A Study of Experimental Incentives as an Influence on Enlistment Intention:

More is not Better

Robert L. Frey, Jr.
Albert S. Glickman
Abraham K. Korman
Barry E. Goodstadt
Alan P. Romanczuk

Technical Report No. 3
JUNE 1974

AMERICAN INSTITUTES FOR RESEARCH
WASHINGTON OFFICE
Address: 3301 New Mexico Avenue, N.W., Washington, D.C. 20016
Telephone: (202) 686-6800

R74-4

AMERICAN INSTITUTES FOR RESEARCH

WASHINGTON, D.C.

EDWIN A. FLEISHMAN, PhD, DIRECTOR

Albert S. Glickman, PhD, Deputy Director

HUMAN RESOURCES RESEARCH GROUP

Clifford P. Hahn, MS, Director

Studies on personnel selection, training, instructional and training methods, proficiency measurement, accidents, and evaluation of educational and social programs.

ORGANIZATIONAL BEHAVIOR RESEARCH GROUP

Albert S. Glickman, PhD, Director

Research on individual, interpersonal and group behavior as they relate to organizational functioning and effectiveness, including studies of leadership, management, motivation and group processes, and factors which enhance individual and institutional competence and improve life quality.

PERSONNEL MANAGEMENT SYSTEMS RESEARCH GROUP

Robert W. Stephenson, PhD, Director

Development of taxonomic systems for classifying jobs, computer assisted counseling systems and personnel data bases, assignment and career progression systems, and evaluation of individual and unit training programs.

HUMAN PERFORMANCE RESEARCH GROUP

Jerrold M. Levine, PhD, Director

Research on stress, environmental factors, information and decision processes, human abilities and skill acquisition, and psychobiological mechanisms of behavior.

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER: Technical Report #3	2. GOVT ACCESSION NO.
3. RECIPIENT'S CATALOG NUMBER	
4. TITLE (and Subtitle): A Study of Experimental Incentives as an Influence on Enlistment Intention: More is Not Better	5. TYPE OF REPORT & PERIOD COVERED: Technical Report
6. PERFORMING ORG. REPORT NUMBER: AIR-32201-6/74-TR-3 R74-4	
7. AUTHOR(s): Robert L. Frey, Jr., Albert S. Glickman, Abraham K. Korman, Barry E. Goodstadt, Alan P. Romanczuk	8. CONTRACT OR GRANT NUMBER(s): N00014-72-C-0387
9. PERFORMING ORGANIZATION NAME AND ADDRESS: American Institutes for Research, 3301 New Mexico Avenue, N.W., Washington, D.C. 20016	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS: NR 156-001
11. CONTROLLING OFFICE NAME AND ADDRESS: Personnel and Training Research Programs, Office of Naval Research (Code 458), Arlington, Virginia 22217	12. REPORT DATE: June 1974
	13. NUMBER OF PAGES: 69
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)	15. SECURITY CLASS. (of this report): Unclassified
	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Enlistment incentives	All-volunteer force
Enlistment bonuses	All-volunteer Navy
Recruiting practices	Career choice

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Incentives, such as enlistment bonuses, are frequently suggested as a means of enhancing recruiting effectiveness in the all-volunteer force setting. The basic assumption behind them is "more is better." In two separate nationwide surveys ($n > 800$) of male American youth (age 16-22), single incentives and combinations of two and three different incentives were compared for potential influence on enlistment. Also, the following comparisons were made of incentives differing in absolute magnitude on the same dimension: (1) $1000 vs. $3000 bonus,

20. (2) two years free college after four years of service vs. four years of free college after four years of service, and (3) bonus of 10% vs. 25% of base pay for exceptional performance. There was no support in either iteration for the assumption that "more is better" in attracting men into the Navy. Indeed, "more is sometimes worse." The most attractive items represented a pervasive interest in increased opportunities for vocational self-determination and the exercise of fate control, as well as traditional tangible incentives. Recruitment strategies are discussed that take both of these needs into account.

AIR-32201-6/74-TR-3

A STUDY OF EXPERIMENTAL INCENTIVES AS AN INFLUENCE ON ENLISTMENT INTENTION: MORE IS NOT BETTER

Robert L. Frey, Jr.
Albert S. Glickman
Abraham K. Korman
Barry E. Goodstadt
Alan P. Romanczuk

TECHNICAL REPORT NO. 3

Navy Career Motivation Programs in an All-Volunteer Condition

This report was prepared under the Navy All-Volunteer Force Manpower R&D Program and monitored by the Personnel and Training Research Programs, Psychological Sciences Division, Office of Naval Research under contract No. N00014-72-C-0387, Contract Authority Identification No. NR 156-001.

Principal Investigator: Albert S. Glickman

American Institutes for Research
Washington Office

June 1974

ACKNOWLEDGEMENTS

The authors of this report wish to express their thanks to the many people who helped in the implementation of this research, not all of whom can be named here.

In the Naval Establishment, Dr. Marshall J. Farr, Director of Personnel and Training Research Programs for the Office of Naval Research (Scientific Officer for the Career Motivation Project), Assistant Director, Dr. Joseph J. Young, and Research Study Director, Dr. H. Wallace Sinaiko, contributed invaluably during every phase of this study. A special note of thanks goes to Mrs. Sara Armstrong of the Office of Naval Research who expedited the needed OMB clearances.

At AIR, Mrs. Doris G. Donohue, who carried the major editorial and secretarial burden, merits special mention.

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

LIST OF TABLES AND FIGURES

LIST OF TABLES AND FIGURES (Continued)

INTRODUCTION

The Navy needs to develop better administrative techniques to foster the appeal of a Navy career by competent personnel. The choice of a strategy by which to influence career motivation in the Navy has assumed increasing importance in the all-volunteer setting. Despite the urgent need, however, the optimum strategy is not immediately apparent. While a variety of strategies are possible, research data are lacking to indicate the best of the approaches to follow at this time.

As part of our research program in Navy career motivation, major concerns have been, first, the specification of the types of change strategies which are possible and, second, the identification of the conditions under which each of these strategies would be most effective in influencing career motivation. In the latter case, our interest has been in specifying the types of change strategy that are most effective in given environmental situations and the types of people for whom it is most effective in that situation. Our purpose in this report is to discuss the results of the first of our attempts to estimate the influence of one change strategy, the utilization of experimental incentives for influencing enlistment. Our procedure here will be first to discuss the logic underlying the utilization of incentives as mechanisms for influencing behavior. Following this discussion, we will present the outcomes of our research designed to ascertain the potential usefulness of a number of experimental incentives for influencing intention to enlist in the Navy.

Incentives as a Change Strategy for Influencing Career Motivation

The basic logic of a change strategy in which incentives are manipulated can be summarized rather briefly. Despite apparent simplicity, there are some very strong, long-standing management assumptions rooted in this approach. Consequently, if they turn out not to be justified by empirical data, strong implications for policy changes become manifest. As we will see, it is precisely such a situation which is displayed in the findings of the research which we shall report.

The logic of "incentives" as a change mechanism starts with the simple paradigm that if you offer people the opportunity to gain specific objects or objectives which they value, they will change their behavior in order to realize these values and then adjust their behavior in order to maintain these values. In this way, behavior theoretically can be "shaped" and "maintained" in the manner desired by the individual controlling the valued "reinforcements."

This apparently simple paradigm has served as a point of departure for change attempts in a variety of social contexts, but the implicit assumptions of this approach have often been overlooked. Yet, they are crucial in both the design and utilization of incentive change methods.

One assumption is that the incentives which are being manipulated actually represent appreciable values and constitute sources of attraction to the target population involved. To the extent that they are not, obviously, the approach loses effectiveness. For the Navy, which in the All-Volunteer Force (AVF) setting deals with a great diversity of individuals with a wide variety of needs and motives, value assumptions attached to incentives employed are particularly crucial. Clearly, the greater the diversity among individuals in the target group, the harder it will be to use any single incentive change strategy effectively.

Another assumption of the incentive change strategy is summed up in the phrase, "more is better." That is, if the opportunity to realize values will serve to change behavior, then the more "value opportunity" that is provided (in the sense of either greater amounts of a specific value or a greater number of specific values) the greater will be the change in behavior that would take place in the individual and the greater the proportion of the group that will be affected. To the extent that this assumption is supported, the job of the administrator in utilizing this approach is clearly specified. To the extent that this is not so--e.g., sometimes increases in incentives lead to changes and sometimes they do not--different implications for administration must be drawn. As we shall see, the latter condition obtained in the research reported here.

Finally, a third assumption of the incentive approach is that the effectiveness of an incentive is independent of the context in which it is presented and utilized. There is considerable doubt that this assumption can be met. For example, support can be found for the conclusion that incentives that are presented to individuals who have been given such incentives previously have a different effect than upon those who have not obtained incentives earlier (Korman, 1971). Similarly, Deci (1972) has shown that combining intrinsic incentives with one another and extrinsic incentives with one another have different effects than combining intrinsic and extrinsic incentives with one another. The data we will present here have implications for the adequacy of this assumption also and the administrative implications which follow from them.

Objectives

The purpose of the research reported here was to administer a set of experimental incentives to a random sample of male youth in the age ranges 16-22 in order to ascertain their potential fruitfulness for inducing enlistment in the Navy. In this assessment, an effort was made to compare the potential fruitfulness of these incentives when they were presented individually and when presented in combination with one another. In line with the iterative procedure we have outlined elsewhere (Glickman, et al., 1973) such information would then be utilized in the planning of additional administrative experiments utilizing an incentives strategy.

METHOD

Two consecutive experiments were conducted involving essentially the same procedures for sampling and analysis of reactions of American young men to sets of incentives that might be used by the Navy to attract recruits. Each of these will be describe in turn and results and implications compared and cummulated.

Experiment I

Incentive development. In developing the experimental incentives to be used in the first iteration, a variety of procedures were employed in order to be sure to consider a wide range of possibilities with potential applicability to contemporary American youth. Of considerable importance in formulating these incentives were our discussions with Navy personnel concerning the types of incentives which were perceived as being viable within the Navy setting, considering the new extraordinary demands being made by the AVF. These discussions took place in a continuing series of formal and informal meetings and during feedback sessions that were held with Navy personnel as an integral part of our overall research, development, evaluation, and feedback sequence. Also important in this development was the work of many previous researchers in the field of Naval enlistment incentives (cf. Gilbert Survey, 1972) and the youth attitude surveys sponsored by ONR, conducted by the University of Michigan (Johnston & Bachman, 1972). A third influence was our continuing surveillance of contemporary behavioral science research on the changing values and mores of our society. Finally, a major factor in our thinking was the findings of our other recent studies in Naval career motivation. Thus, in both our interview research (Glickman, et al., 1973) and in our questionnaire survey of junior-college students (Korman, et al., 1973) we found continually that respondents ascribe high value to "fate-control" in one's vocational life, as well as to traditional tangible incentives such as money, the opportunity for advancement, and health and welfare benefits. Particularly notable in the latter study was the finding in a factor analysis of a preliminary set of experimental enlistment incentives that approximately 48% of the common variance was accounted for by a factor denoting desire for "fate-control"

in one's vocational life. In addition, consistent with our previous discussion, this last study also suggested the possibility that different incentives might hold different values for men from different socio-economic backgrounds. Hence, our experimental incentives needed to take these findings into consideration.

Administrative procedures. As a result of these inputs, a total of 17 experimental incentives were developed for evaluation in the first iteration. In Appendix A can be found the instructions to respondents, the complete list of incentive statements and the response alternatives for Experiment I. The procedure used for evaluating these incentives was a function of our interest in determining the effects of these incentives both singly and in combination with one another. However, practical considerations also dictated that not all possible combinations of incentives could be used. Hence, a procedure was developed whereby the total sample available was subdived on a random basis to obtain seven subsamples (A-G). The members of each subsample then responded to five or six incentive statements or combinations of incentive statements as shown in Figure 1.

	Subsamples						
	A	B	C	D	E	F	G
Items to Which Sub-samples Responded	1	2	3	1+2	2+3	1+3	1+2+3
	4	5	6	4+5	5+6	4+6	4+5+6
	7	8	9	7+8	8+9	7+9	7+8+9
	10	11	12	10+11	11+12	10+12	10+11+12
	13	14	15	13+14	14+15	13+15	13+14+15
	16	17					

Figure 1. Sampling Design for Experiment I

In response to each set of 1, 2, or 3 incentive statements, the subject was requested to: "Indicate what effect these changes would have on your interest in the Navy." Five alternatives were offered ranging from,"I would think less favorably of the Navy, if this change was introduced," to "I would think more favorably and would seriously consider enlisting in the Navy."

Interviews were individually administered.

In this way, all subjects gave five responses, with the exception of Subsamples A and B where six responses were required, with some receiving simple (single) incentives and some receiving complex (double or triple) incentives. The first five rows of the design, involving items 1 through 15, permitted us to ascertain the value ascribed to each of the incentives when presented singly, and when additional potential value would be involved by increasing the number of incentives in a "package." Response "demand" was controlled by presenting only one type of set (single, double or triple) to any respondent. Items 16 and 17 were included to permit examination of the effect of manipulating the absolute level of two incentives of particular interest. The comparisons involved were Item 1 with 17, and Item 15 with 16, dealing respectively with enlistment bonuses and education benefits.

Experiment I Sample. The vehicle for administration of these experimental incentives was the national sample utilized by Gilbert Youth Research as part of its Omnibus Youth Survey, that is, conducted on a quarterly basis. This sample consists of a nationwide sampling of youth, ages 14-22, stratified within geographic region according to age and school status. Race and socio-economic backgroud are available for breakdown analysis, but are not used as bases for stratification. The Navy incentive questions were administered in May 1973 to 860 members of the sample who were males aged 16-22. Table 1 provides a breakdown of the sample sizes and appropriate subclass frequencies for each of the seven subsamples used.

Table 1

Experiment I Sample Size and Sub-class Frequencies for Each Subsample

	A	B	C	D	E	F	G
Total	142	129	160	102	133	107	87
White	129	118	143	98	119	97	73
Black	13	11	17	4	14	10	14
H.S. Student	51	64	47	52	48	53	60
College Student	59	30	87	29	61	30	9
Non-school	32	35	60	21	24	24	18

Experiment II

Incentive development. For the second iteration, the five most attractive incentives from Experiment I were retained. This was done to check whether their mean level of attractiveness would hold up in replication. If so, one could be reasonably sure of the reliability of the incentive measures over time. Ten new incentives also were developed, using much the same approach as in Experiment I. That is, further discussions were held with Naval personnel as part of our overall research, development, evaluation, and feedback sequence. Also, of course, the results of Experiment I and other previous research (mentioned earlier) were taken into account.

Administrative procedures. The rationale and implementation were virtually the same as in Experiment I. The only difference was that there were 15 experimental incentives instead of 17. In Appendix C can be found the instructions to respondents and the list of incentive statements. As before, the total sample was randomly subdivided into seven subsamples. The members of each subsample then responded to five incentive statements or combinations of incentive statements as shown in Figure 2.

	Subsamples						
	A	B	C	D	E	F	G
Items to Which Sub-samples Responded	1	2	3	1+2	2+3	1+3	1+2+3
	4	5	6	4+5	5+6	4+6	4+5+6
	7	8	9	7+8	8+9	7+9	7+8+9
	10	11	12	10+11	11+12	10+12	10+11+12
	13	14	15	13+14	14+15	13+15	13+14+15

Figure 2. Sampling Design for Experiment II.

