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THE RELATIONSHIP OF THE EDWARDS PERSONAL PREFERENCE SCHEDULE TO SUCCESS IN NAVAL FLIGHT TRAINING

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U. S. NAVAL SCHOOL OF AVIATION MEDICINE
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SUMMARY PAGE

THE PROBLEM

The Edwards Personal Preference Schedule, a forced-choice personality "need" inventory, was evaluated as a predictor of success in naval flight training.

FINDINGS

The EPPS failed to discriminate between student aviators who completed training successfully and those who dropped voluntarily or failed due to poor performance. The schedule showed little promise as a predictive instrument for flight training.

INTRODUCTION

The Pensacola Student Prediction System utilizes a number of variables to predict the success or failure in flight training of student naval aviators. With the exception of age, education, and the Biographical Inventory, all predictor variables are either classroom performance measures or indices of ability and aptitude. While it has long been hypothesized that at least part of the variance of success or failure in flight training can be explained by differences among students in temperament or personality characteristics, past efforts to relate paper-and-pencil personality inventories to success in flight training have generally been unproductive (2-4). New or untried instruments, however, might have predictive utility, and the steadily increasing cost to the Navy of a student who fails to complete training creates a need for the constant evaluation of such inventories for possible inclusion in the prediction system.

The purpose of this investigation was to determine if the Edwards Personal Preference Schedule (EPPS) (1) can be used to differentiate among the following groups: (a) students who successfully complete flight training (Pass), (b) students who drop on their own request (DOR), and (c) students who are dropped due to flight failure (FF).

The EPPS is a self-descriptive forced-choice personality inventory which yields ipsative measures of 15 personality "needs," and is designed to minimize a subject's tendency to make "socially desirable" responses. The scales of the EPPS are described briefly below.

1. Achievement (Ach): To do one's best, to be successful, to accomplish tasks requiring skill and effort.
2. Deference (Def): To get suggestions from others, to find out what others think, to follow instructions and do what is expected.

3. Order (Ord): To have written work neat and organized, to make plans before starting on a difficult task, to have things organized.

4. Exhibition (Exh): To say witty and clever things, to tell amusing jokes and stories, to talk about personal adventures and experiences.

5. Autonomy (Aut): To be able to come and go as desired, to say what one thinks about things, to be independent of others in making decisions.

6. Affiliation (Aff): To be loyal to friends, to participate in friendly groups, to do things for friends, to form new friendships.

7. Intraception (Int): To analyze one's motives and feelings, to observe others, to understand how others feel about problems, to analyze the behavior of others.

8. Succorance (Suc): To have others provide help when in trouble, to seek encouragement from others, to have others be sympathetic and understanding about personal problems.

9. Dominance (Dom): To argue for one's point of view, to be a leader in groups to which one belongs, to be regarded by others as a leader.

10. Abasement (Aba): To feel guilty when one does something wrong, to accept blame when things do not go right, to feel the need for punishment for wrong doing.

11. Nurturance (Nur): To help friends when they are in trouble, to assist others less fortunate, to treat others with kindness and sympathy.

12. Change (Chg): To do new and different things, to travel, to meet new people.

13. Endurance (End): To keep at a job until it is finished, to complete any job undertaken, to work hard at a task.

14. Heterosexuality (Het): To go out with members of the opposite sex, to engage in social activities with the opposite sex, to be in love with someone of the opposite sex.

15. Aggression (Agg): To attack contrary points of view, to criticize others publicly, to blame others when things go wrong.

PROCEDURE

The EPPS was administered to 147 Navy and Marine cadets undergoing indoctrination at the U.S. Naval School, Pre-Flight. After approximately eighteen months, the final outcome of flight training was determined for each cadet. Nineteen of the original sample left the program in ways other than Pass, DOR, or FF; due to the lack of homogeneity within this group they were omitted from the sample. Of the 128 cadets remaining, 83 completed flight training successfully, 28 were DOR's and 17 were FF's. For these groups, means, standard deviations, and intercorrelations for the 15 scales were computed, and means were converted into percentile scores based on norms for college males. Correlations were obtained between each of the scales and the following criterion dichotomies: (a) Pass-Fail (successful students versus a combined group of DOR's and FF's), (b) Pass-DOR, and (c) Pass-FF.

