**	-.79**	-.31**
RECYCLE							.45**	.31**
GRADE								.49**

* = SIGNIFICANT AT p < .01
** = SIGNIFICANT AT p < .001

To clarify, MR = Map Reading, GS = General Subject Matter, INTER-PE = Methodology Performance Test, TACT-PE = Tactical Interrogation Performance Tests, and INS-RAT = Instructor Rating.

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