As before, in individual interviews, in response to each set of 1, 2, or 3 incentive statements, the subject was requested to: "Indicate what effect these changes would have on your interest in the Navy." The same five response alternatives were offered.

This time all subjects gave five responses. In Experiment II, Items 2,5,11, and 14 were structured to permit examination of the effect of manipulating the absolute level of two incentives--enlistment bonuses and pay bonuses for exceptional performance. The comparisons involved were Item 2 with Item 14, and Item 5 with Item 11. In contrast to Experiment I, the above four items were presented to the same respondents. In this way, we could check whether the same results would be obtained from a within groups comparison as had been obtained from a between groups comparison.

Experiment II Sample. The vehicle for administration of these experimental incentives was once again a national sample utilized by Gilbert Youth Research as part of its Omnibus Youth Survey. This administration took place in December 1973 to 854 civilian males aged 16-22. Table 2 provides a breakdown of the sample sizes and sub-class frequencies for each of the seven subsamples.

TABLE 2

Experiment II Sample Size and Sub-class Frequencies for Each Subsample

	A	B	C	D	E	F	G
Total	169	83	115	126	117	131	113
White	157	77	109	120	112	125	109
Black	12	6	6	6	5	6	4
H.S. Student	46	36	47	36	46	52	40
College Student	96	26	40	65	52	61	55
Non-school	27	21	28	25	19	18	18

EXPERIMENT I RESULTS

Except for Items 16 and 17 (which will be discussed later), the incentives are best described as comprising five sets. Each set, corresponding to a row of the sampling design in Figure 1, consists of incentives which are specific examples of factors found to be important in our questionnaire survey of junior college students (Korman, et al., 1973).

The first row (i.e., Items 1, 2, 3, 1+2, 2+3, 1+3, 1+2+3), is a set of incentives and incentive packages which reflect a factor of vocational and financial satisfaction. The second set represents a factor of integration of military and civilian life. The third set represents a factor of self-determination or fate-control in one's vocational life. The fourth set represents a factor of reduction of perceived inequities. The fifth set represents a combination of two of the above factors--self-determination and vocational/financial satisfaction.

Effects of Increasing the Number of Incentives

A number of different analyses were made. The first analysis investigated the "more is better" assumption when the number of incentives offered was increased. Within each set, the best single incentive, the best double incentive package, and the triple incentive package were compared by analysis of variance. The comparative means of attractiveness for each set are shown in Figure 3. The results were consistent within each set. In every case, the best double incentive package was not significantly more (or less) attractive than the best single incentive. Also, in every case, the triple incentive package was not significantly more (or less) attractive than either the best double incentive package or the best single incentive. Clearly, the "more is better" assumption was not at all supported. All statistical tests were made after partialling out differential effects of educational status, age, family income, and race, using Overall and Spiegel's (1969) Method - 2, least squares analysis of variance.

Since some of the best double incentive packages did not include the best single incentive, another approach to the analysis of the "more is better" assumption was made. Within each set, the best single incentive, the best double incentive package that also included the best single incentive,

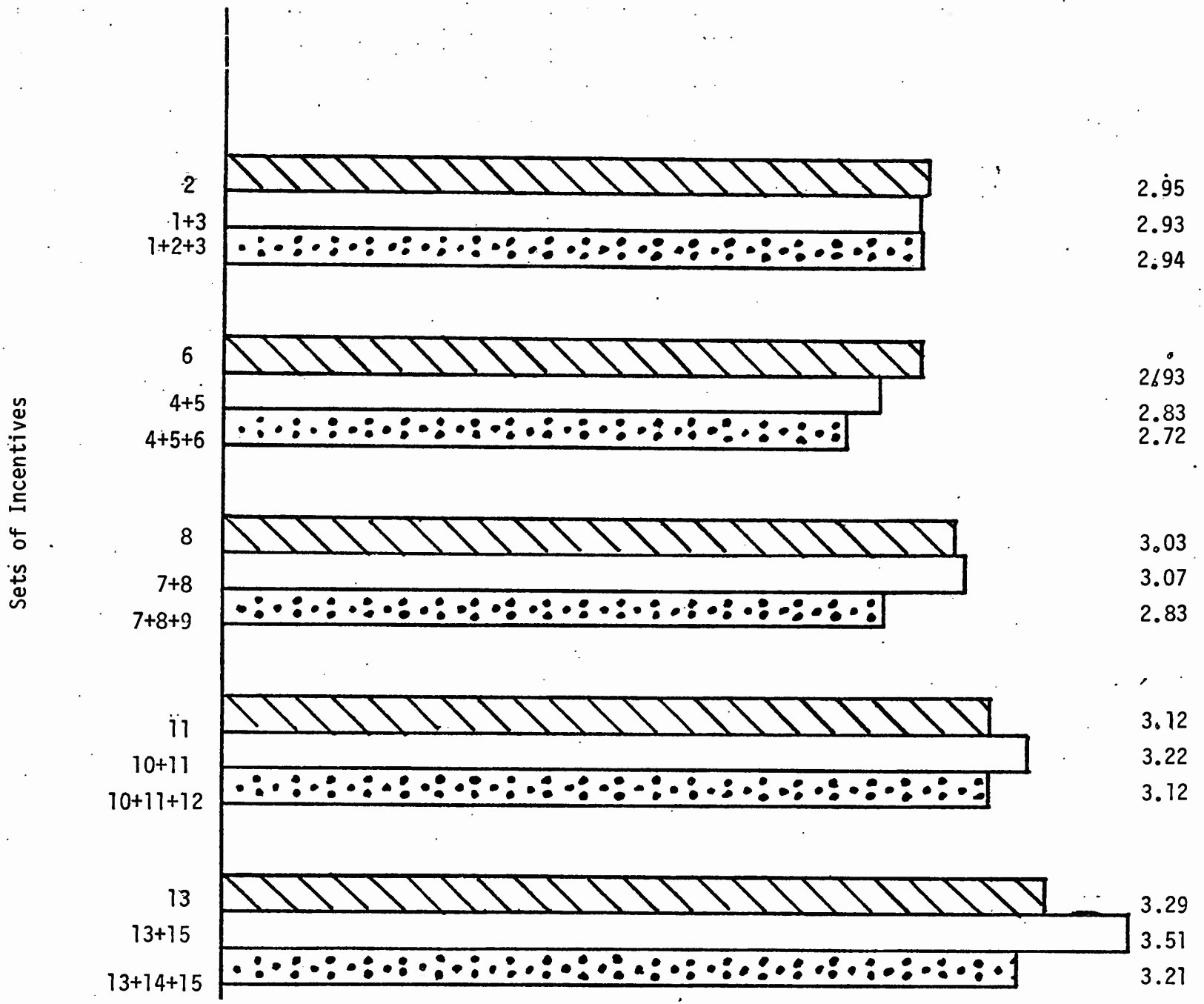

Figure 3. Experiment I-- Comparative attractiveness of the best single incentive, the best double incentive package, and the triple incentive package within each set.

and the triple incentive package were compared by analysis of variance. The comparative attractiveness of the incentives is shown in Figure 4. As before, the results were consistent within each set. Even though the double incentive packages were rated higher in absolute terms in some instances, in no case was the difference from its best single component greater than could be accounted for by chance. Also, the mean rating of the triple incentive package was not significantly different from either the double incentive package or the best single incentive.

In both sets of analyses, the "more is better" assumption did not receive any support. Adding one or even two incentives to the best incentive of any set had no significant positive or negative effect on the attraction of the Navy to civilian interviewees.

To test the limits of generalization further, one may compare all singles (not only the best one) against all double and triple packages in which they are contained. When we did this, we found that of 30 such comparisons involving singles and doubles, singles were significantly higher than doubles in six instances, lower in three instances and no different in 21 instances. Comparing singles and triples in 15 cases, singles were significantly higher than triples in no cases, lower in two cases and no different in 13 cases. Even when the least attractive single incentives are included in the comparisons, there are no significant differences in 34 of the 45 cases. Considering the significant differences, the single incentives are more attractive as often as they are not. So it would appear that we can extend our generalization over a wider range of incentive values quite confidently.

Effects of Increasing the Absolute Magnitude of Incentives

For two pairs of the single incentive items, another approach was taken. We wished to see whether increases in the absolute magnitude of single incentives would enhance the attractiveness of the Navy. Differences in the value of an enlistment bonus were presented since enlistment and reenlistment bonuses have a long history of popularity and use, though the Navy is not using enlistment bonuses at present. Thus, the attractiveness of a $1000 enlistment bonus was compared with the attractiveness of a $3000 enlistment bonus (Item 17 vs. Item 1). Another popular incentive is coverage

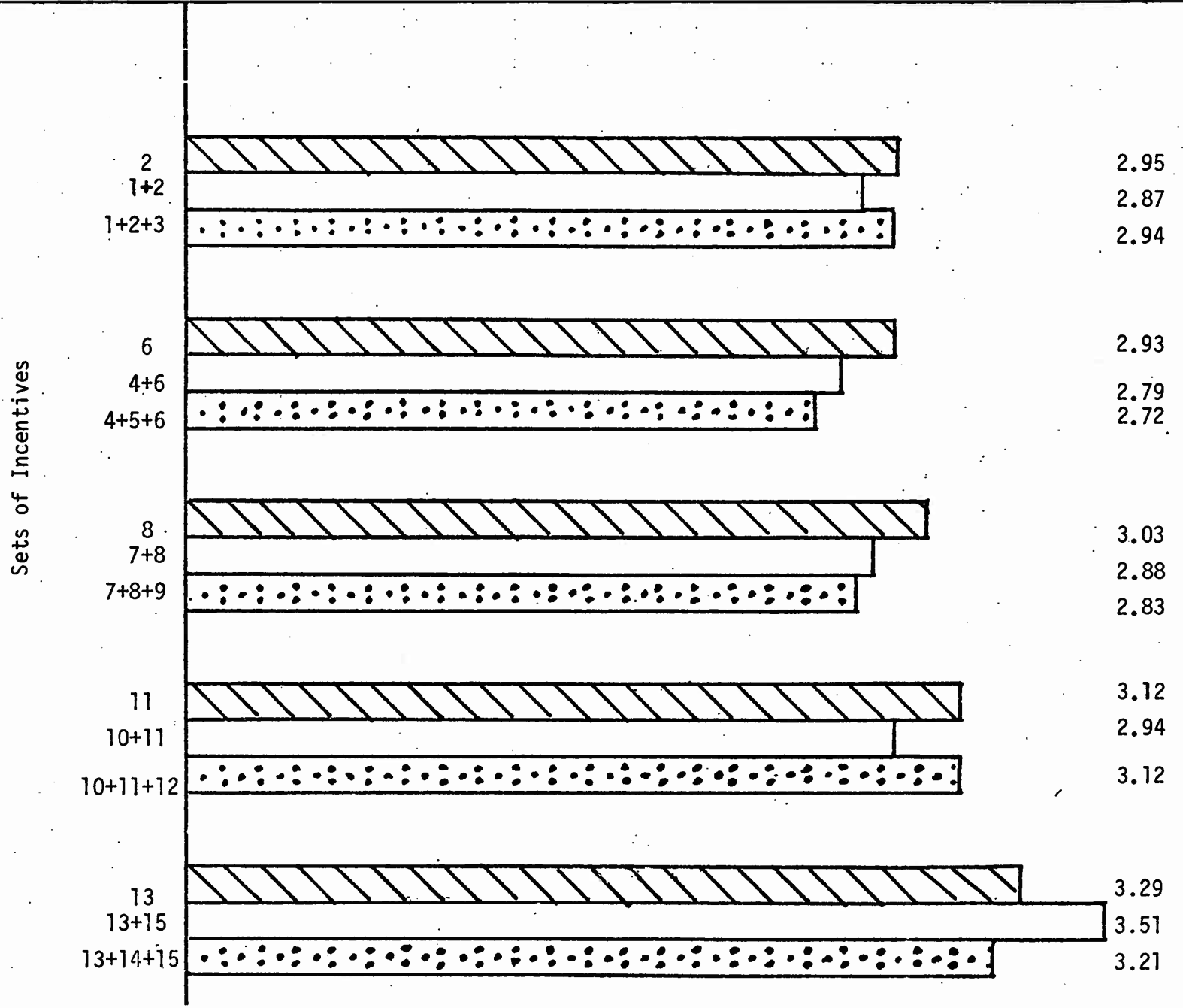

Figure 4. Experiment I -- Comparative attractiveness of the best single incentive, the best double incentive package which includes the best single incentive, and the triple incentive package within each set.

of college expenses after an enlistment term. Two years of college after four years of active duty was compared with four years of college after four years of active duty (Item 16 vs. Item 15). The results are shown in Figure 5. Surprisingly, contrary to popular opinion, the $1000 bonus is marginally more attractive than the $3000 bonus ($p<.10$). Also, there is no significant difference in attractiveness between two years of college and four years of college expenses. In this case, not only has the "more is better" assumption failed to be supported, but there was a tentative suggestion that "more is sometimes worse."

Differences in Attractiveness of Incentives as a Function of Socio-demographic Status

Tests were also made to see if there were differences in attractiveness of the incentives and incentive packages as a function of socio-demographic status. Educational status (high school student, college student, non-school youth), Age (16-17, 18-19, 20-22), Income (less than $8,000, $8,000 - $14,999, $15,000-$19,999, $20,000 and over, don't know/refused), and Race (White, Black) were used as variables in an analysis of variance design. Tests of the effect of each variable were made, partialling out the other three factors through application of least-squares techniques (Overall and Spiegel, 1969).

Table 3 shows the marginal means for all the significant effects. (The marginal means also are adjusted for confounding attributable to the other factors.) The mean values, 1, 2, 3, 4, 5 correspond to the response alternatives a, b, c, d, e respectively. The higher the means, the more the incentives attract men to the Navy. A number of the findings have immediate implications for developing selective appeals to different target groups.

For example, a number of the items showed differences in attractiveness as a function of educational status. Figure 6 illustrates one such finding. Comparing across groups, Item 4 (15 year retirement at half-pay) is significantly more attractive to the high school students than to the other categories. But, Item 6 (20 year retirement at 3/4 pay) shows no differential effect. It is equally highly attractive to all three groups. Within groups, the two alternatives are equally attractive to high school students, but the longer range payoff has greater appeal to the other (on the average, older) groups.