Table I

Means, Standard Deviations, and Percentile Equivalents* of Means

	Pass			DOR			FF			Fail		
	$\bar{X}$	SD	Centile	$\bar{X}$	SD	Centile	$\bar{X}$	SD	Centile	$\bar{X}$	SD	Centile
Achievement	16.7	4.4	64	17.3	4.4	68	17.2	4.6	68	17.2	4.5	68
Deference	12.5	3.1	68	12.3	3.8	66	12.8	3.2	71	12.5	4.5	68
Order	11.9	4.0	70	11.6	4.3	68	10.0	4.4	54	11.0	4.4	63
Exhibition	14.3	3.4	53	14.4	3.3	54	15.1	4.0	63	14.7	3.6	58
Autonomy	11.7	4.4	32	10.2	4.3	23	11.3	3.7	30	10.6	4.1	24
Affiliation	12.2	4.3	30	13.5	5.2	41	11.6	4.0	25	12.8	4.9	34
Intraception	15.4	4.5	47	17.4	5.0	60	15.6	3.7	49	16.7	4.7	55
Succorance	7.7	3.9	32	6.3	2.7	22	7.5	3.4	31	6.7	3.1	25
Dominance	19.9	3.6	62	18.6	4.2	59	18.1	3.4	55	18.4	3.9	58
Abasement	12.1	4.0	54	11.9	5.2	52	14.5	4.6	71	12.9	5.1	60
Nurturance	11.0	4.2	31	11.1	5.2	32	10.8	3.7	30	11.0	4.7	31
Change	18.2	3.8	72	17.7	2.9	69	16.2	4.4	58	17.1	3.6	65
Endurance	16.6	4.7	77	18.1	3.4	85	15.5	5.0	72	17.1	4.3	80
Heterosexuality	17.0	5.0	45	16.0	5.6	39	18.1	4.6	54	16.8	5.3	43
Aggression	12.3	4.4	50	11.1	4.0	41	13.5	4.0	61	12.0	4.2	47

*Percentile equivalents for noninteger means obtained by linear interpolation between points in the table of norms for college males.

RESULTS AND DISCUSSION

Table I gives scale means, standard deviations, and percentile equivalents for each of the four groups, Pass, DOR, FF, and Fail (DOR and FF). No regular patterns are readily apparent. In regard to the scale means, only two significant differences were found: (a) between Pass and Fail on the Dominance scale, and (b) between Pass and FF on the Abasement scale. Since there are 45 possible comparisons, two differences significant at the .05 level are approximately what would be expected by chance, and it would be difficult to attach any strong interpretation to such a result.

The intercorrelation matrix of the EPPS scales was essentially the same as the matrix reported by Waters (5) on a similar population, and is not reported here. The correlations in Table II between the scales and the three criterion dichotomies support the finding of little difference between groups on mean scale scores. The plotted percentiles for Pass and Fail in Figure 1 also indicate a remarkable degree of similarity between the "need profiles" of the two groups.

Only two of the correlations in Table II reach the .05 level of significance, although a number of others are significant at better than the .10 level. This result is, of course, identical to the findings of significance in Table I, since a significant correlation between a dichotomy and a continuous variable indicates a significant difference between the continuous variable means of the two groups of the dichotomy.

Findings in general indicate little relationship between success or failure in flight training and needs as measured by the EPPS. Undoubtedly some of the lack of relationship can be attributed to the relatively crude nature of the dichotomous criterion, but several factors imply that a closer examination of the validity of some of the need scales is desirable. For example, the mean score on Endurance, supposedly a measure of