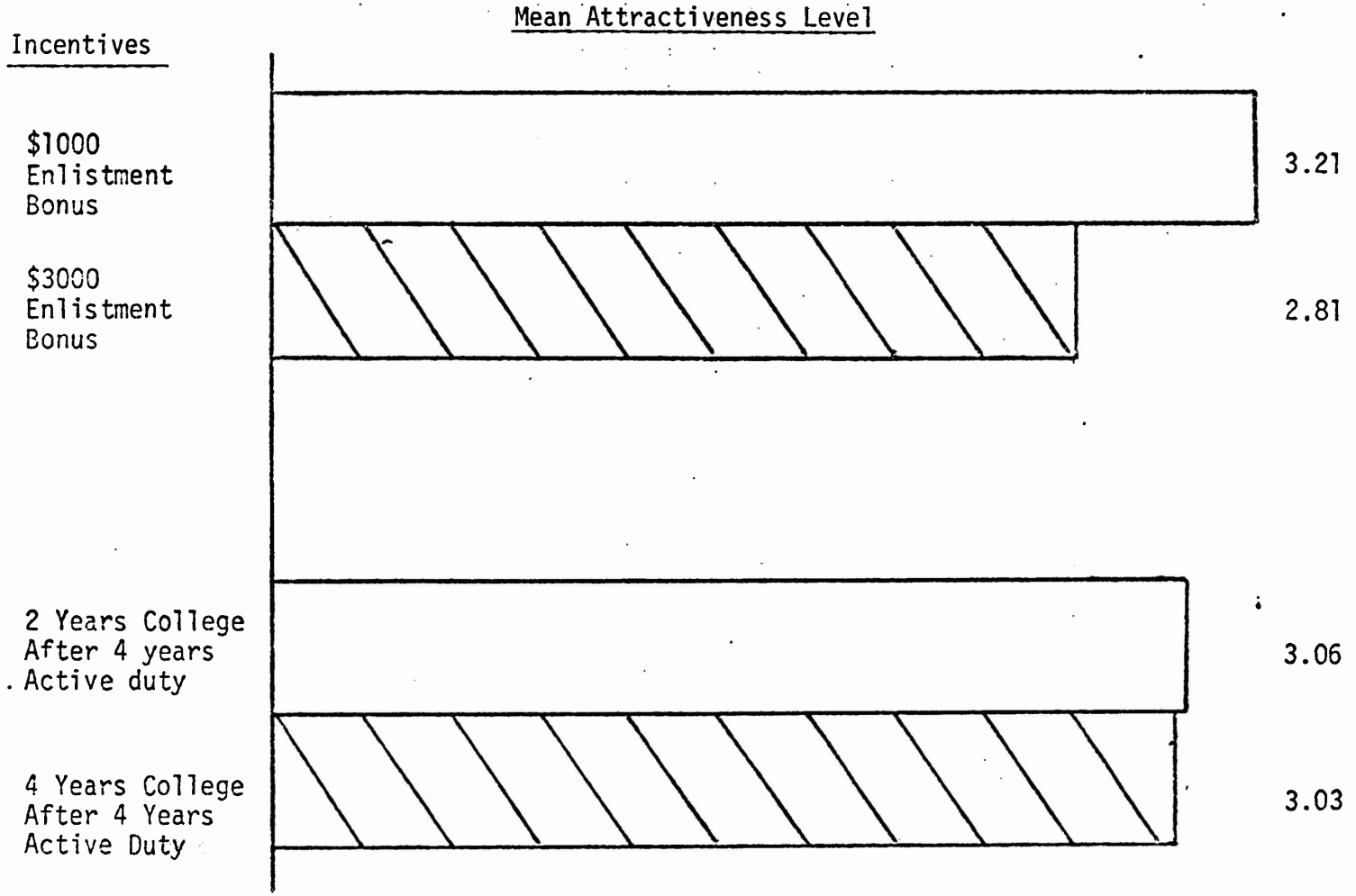

Figure 5. Experiment I -- The effect of increases in the absolute magnitude of single incentives on attractiveness.

Table 3

Experiment I -- Marginal Means of all the Significant Effects

Item 4

Educational Status
$p < .009$

H. S. Students	-	3.1
Non-School Youth	-	2.5
College Students	-	2.2

Item 7

Educational Status
$p < .023$

H. S. Students	-	2.9
Non-School Youth	-	2.5
College Students	-	2.1

Item 8

Educational Status
$p < .005$

H. S. Students	-	2.8
Non-School Youth	-	3.7
College Students	-	3.0

Item 12

Age
$p < .005$

16 - 17	-	2.5
18 - 19	-	2.8
20 - 22	-	3.4

Item 4+5

Educational Status
$p < .019$

H. S. Students	-	2.6
Non-School Youth	-	2.7
College Students	-	3.4

Item 7+8

Educational Status
$p < .001$

H. S. Students	-	2.6
Non-School Youth	-	3.5
College Students	-	3.8

Table 3 (continued)

Item 7+8

Age
$p < .043$

16 - 17	-	3.5
18 - 19	-	3.5
20 - 22	-	2.8

Item 10+11

Income
$p < .012$

< $ 8,000	-	2.6
$ 8,000-$14,999	-	3.5
$15,000-$19,999	-	3.5
$20,000 & over	-	3.1
Don't know/refused	-	2.6

Item 5+6

Educational Status
$p < .001$

H. S. Students	-	2.7
Non-School Youth	-	1.8
College Students	-	2.1

Item 5+6

Age
$p < .001$

16 - 17	-	1.8
18 - 19	-	2.6
20 - 22	-	2.3

Item 11+12

Educational Status
$p < .007$

H. S. Students	-	2.6
Non-School Youth	-	1.9
College Students	-	2.4

Item 11+12

Income
$p < .001$

< $ 8,000	-	3.2
$ 8,000-$14,999	-	2.2
$15,000-$19,999	-	2.4
$20,000 & over	-	2.1
Don't know/Refused	-	1.8

Table 3 (continued)

Item 14+15			Item 1+2+3		
Income $p < .001$			Race $p < .030$		
< $ 8,000	-	3.2	White	-	2.8
$ 8,000-$14,999	-	2.0	Black	-	3.6
$15,000-$19,999	-	2.5			
$20,000 & over	-	1.7			
Don't know/Refused	-	2.0			

Item 4	15 year retirement at half pay
Item 7	Two months educational leave per year
Item 8	Choice of home port after two years of duty
Item 12	A greater sea duty pay differential
Item 4 + 5	15 year retirement at half pay plus Navy pay and benefits being made the same as for civilian jobs
Item 7 + 8	Two months educational leave per year plus choice of home port after two years of duty
Item 10 + 11	Assign women to most ships plus performance bonus up to 25% of base pay
Item 5 + 6	Navy pay and benefits being made the same as for civilian jobs plus 20 year retirement with 3/4 pay
Item 11 + 12	Performance bonus up to 25% of base pay plus a greater sea duty pay differential
Item 14 + 15	Reduced educational requirements for officer training programs plus four years of college after four years of active duty
Item 1 + 2 + 3	$3000 enlistment bonus plus special job training to start civilian life plus a two year enlistment

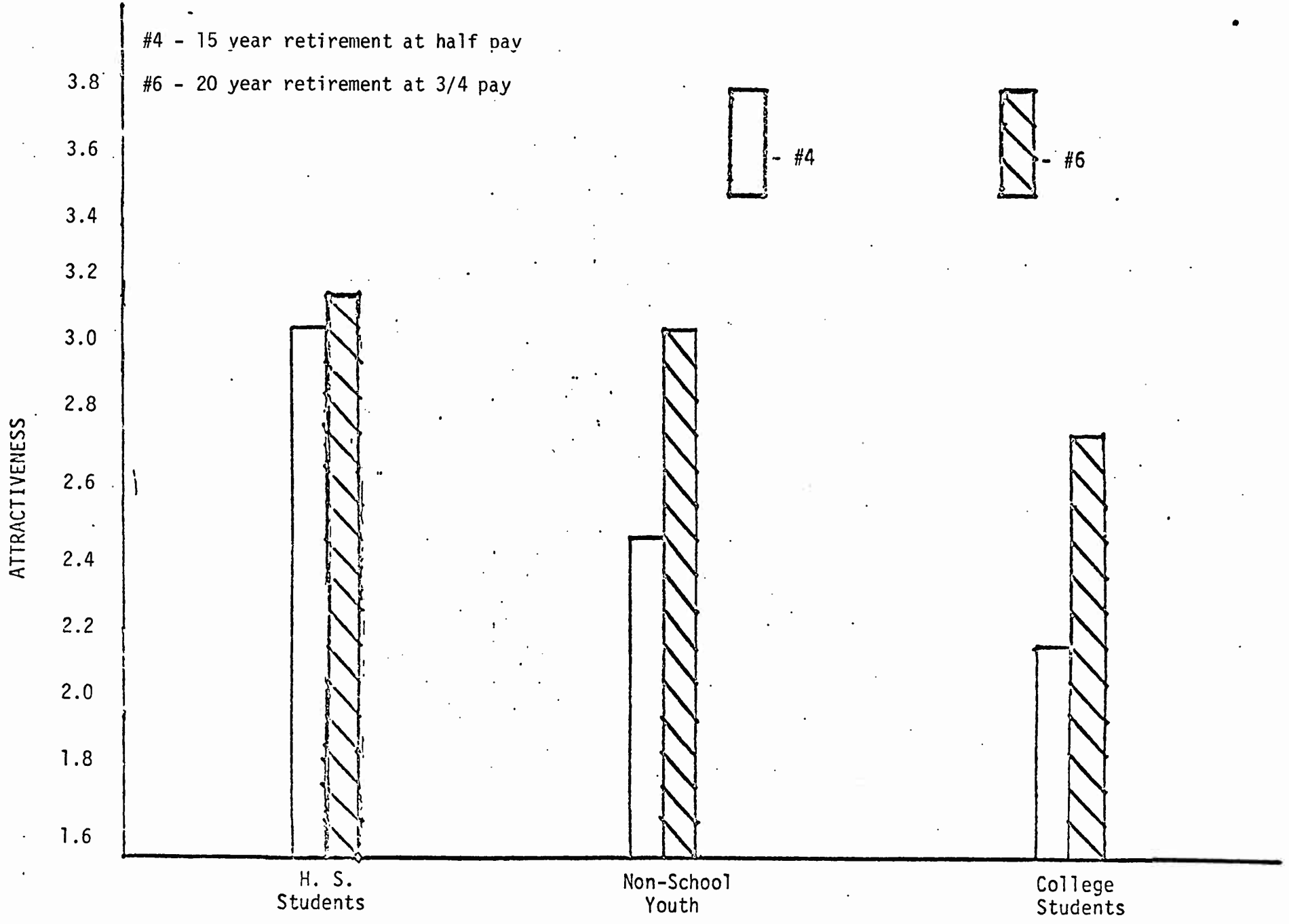

Figure 6 Experiment I -- Comparative attractiveness of Items #4 and #6 for different education categories.

Figure 7 shows that the non-school youth are quite attracted by a choice of home port after two years of duty (Item 8).

Figures 8 and 9 show that the college students are quite attracted by two double packages. The first package is 15 year retirement at half-pay plus Navy pay and benefits being made the same as for civilian jobs (Items 4+5). The second package is two months educational leave per year plus choice of home port after two years of duty (Items 7+8).

Figures 10 and 11 both show that the lower income (under $8,000) group is attracted by tangible financial and educational packages. They responded favorably to the package of a performance bonus up to 25% of base pay plus a greater sea duty pay differential (Items 11+12). Also, they liked the package of reduced educational requirements for officer training programs plus four years of college after four years of active duty (Items 14+15). Similarly, Figure 12 shows that the Blacks (who are on the average low in socio-economic status) were very attracted by the triple package of a $3,000 enlistment bonus plus special job training to start civilian life plus a two year enlistment (Items 1+2+3).

Table 4 rank orders the single incentives by their overall attractiveness mean--highest to lowest. The sampling design limitations do not allow for statistical comparisons to be made of each item with every other item. The items were split-up between three subsamples to meet practical constraints on the number of responses required of each respondent and on the total size of the sample. Thus, simultaneous application of within-group and between-group modes of analysis was not possible. It is worth noting nonetheless, that the "best" item is not pecuniary, but reflective of the desire for self-determination in one's vocational life. Furthermore, the top five items reflect the themes of self-determination, financial satisfaction, and educational opportunities.

Because of the nature of the response alternatives, another type of analysis was done. Response alternative "e" ("I would think more favorably and would consider enlisting in the Navy") has meaningful administrative implications. The percentage of the respondents who respond with the strong statement "e" for a given incentive translates as an immediate estimate of behavioral intention to join the Navy if such a policy were to be adopted.

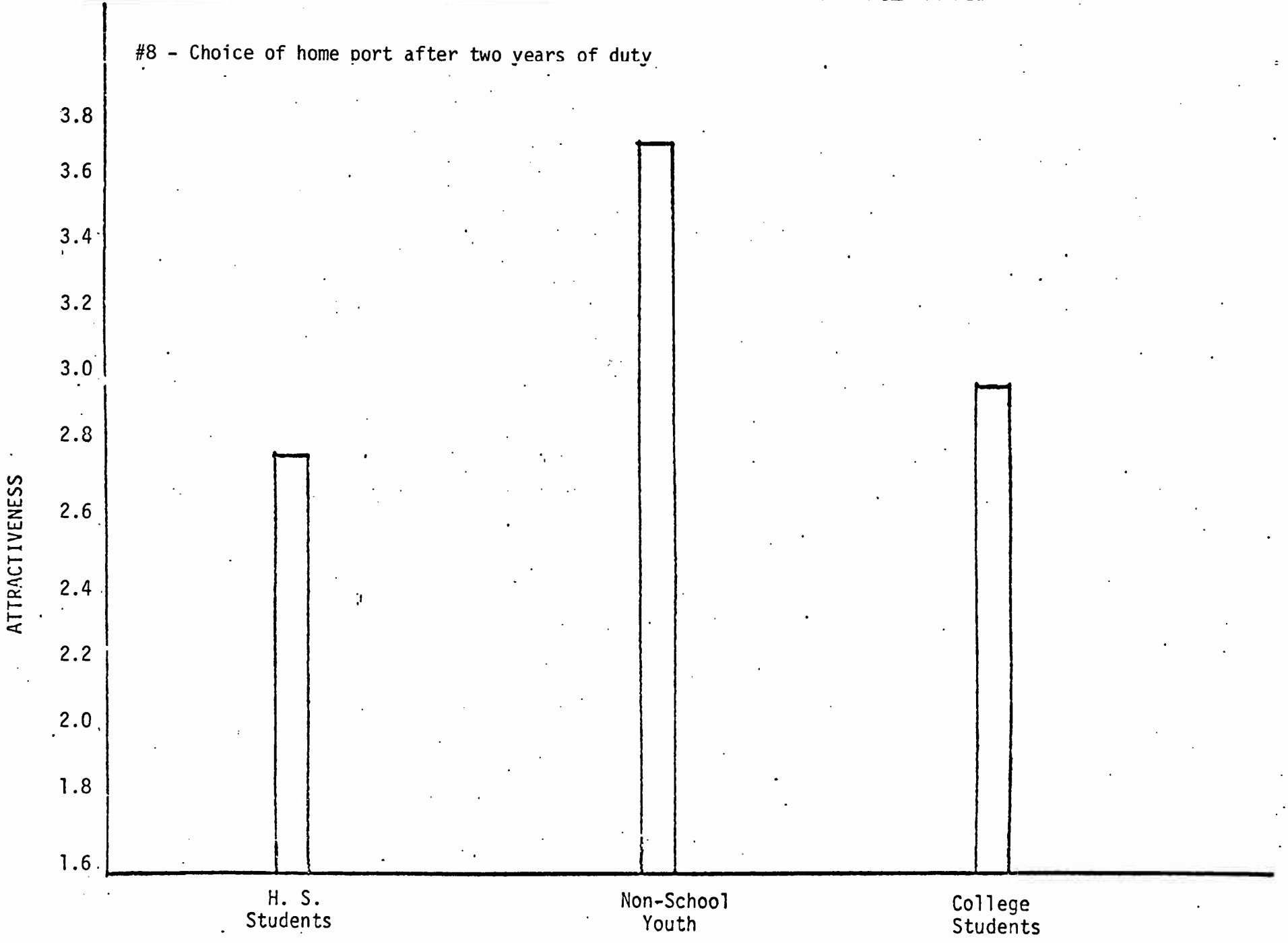

Figure 7. Experiment I -- Comparative attractiveness of Item #8 for different education categories.

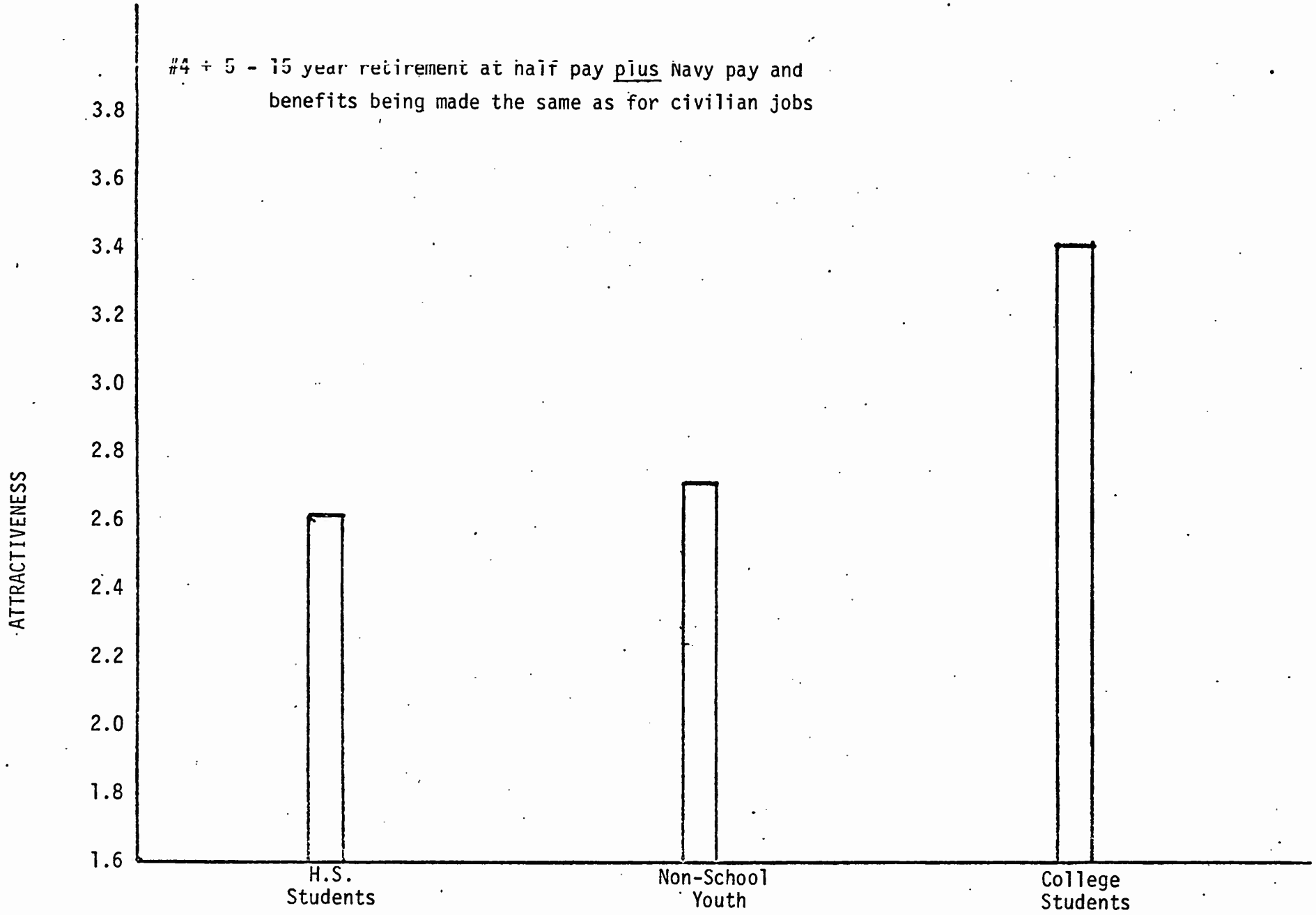

Figure 8. Experiment I-- Comparative attractiveness of double package (#4+5) for different education categories.

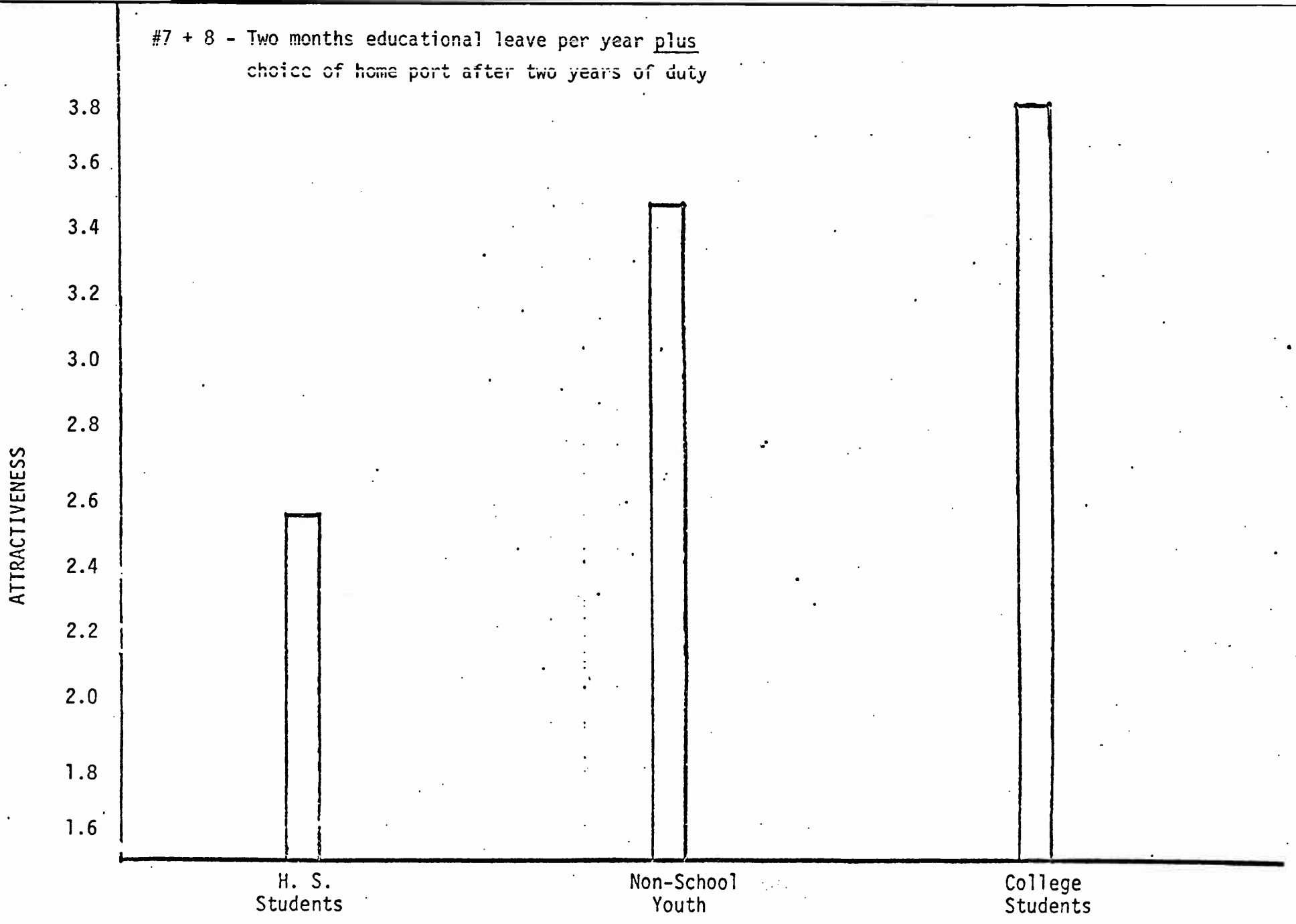

Figure 9. Experiment I -- Comparative attractiveness of double package (#7+8) for different education categories.

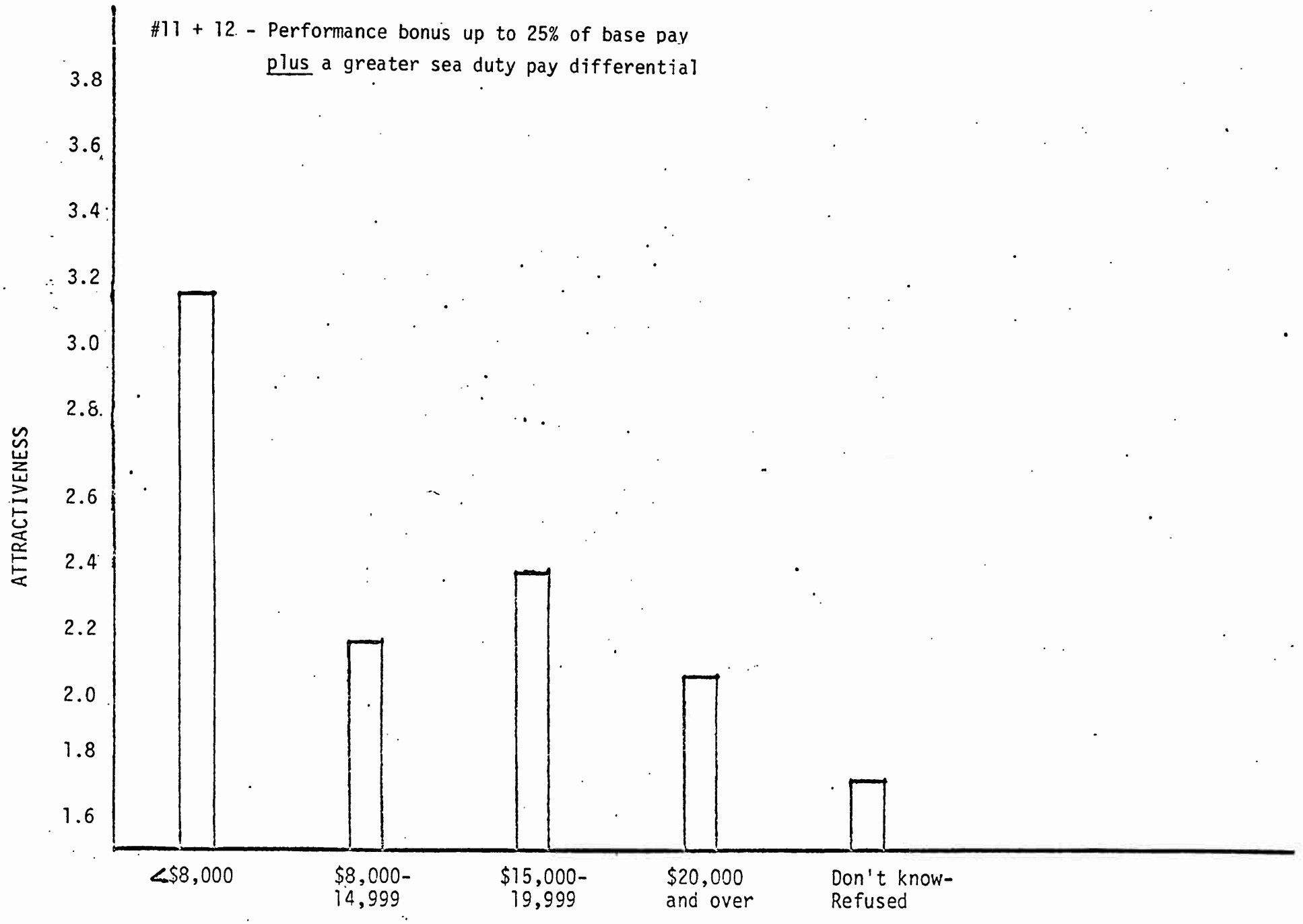

Figure 10. Experiment I -- Comparative attractiveness of double package (#11+12) across family income levels.

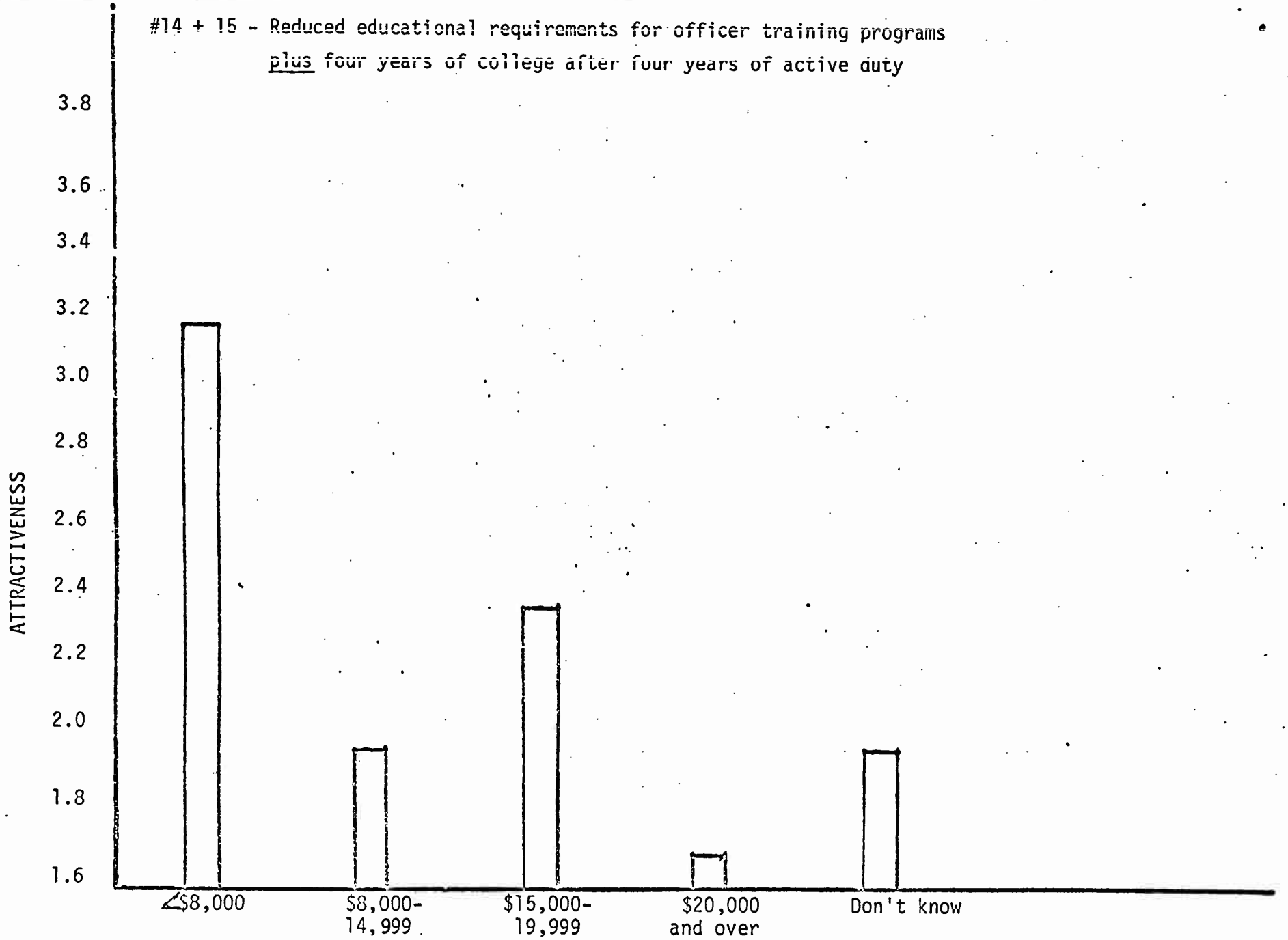

Figure 11. Experiment I -- Comparative attractiveness of double package (#14+15) across family income levels.