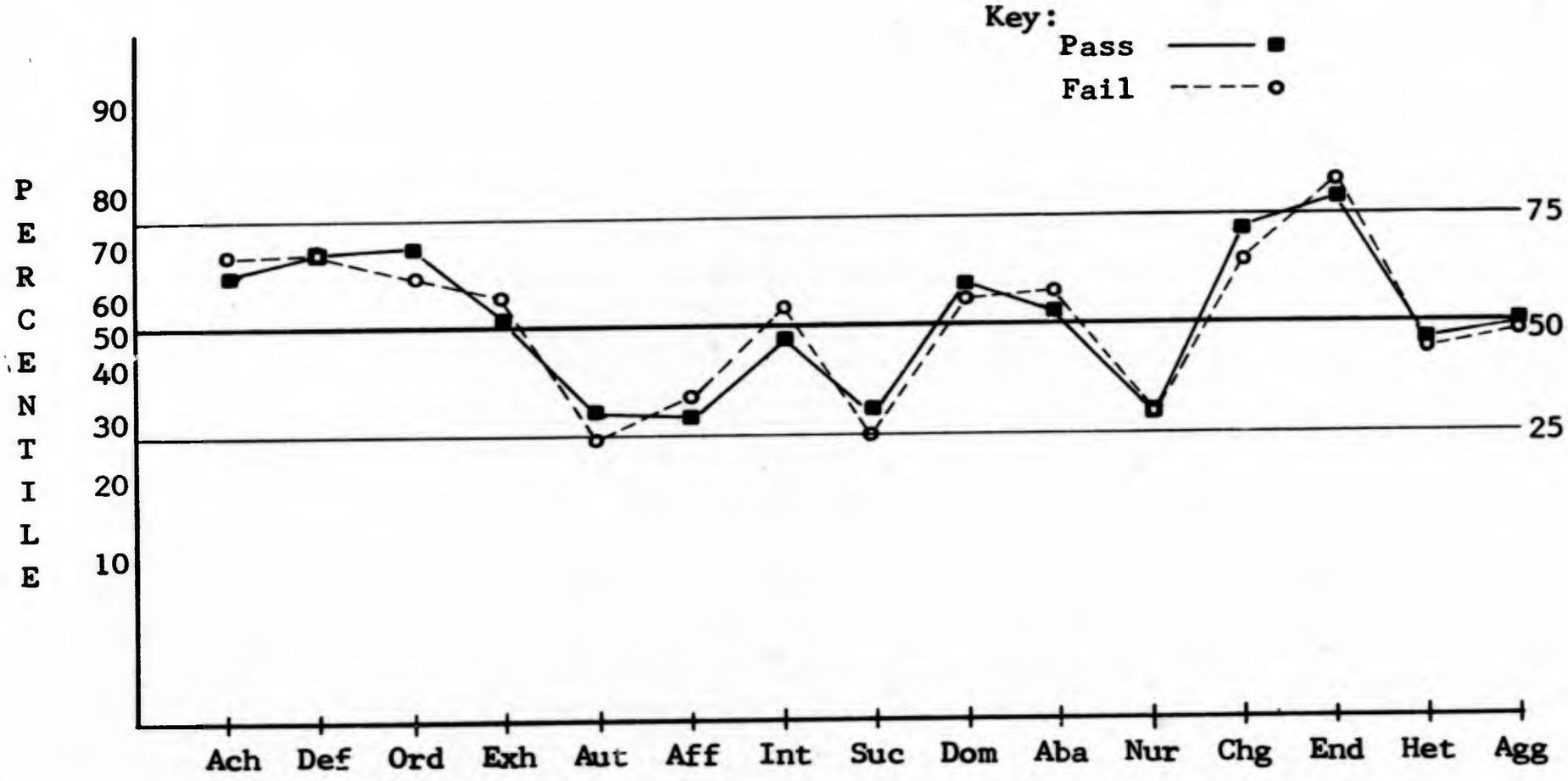

Figure 1

EPPS Scale Profiles for Pass and Fail Groups

Table II

Correlations of EPPS Scales with Criterion Dichotomies

	Pass/DOR (N=111)	Pass/FF (N=100)	Pass/Fail (N=128)
Achievement	-.054	-.040	-.056
Deference	.026	-.041	-.001
Order	.027	.173	.100
Exhibition	-.020	-.084	-.054
Autonomy	.146	.031	.117
Affiliation	-.120	.050	-.061
Intraception	-.176	-.017	-.132
Succorance	.178	.022	.133
Dominance	.142	.189	.184*
Abasement	.018	-.217*	-.086
Nurturance	-.008	.024	.005
Change	.057	.191	.134
Endurance	-.146	.085	-.065
Heterosexuality	.086	-.081	.022
Aggression	.122	-.107	.032

* Significant at .05 level.

an individual's need to keep at a task until it is finished, was higher for DOR's (persons who attrite voluntarily) than for any other group including Pass. While the difference between groups is not significant, it is most certainly not in the expected direction. Such a result creates some doubt as to the nature of the factors being measured by scales of the EPPS, as do differences on other scales (Succorance and Achievement, for example) which show considerable divergence from logical assumptions regarding characteristics of unsuccessful cadets.

In general, considering the number of scales and the relatively small sample size, most differences between groups, including those in the wrong direction, could probably be accounted for by chance variation. Findings indicate that it would seem impractical to attempt to employ the EPPS as an additional variable in the Pensacola Student Prediction System.

SUMMARY AND CONCLUSIONS

The Edwards Personal Preference Schedule was evaluated as a predictor of success in naval aviation training. It was found that scales of the EPPS did not differentiate between student aviators who succeeded and those who dropped voluntarily or failed in flight training. Differences found between groups on some of the scales could not be explained logically. The EPPS appeared to show little promise as a potential adjunct to the Pensacola Student Prediction System.

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