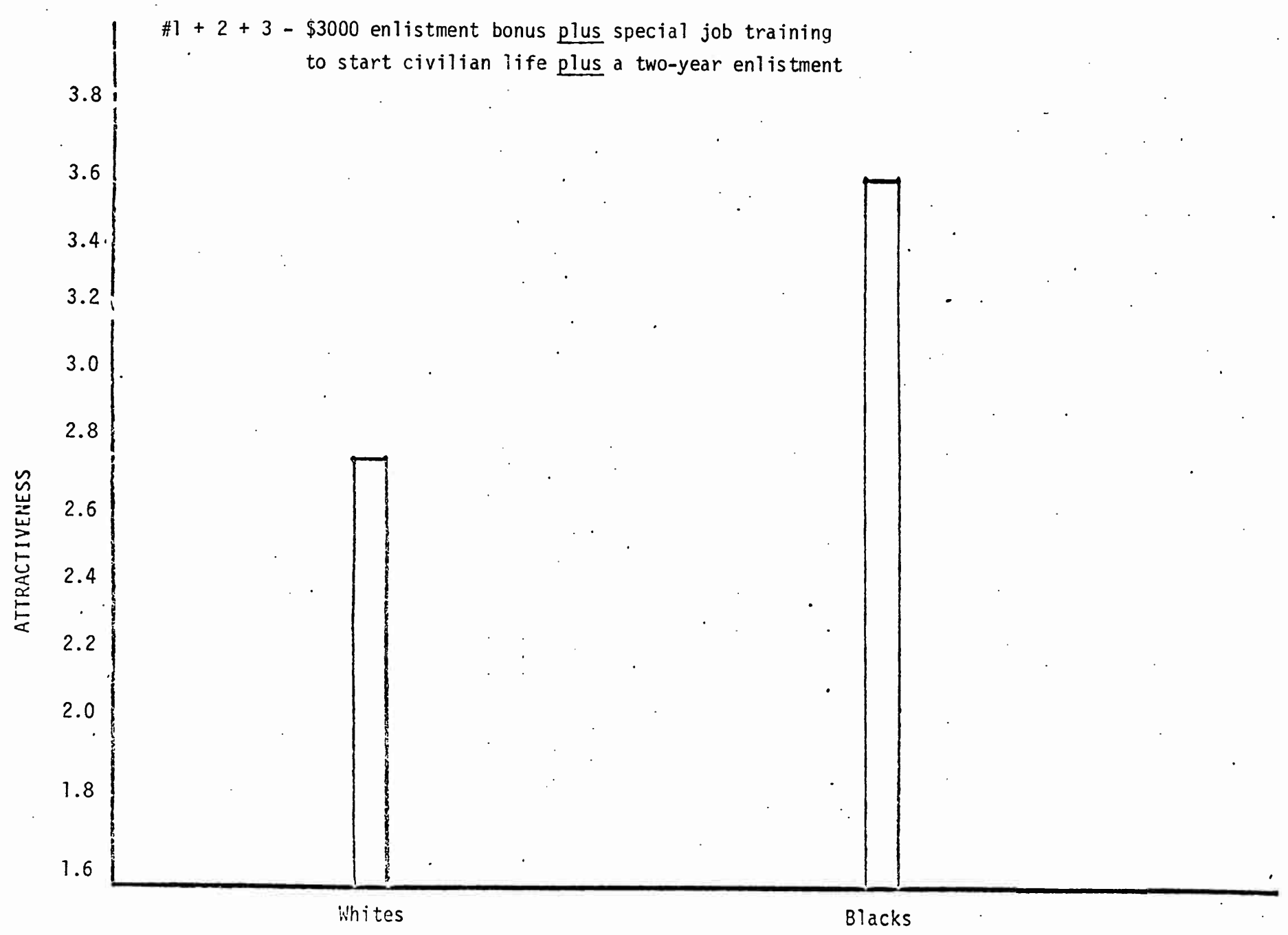

Figure 12. Experiment I -- Comparative attractiveness of triple package (#1+2+3) for Whites and Blacks.

Table 4*

Experiment I -- Overall Means of Each Incentive

Experimental Incentives for Enlistment	Mean Rating
Get out after three months if not satisfied	3.29
**$1000 enlistment bonus	3.21
Performance bonus up to 25% base pay	3.12
***Two years of college after four years of active duty	3.06
***Four years of college after four years of active duty	3.03
Choice of home port after two years of duty	3.03
Special job training to start civilian life	2.95
20-year retirement with 3/4 pay	2.93
Assign women to ship duty	2.93
Two months of educational leave per year	2.88
Two year enlistment period	2.88
**$3000 enlistment bonus	2.81
Opportunity to change job specialty after one year	2.76
Naval pay and benefits would be same as civilian	2.76
Reduced educational requirements for officer training programs	2.71
Greater sea duty pay differential	2.70
15-year retirement at half-pay	2.60

*The means and standard deviations for the entire sampling design (Figure 1) are shown in Appendix B.

**The first pair of items for testing the effect of increasing the absolute magnitude of incentives.

***The second pair of items for testing the effect of increasing the absolute magnitude of incentives.

Table 5 shows the percentage who answered "e" for each single incentive and two of the incentive packages. The latter two were included because they were the only packages where the "e" responses reached 20% or better.

The two items with the highest percentage of "e" responses were Item 17 ($1000 enlistment bonus) - 27%, and Item 13 (Get out after 3 months if not satisfied) - 25%. A χ^2 test between the two percentages was not significant. These items, of course, represent the dimensions of self-determination and financial/vocational satisfaction. Also noteworthy is the percentage of "e" responses for Item 11 (Performance bonus up to 25% base pay) - 20%. This item reflects the fact that there is a substantial number of young men who would regard the Navy with favor as a career opportunity if, as in civilian businesses, extra effort on their part could be expected to be directly recognized and reinforced by the organization's reward systems.

The percentage of "e" responses for Item 17 ($1000 enlistment bonus) and Item 1 ($3000 enlistment bonus) were 27% and 8% respectively. This is an overwhelming difference--χ^2 (Yates Correction) = 16.7, $p < .001$. This is the most dramatic refutation yet of the "more is better" assumption.

Table 5

Experiment I -- Percentage of Respondents who Would Seriously Consider Enlisting if Policy were Adopted

Item	-	Percent	Item	-	Percent
1	-	8%	11	-	20%
2	-	14%	12	-	9%
3	-	12%	13	-	25%
4	-	7%	14	-	14%
5	-	9%	15	-	14%
6	-	13%	16	-	13%
7	-	10%	17	-	27%
8	-	15%	10+12	-	21%
9	-	8%	13+15	-	29%
10	-	13%			

EXPERIMENT II RESULTS

A different approach to the composition of the packages was taken for this second iteration. In the first survey, each row of the design consisted of items from one of the factors identified in an earlier survey of junior college students (Korman, et al., 1973). Any double or triple package was perforce made up of items from the same factor (e.g., fate control, financial satisfaction, etc.). People in any given subsample thus responded to items from every factor used.

In the current survey, all the items for a given subsample were from the same factor. Subsample A had items relating to fate control in one's vocational life. Subsample B had items relating to financial satisfaction. Subsample C had items relating to personal/family vocational satisfaction and improvement. In this case, then, any double or triple package had items from two (or three) different factors. This qualitative difference between the two iterations will be important later for understanding certain minor differences in outcomes.

Effects of Increasing the Number of Incentives

The first analysis investigated the "more is better" assumption when the number of incentives offered was increased. Within each row of the design, the best single incentive, the best double incentive package, and the triple incentive package were compared by analysis of variance. The comparative attractiveness of the above incentives is shown in Figure 13.

One such double incentive package was more attractive than a single incentive. Package 1+3 was more attractive than item 1 ($p < .027$). No other double or triple packages were more (or less) attractive than the single incentives. All statistical tests were made after partialling out differential effects of educational status, age, family income, and race using Overall and Spiegel's (1969) Method-2, least squares analysis of variance.

Since some of the best double incentive packages did not include the best single incentive, the "more is better" assumption was tested in another way. Within each row of the design, the best single incentive, the best double incentive package that also included the best single incentive, and the triple incentive package were compared by analysis of variance. The comparative

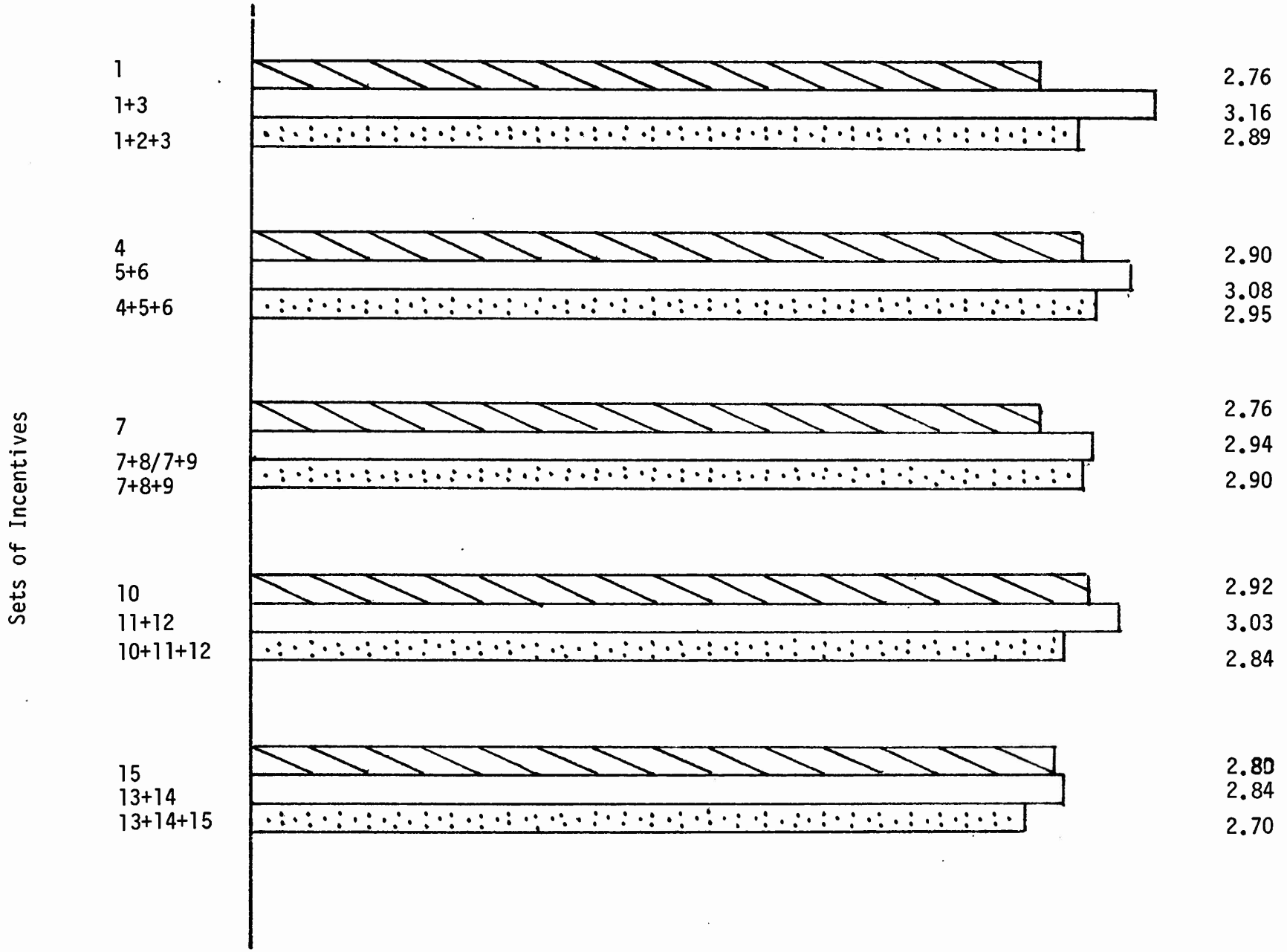

Figure 13. Experiment II -- Comparative attractiveness of the best single incentive, the best double incentive package, and the triple incentive package within each set.

attractiveness of the incentives is shown in Figure 14.

One such double incentive package was more attractive than the best single incentive. Package (1+3) was preferred over Item 1 ($p < .027$). Package (1+3) was also more attractive than the triple incentive package ($p < .043$).

In both sets of analyses, there was only one package more attractive than a single incentive. Considering the overall chance for spurious significance (30 tests were made), one such result provides no real support for the "more is better" assumption. For the same reason, the fact that package (1+3) was more attractive than package (1+2+3) provides no real support for the opposite assumption.

In order to make the most severe test of the limits of generalization we compared all singles (not only the best one) against all double and triple packages in which they were contained. Of 30 such comparisons, doubles were significantly higher than singles in 12 cases, and no different from singles in 18 cases. Comparing singles and triples in 15 cases, triples were significantly higher than singles in three cases and no different from singles in 12 cases. Even when the least attractive single incentives are included in the comparisons, there are no significant differences in 30 of the 45 cases. Considering the significant differences, an important fact is the composition of the packages (i.e., -- the items come from different factors in this iteration). Thus, our generalization is not as sweeping as before, but still a reasonable one.

Effects of Increasing the Absolute Magnitude of Incentives

As was the case in the first iteration, for two pairs of the single incentive items another approach was taken. We assessed whether increases in the absolute magnitude of single incentives would enhance the attractiveness of the Navy. In this study, the same people rated each item in each pair, whereas different subgroups (equivalent through randomization) rated only one item of each pair in the first study. Thus, the present comparisons are within-group tests as opposed to the previous between group tests. There was no difference in attractiveness between a one-time $1,000 enlistment bonus and an enlistment bonus of $1,000 a year for the first three years. A bonus for good

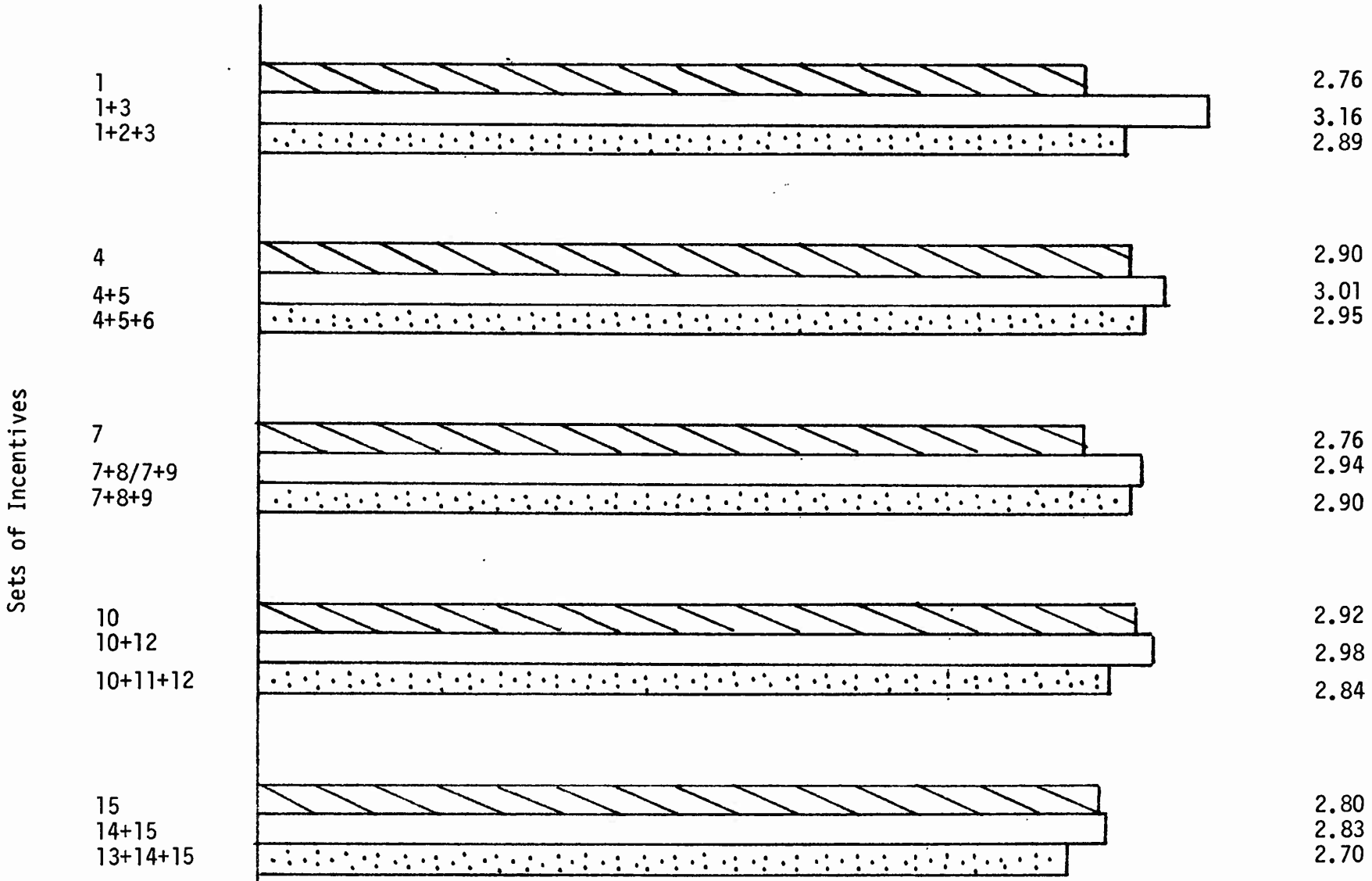

Figure 14. Experiment II -- Comparative attractiveness of the best single incentive, the best double incentive package which includes the best single incentive, and the triple incentive package within each set.

performance of 10% of base pay was more attractive than a performance bonus of 25% of base pay ($p < .02$). The results are shown in Figure 15. These two findings indicate, again, that increases in the absolute magnitude of incentives are not better. The latter finding further reinforces the apparent risk that "more can be worse."

Differences in Attractiveness of Incentives as a Function of Sociodemographic Status

Tests were once again made of differences in attractiveness of the single incentives and incentive packages as a function of four sociodemographic variables through application of least-squares techniques (Overall and Spiegel, 1969).

Table 6 shows the marginal means for all of the significant effects. (The marginal means also are adjusted for confounding attributable to the other factors.) The mean values 1, 2, 3, 4, 5 correspond to the response alternatives a, b, c, d, e respectively. The higher the means, the more attracted one is to the Navy. Selective appeals to different target groups could be developed on the basis of the findings.

Figure 16 shows that people from the lowest income families were decidedly less attracted than the other income groups by the double package that includes the opportunity to get out after three months plus performance bonus up to 25% of base pay.

The remaining demographic effects were all due to educational status. Figure 17 shows the findings for the package of a performance bonus up to 25% base pay plus 2 years of college after four years of service. The high school and college students found this combination more attractive than did the non-school youth.

Figure 18 shows the findings for the package of $1,000 enlistment bonus plus 2 months annual leave for education or social service. The students, especially those in high school found this combination considerably more attractive than did the non-school youth.

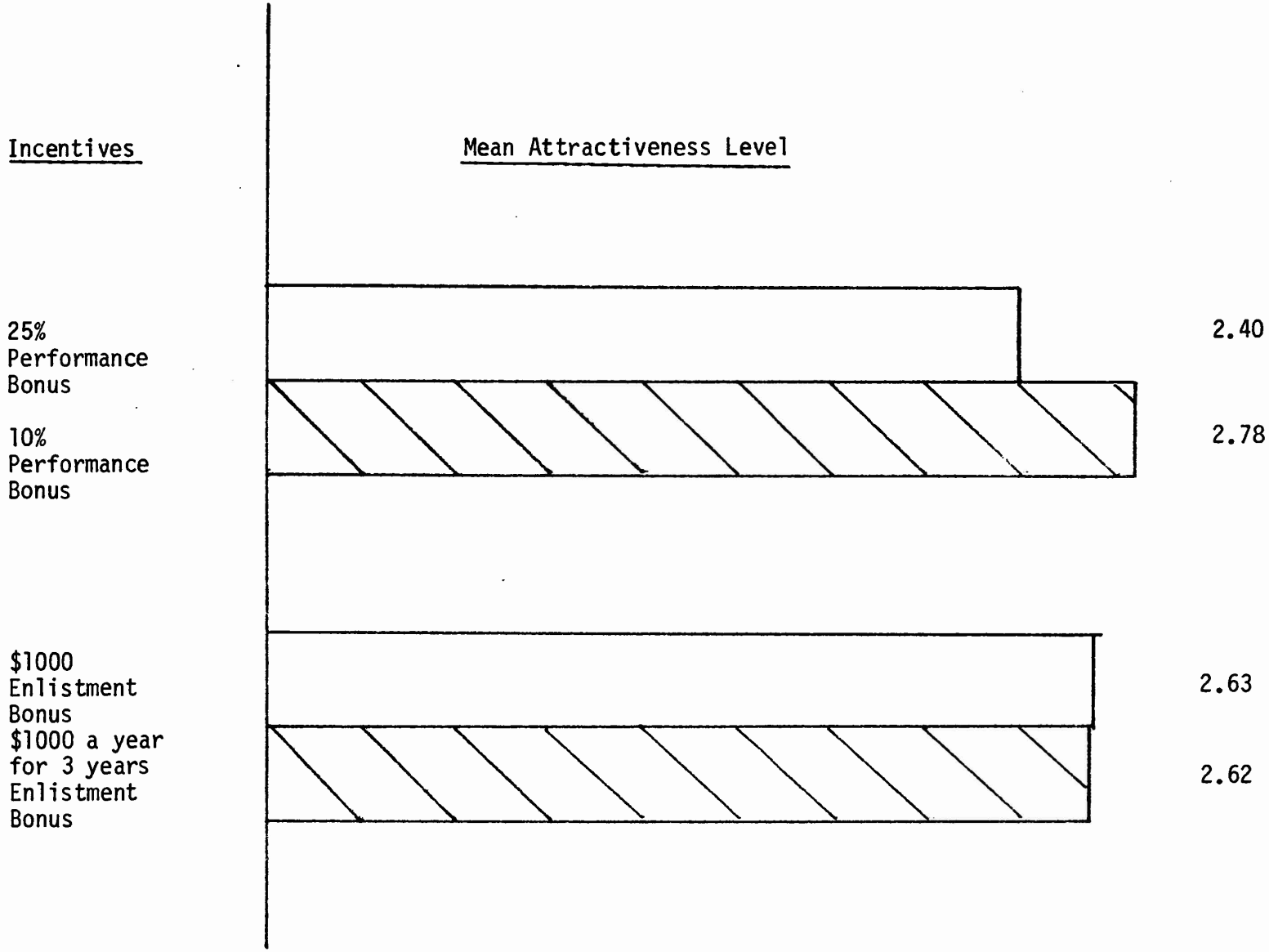

Figure 15. Experiment II -- The effect of increases in the absolute magnitude of single incentives on attractiveness.

Table 6

Experiment II -- Marginal Means of all the Significant Effects

Item 1+2

Income

$p < .026$

< $8,000	- 2.3
$8,000 - $14,999	- 3.3
$15,000 - 19,999	- 3.1
$20,000 and over	- 2.9
Don't know/Refused	- 3.2

Item 2+3

Educational Status

$p < .053$

H. S. Students	- 3.1
Non-School Youth	- 2.3
College Students	- 3.0

Item 5+6

Educational Status

$p < .002$

H. S. Students	- 3.5
Non-School Youth	- 2.4
College Students	- 3.1

Item 8+9

Educational Status

$p < .031$

H. S. Students	- 3.4
Non-School Youth	- 2.5
College Students	- 2.8

Item 14+15

Educational Status

$p < .006$

H. S. Students	- 3.1
Non-School Youth	- 2.1
College Students	- 2.6

Item 1+2+3

Educational Status

$p < .031$

H. S. Students	- 2.5
Non-School Youth	- 2.2
College Students	- 3.0

Table 6 (continued)

Item 1 + 2	opportunity to get out after three months plus performance bonus up to 25% of base pay
Item 2 + 3	performance bonus up to 25% of base pay plus 2 years of college after four years of service
Item 5 + 6	$1,000 enlistment bonus plus 2 months annual leave for education or social service
Item 8 + 9	bonus for completed courses to increase job skills plus job training and career counseling for Navy wives
Item 14 + 15	performance bonuses up to 10% of base pay plus choice of sea duty first then training or vice versa
Item 1 + 2 + 3	getting out after three months plus performance bonus up to 25% of base pay plus 2 years of college after four years of service

#1 + 2 - opportunity to get out after three months
plus performance bonus up to 25% of base pay

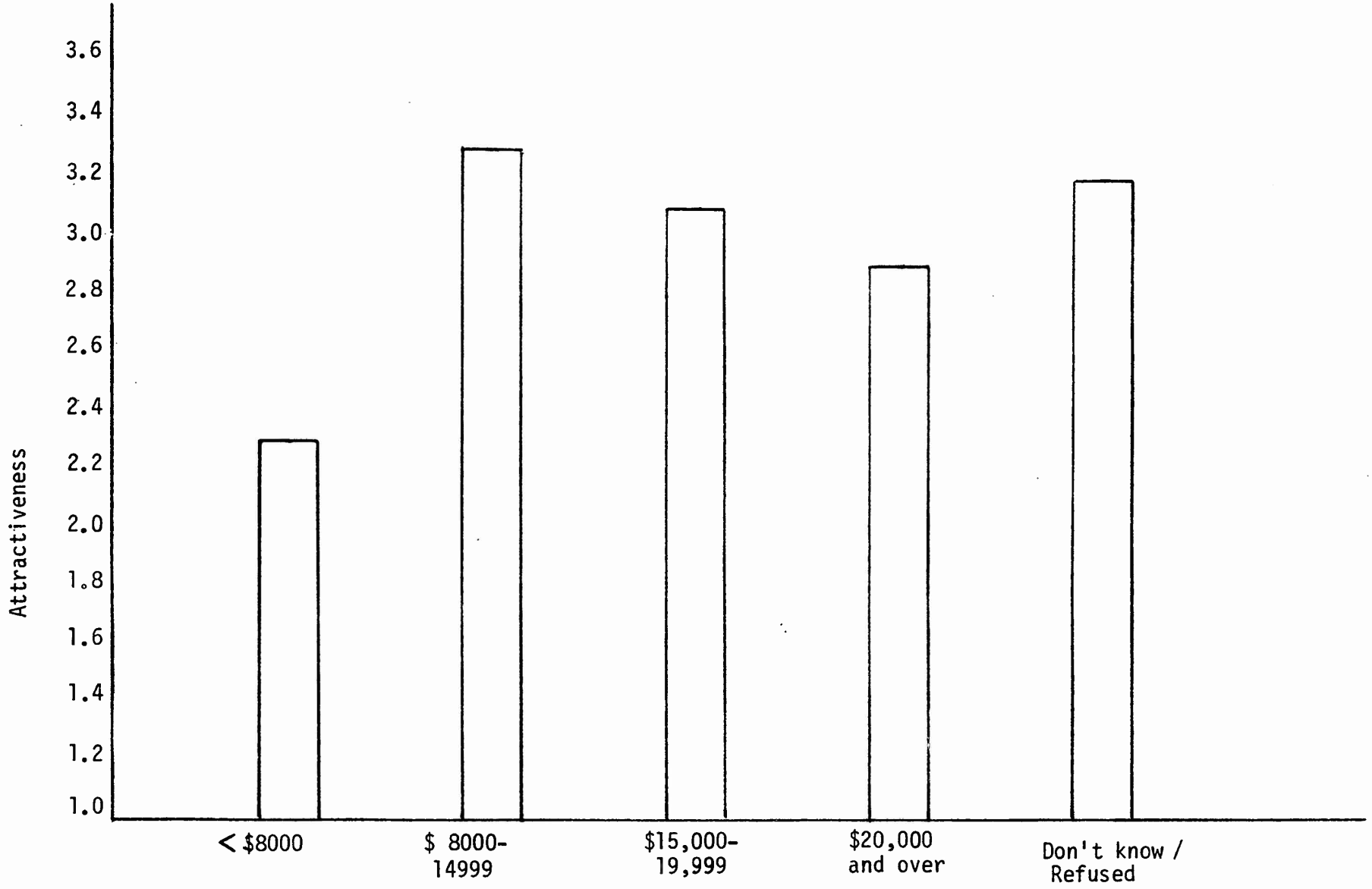

Figure 16. Experiment II -- Comparative attractiveness of double package (1+2) across family income levels.

#2 + 3 - performance bonus up to 25% of base pay
plus 2 years of college after four years of service

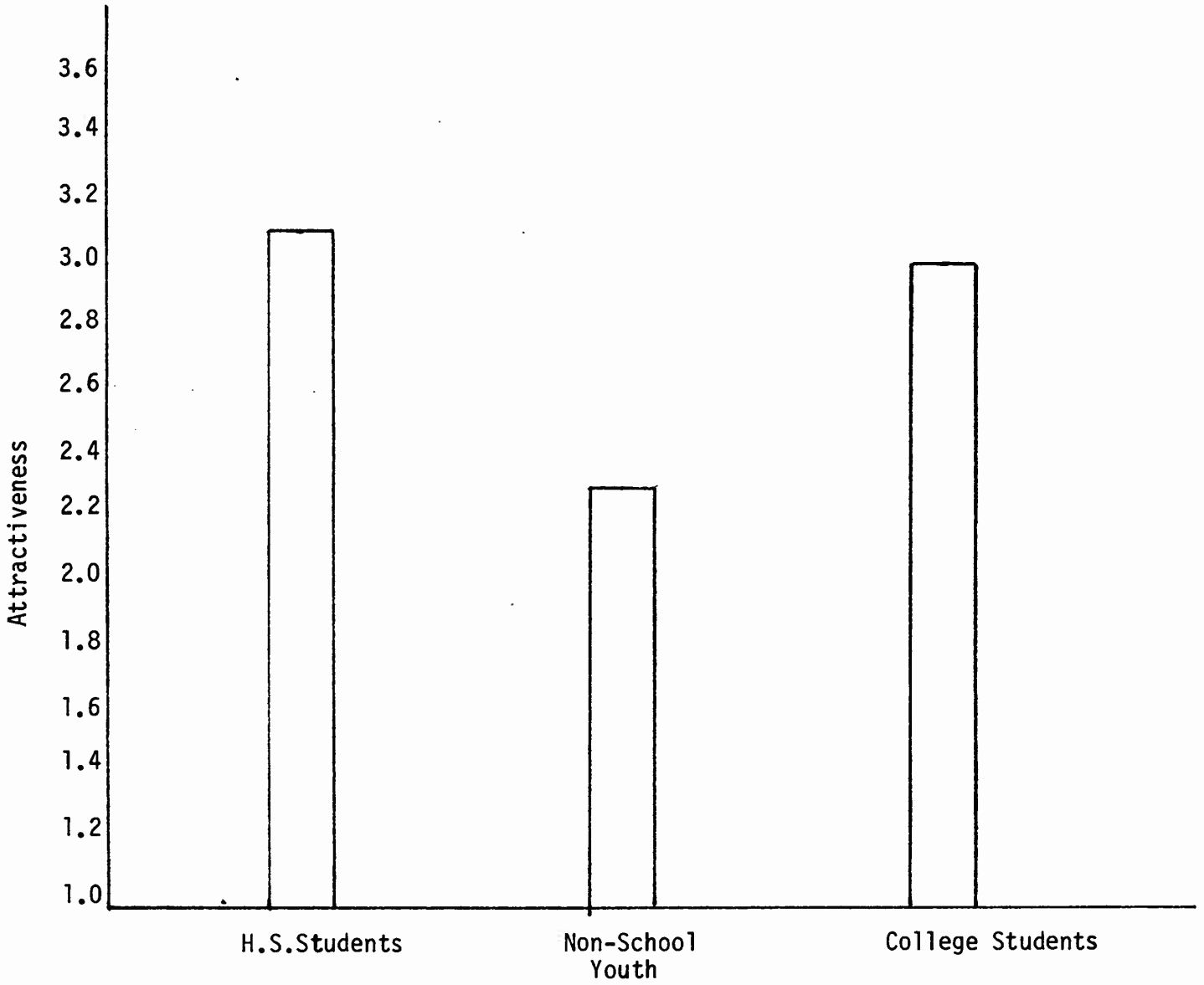

Figure 17. Experiment II -- Comparative attractiveness of double package (2+3) for different educational categories

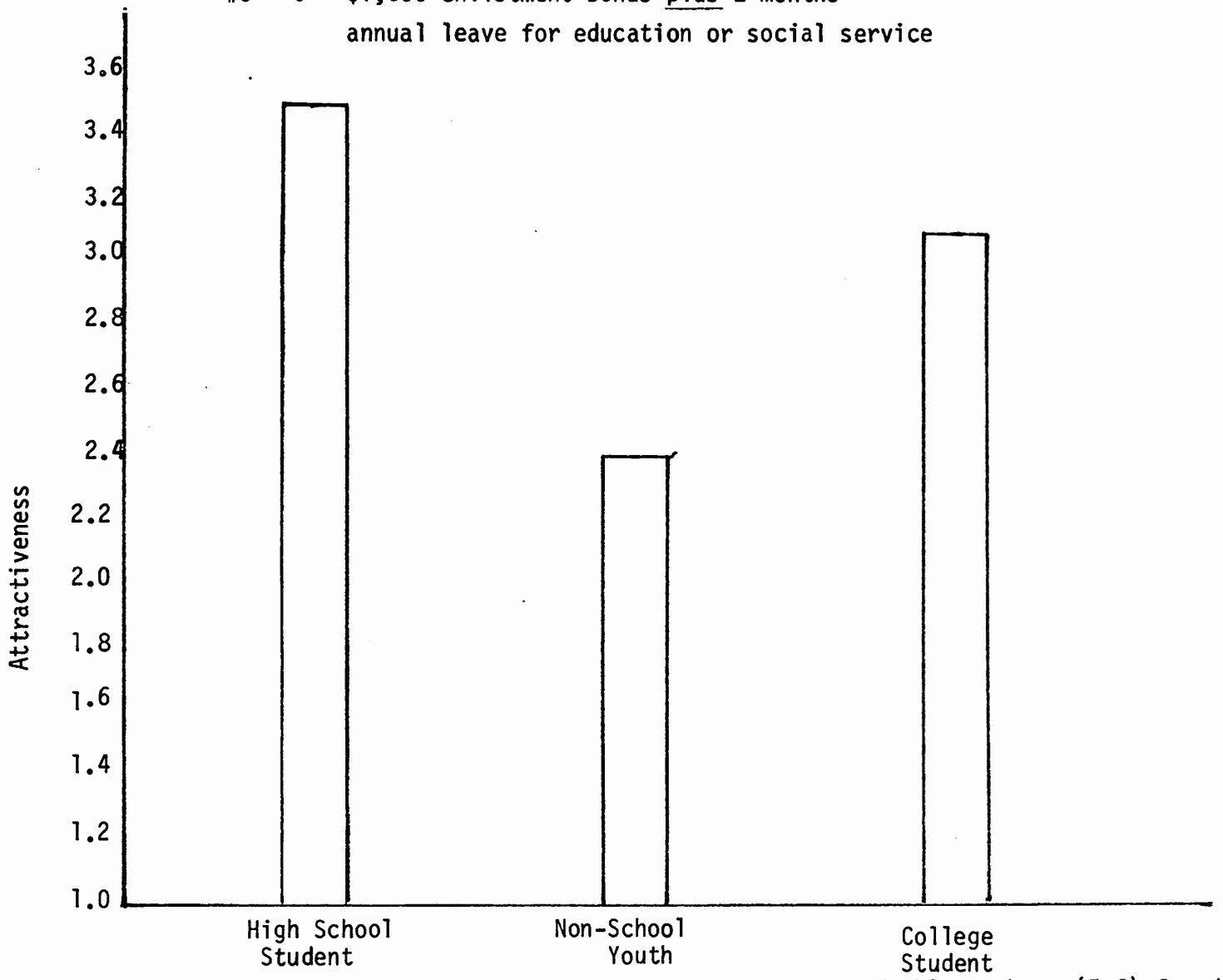

Figure 18. Experiment II -- Comparative attractiveness of double package (5+6) for different educational categories

Figure 19 shows the results for the package of a bonus for completed courses to increase job skills plus job training and career counseling for Navy wives. The high school students found this combination more attractive than did the other two groups.

Figure 20 shows the findings for the package consisting of performance bonuses up to 10% base pay plus choice of sea duty first then training or vice versa. The students, particularly those in high school found this incentive package more attractive than did the non-school youth.

Figure 21 shows the findings for the triple package of getting out after three months plus performance bonus up to 25% base pay plus 2 years of college after four years of service. The college students were more attracted to this combination than the other two groups.

Relative Attractiveness of Single Incentives

Table 7 rank orders the single incentives by their overall attractiveness--highest to lowest. The sampling design does not allow statistical comparisons of each item with every other item. The items were split-up between three subsamples to meet practical constraints on the number of responses required of each respondent and on the total size of the sample. Simultaneous application of within-group and between-group modes of analysis is, of course, not possible. However, each subsample responded to a set of items each representing the same incentive factor. In this iteration, then, a comparison of average attractiveness for each set of single incentives was meaningful. The set of fate control items had the highest mean and was more attractive than the set of financial items ($p<.023$). Descriptively, the average attractiveness of the personal/family vocational satisfaction and improvement items was less than the former, but greater than the latter. Neither difference was significant though. In any case, the set of incentives which would provide increased vocational fate control was clearly the most attractive overall.

Items 1, 2, 3, 4, and 5 were used in both iterations. Tests of significance were made to see whether the items changed over time in level of attractiveness. Table 8 compares the means of items 1 through 5 for both iterations. As is apparent, every item had a lower mean on the second iteration. All the differences were highly significant except for Item 4. This could be due to regression effects or time situational effects (or both).

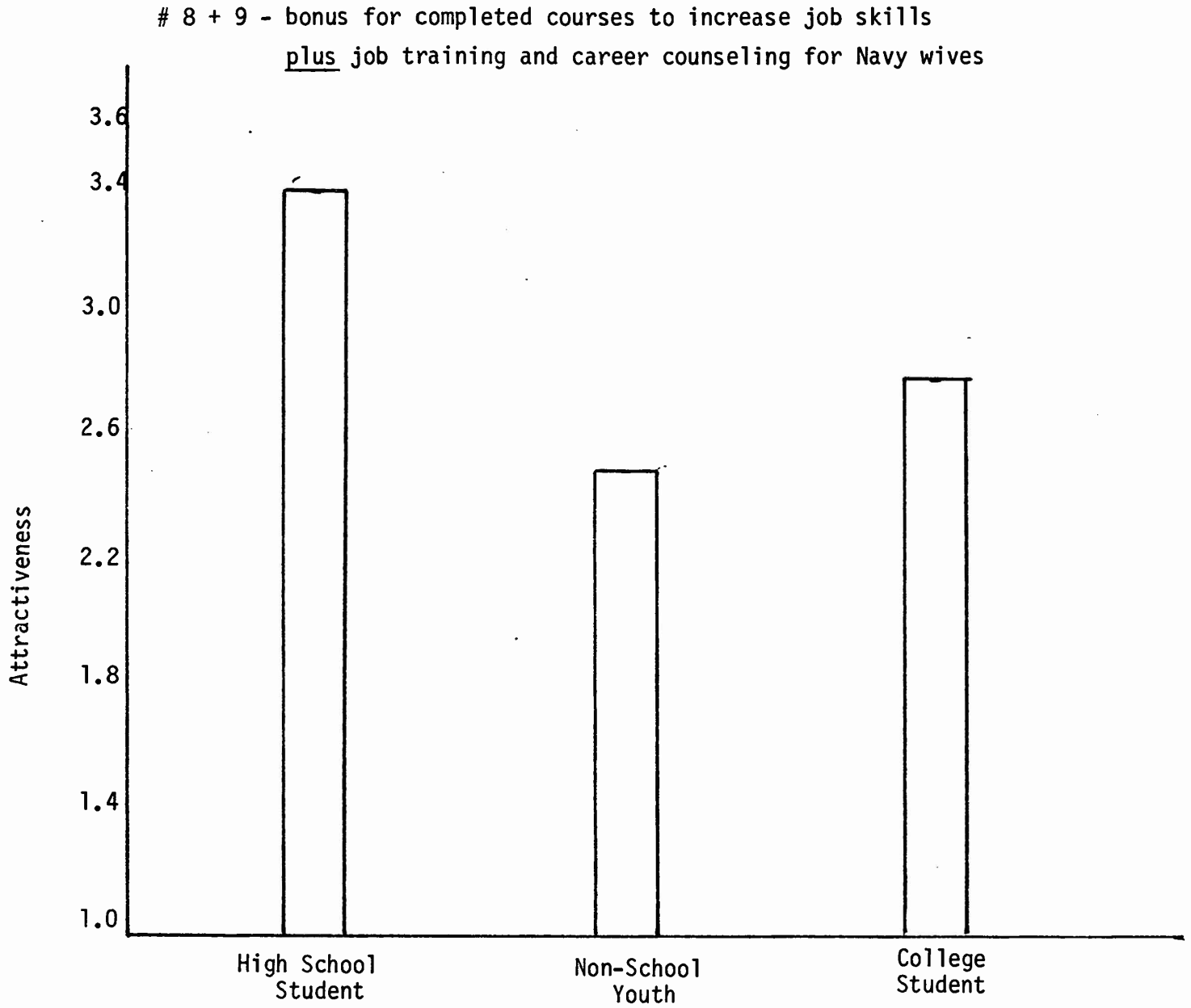

Figure 19. Experiment II -- Comparative attractiveness of double package (8+9) for different educational categories.

#14 + 15 - performance bonuses up to 10% of base pay plus
choice of sea duty first then training or vice versa

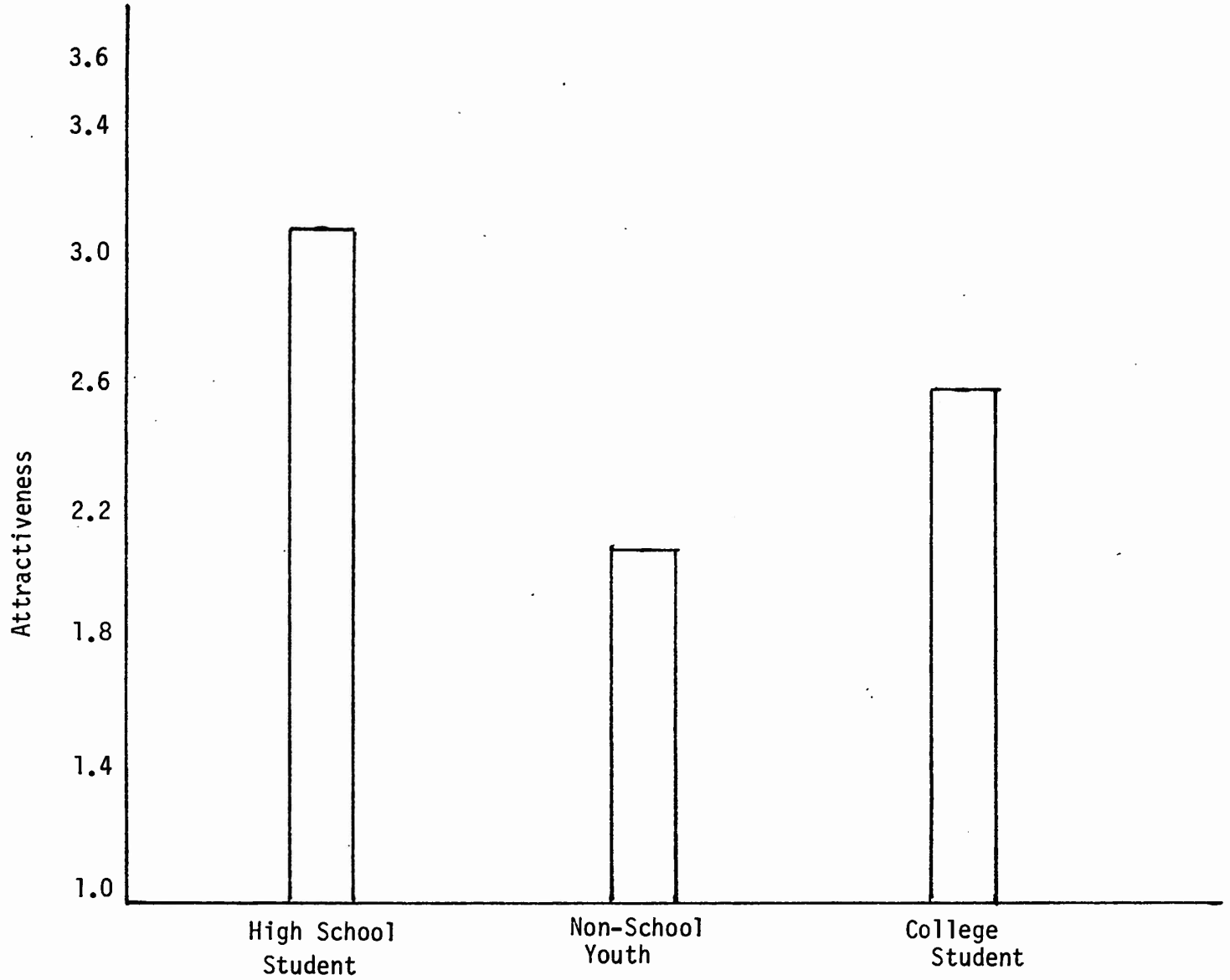

Figure 20. Experiment II-- Comparative attractiveness of double package (14+15) for different educational categories

#1 + 2 + 3 - getting out after three months plus performance bonus up to 25% of base pay plus 2 years of college after four years of service

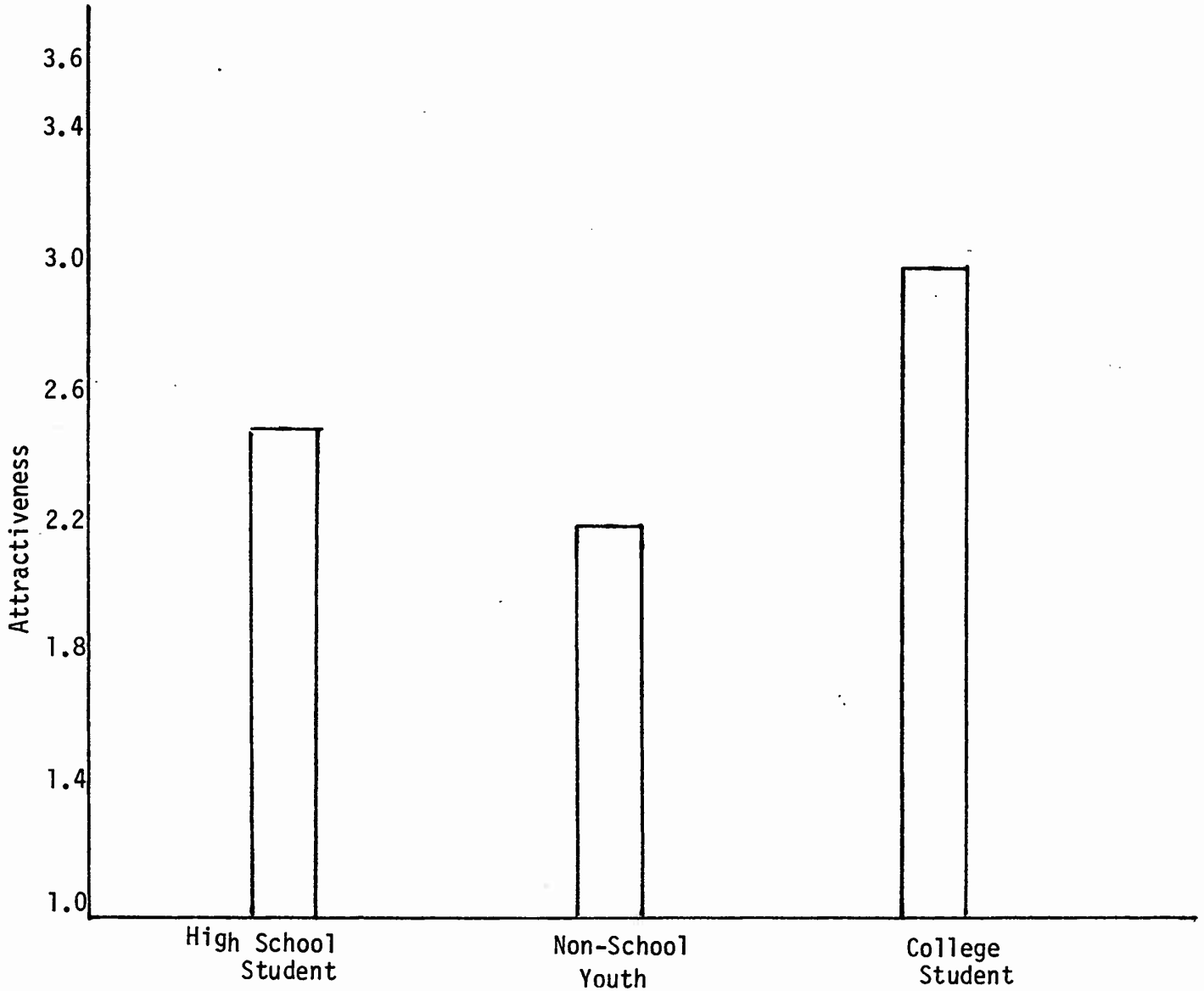

Figure 21. Experiment II -- Comparative attractiveness of triple package (1+2+3) for different educational categories

TABLE 7*

Experiment II -- Overall Means of Each Incentive

Experimental Incentives for Enlistment	Mean Rating
Change job specialty after one year with no loss of pay or benefits	2.92
Choice of home port after two years of duty	2.90
Before enlisting, get free civilian counseling for Navy and civilian jobs	2.83
Choice of sea duty first, then specialized training or vice versa	2.80
**Yearly bonus up to 10% of base pay for exceptional performance	2.78
Get out after three months if not satisfied	2.76
Work two months a year in a civilian job matching your skills	2.76
Reenlist one year at a time after the first enlistment	2.74
Job and career counseling at Navy expense for Navy wives	2.73
Bonuses for approved courses which increase job skills	2.71
Two months leave a year for purposes such as social service	2.70
Two years of college, all expenses paid, after four years of active duty	2.66
***$1000 bonus for enlisting	2.63
***$1000 a year enlistment bonus for first three years of service	2.62
**Yearly bonus up to 25% of base pay for exceptional performance	2.40

*The means and standard deviations for the entire sampling design (Figure 2) are shown in Appendix D.

**The first pair of items for testing the effect of increasing the absolute magnitude of incentives.

***The second pair of items for testing the effect of increasing the absolute magnitude of incentives.

TABLE 8

Comparative Means of Items 1 Through 5 for Iterations One and Two

	Iteration 1	Iteration 2
1. Get out after three months if not satisfied	3.29	2.76*
2. Yearly bonus up to 25% of base pay for exceptional performance	3.12	2.40*
3. Two years of college, all expenses paid, after four years of active duty	3.06	2.66*
4. Choice of home port after two years of duty	3.03	2.90
5. $1000 bonus for enlisting	3.21	2.63*

*Significant difference from Iteration 1 ($p < .05$).

As before, the responses to alternative "e" ("I would think more favorably and would consider enlisting in the Navy") has administrative implications of special interest because the percentage of interviewees who responds with this strong statement gives an immediate estimate of behavioral intention to join the Navy if the given policy were to be adopted. Table 9 shows the percentage who answered "e" for each single incentive and five of the incentive packages. The latter five were included because they were all the packages where the "e" responses reached 10% or better. The value in parentheses for items 1 through 5 are the corresponding percentages these incentives obtained in the first iteration.

The two items with the highest percentage of "e" responses were Item 14 (Performance bonus up to 10% base pay) - 14%, and Item 1 (Get out after 3 months)- 11%. There obviously was a large drop-off in "e" responses from the first to second iteration for items 1 through 5.

Overall, the main thrust of the results replicates the first iteration very well. Although the mean level of attractiveness and percentage of "e" responses seemed to be lower this time, the "more is better" assumption was refuted again. One possible reason for the lower level of attractiveness and lower interest in enlistment shown in the second iteration is the time of year of the survey. The first iteration took place in May when many young men have to seriously consider permanent employment possibilities. The second iteration took place in December, a time when the problem of employment is much more remote for most of them. Hence, the incentives were most likely not as relevant to any of their immediate concerns as they would be for the May respondents.

TABLE 9

Experiment II-- Percentage of Respondents Who Would Seriously Consider Enlisting if Policy Were Adopted *

Item	Percent	Item	Percent
1	11% (25%)	11	7%
2	6% (20%)	12	7%
3	4% (13%)	13	6%
4	5% (15%)	14	13%
5	8% (27%)	15	7%
6	3%	1+3	13%
7	8%	2+3	15%
8	6%	5+6	14%
9	5%	7+8	10%
10	7%	11+12	13%

* The values in parenthese for items 1 through 5 are the corresponding percentages from Experiment I. Items 6 through 15 were newly developed for Experiment II.

DISCUSSION AND IMPLICATIONS

In this discussion we will first consider the findings that appear to have most generality; that apply pretty much to the whole youth population sampled. Then, we will look at those findings that represent differences in impact upon different segments of the population.

More is Better?

The basic question regarding our series of experiments on enlistment incentives was, "Is more better?" In the first iteration, the conclusion was, "more is not better." The second iteration addressed the same question with five repeated and ten new incentives. As we have noted, the general findings were virtually the same. Such a successful replication, of course, leads us to be even more certain about our assertion. Indeed, both iterations also provided evidence that "more is sometimes worse."

In Experiment I, when we compared single, double and triple incentive packages, there was not even one case out of all the tests made where increasing the number of incentives enhanced the attractiveness of the Navy vis-a-vis the value of the best single incentives. Furthermore, there was only one case in Experiment II where a package was more attractive than the best single incentive. This is even more reassuring due to the difference in the nature of the packages as compared to the first iteration. In Experiment II, each item of a package came from a different domain of incentives. Thus, a package provided "more", not only in a quantitative sense but also in a qualitative sense. Experiment I packages all had items from the same domain, and thus provided "more" only in a quantitative sense. It also should be noted that, in both iterations, even the lowest rated single incentive had a mean rating which reflected a mildly positive attitude towards the Navy (a mean greater than 2.4). Thus, when the incentives were combined into packages, there never was included a negatively valued object which might have countervened the additive effect of the double and triple incentive packages.

In both iterations, the most dramatic refutation of the "more is better" assumption came from varying the absolute magnitude of financial incentives. Experiment I showed that a $1000 enlistment bonus was actually preferred over a $3000 enlistment bonus. The evidence from Experiment II was also quite convincing. An enlistment bonus of $1000 was just as attractive as a bonus of $1000 a year for 3 years (i.e. $3000). More significantly, a 10% pay raise for exceptional performance turned out to be more attractive than a 25% raise. This successful replication of varying the levels of bonuses (both enlistment and performance) indicates such findings are not a one-time fluke.

Although one may at first feel that the above results are contrary to "common sense", a number of psychological theories provide possible explanations. Increasing the number or absolute magnitude of certain incentives may lead one to the conclusion that the Navy is so unattractive that it must resort to heaping bribe upon bribe to trick you into joining. Incentives are not a "bag of goodies" to which the Navy could keep adding until it becomes an irresistible inducement to enlist. The implication is rather clear that the utility of this type of incentive manipulation strategy approaches its ceiling quite rapidly. In fact, increasing some incentives beyond this ceiling may actually drive young men away from serious consideration of a Naval career.

What might be further reasons for the "more is sometimes worse" findings?

As just implied, there may be a serious credibility gap created. Young men may gain the impression that if the Navy (which is part of the "Establishment") is offering such good-sounding incentives, there must be some really devious catches built into them. In plain language, "It is too good to be true."

A second possibility may be that the high incentive levels violate an equity norm, thus becoming counterproductive. This norm may be a general social equity norm (cf. Adams, 1965), a personal equity norm as

to what is suitable for the self (Korman, 1970, 1971) or both. For example, equity theory research has shown that people tend to work harder when they believe they are being overpaid. If the higher incentive levels are seen as overpayment, a person could feel the implicit need to demonstrate unusual effort if he were to join the Navy. This prospect could very possibly dampen one's enthusiasm for enlisting.

A third possible explanation is that these increased incentives may be perceived as grossly manipulative. This would easily lead to feelings of resentment, negative affect, and "reactance" against the manipulator because one's feelings of free choice are being violated (Brehm, 1966). In fact, Brehm's theory predicts that if a person does indeed feel that his freedom of choice is threatened, he would be even less likely to enlist than without the prospect of such incentives. (In this way, he psychologically reestablishes his freedom of choice.)

These explanations are not mutually exclusive, and in fact, can be integrated easily. Further research needs to incorporate mechanisms to tease out which reasons are the most plausible.

Relative Appeal of Different Types of Incentives

In general, the most attractive items in both iterations emphasize the importance of both perceived "fate control" and "traditional incentives" as significant factors influencing potential Naval career motivation. The thing to remember is that interest in equitable traditional incentives has not waned, but that they are not enough by themselves. A degree of self-determination is expected as well.

Today's youth seems to place a high value upon playing an active role in determining the shape of his present and future activities and life style. His view of the satisfactions offered by life in military service, are strongly conditioned by what he has seen and learned, and come to expect in civilian life. He appears less inclined than his predecessors to passive acceptance of arbitrary constraints upon his

personal life and vocational choices as a condition of employment. Under zero draft conditions, he sees little reason to give up freedoms he would expect to have as a civilian, unless there is a counterbalancing quid pro quo that meets some of his other needs, while perhaps recognizing that no absolute freedom exists under either civilian or military conditions. This degree of realism may be inferred from the previously mentioned fact that in both iterations the mean ratings of the experimental incentives were slightly positive as a minimum; there was no indication of a pervasive anti-Navy bias leading respondents to discount many or all incentives indiscriminately.

It should be emphasized that we do not have here an "either-or" condition. Lack of fate control cannot be redeemed by tangible incentives; nor can increased fate control completely supplant the traditional incentives. Though we shall see shortly that different incentives may differ in relative strength for different socio-demographic subgroups, both of the major incentive types are important to all subgroups.

Differences in Attractiveness of Incentives as a Function of Socio-demographic Status

Experiment I. The differential attractiveness of certain incentives as a function of socio-demographic variables does indicate that the responses were made with some discrimination. As was the case in an earlier study of junior college students (Korman et al., 1973), the lower socio-economic group tended to be more attracted by financial incentives and other kinds of incentives that can be seen as having the potential to boost their upward mobility. As an example in the present data, we note that the only package which was significantly more attractive to blacks than whites was a $3000 enlistment bonus plus special job training to start civilian life plus 2 year enlistment (Items 1+2+3). This result seems to be the sharpest illustration of the high appeal of tangible incentives to those at the lower end of the socio-economic continuum. (However, it should be pointed out that the number of blacks in the sample was quite small and hence questionably representative), and that the results are as well explained by class as by racial background.

We can point out a few other examples of preferences related to socio-demographic variables. College students were particularly attracted by a package of better retirement pay plus pay equivalent to civilian jobs, and a package of educational leave plus choice of home port. High school students on the other hand, were more attracted by such single incentives as opportunity for changing job specialities, reduced educational requirements for officer training programs, and 50% retirement pay after fifteen years of service.

Experiment II. There were also some demographic differences in the second iteration. The lowest family income group was less attracted to the package that offered a chance to get out after three months plus a 25% performance bonus. The high school students were more attracted than the other educational status groups to four of the double packages. Each such package included a bonus as one of its items. High school students may be a good target group to attract with such packages. The college students were more attracted by the triple package of option to get out after three months plus 25% performance bonus plus two years college after four years service. Also noteworthy is the fact that on all of these packages the non-school youth were the least attracted groups. Apparently, either the non-school youth are "turned-off" by the service, or (for the "drop outs" among them) by any of the achievement oriented goals that society offers, or these sets of incentives do not include the appeals attractive to them. Further research would be needed to determine what is needed to attract the non-school youth into a military career.

Related Research

This report has pointed out a number of findings having both general theoretical interest and particular practical implications for the Navy, generated by our two samplings of the attractiveness of various experimental enlistment incentives to 16 to 22 year old civilian American males.

Work currently in progress as other subtasks of our research programs are expected to shed more light on the reliability and generalizability of the results, interpretations and implications reported here.

Similar incentives for reenlistment have been included in questionnaires sent to two samples of men who are already serving in their first enlistment in shortage ratings. Single incentives and double incentive packages were also compared on their influence upon reenlistment intention. The major conclusion was that more is also not better for reenlistment incentives. (Frey, Goodstadt, Romanczuk, and Glickman, 1974).

Fisher and Rigg (1974) investigated the endorsement of a set of single enlistment incentives presented in the June and November 1972 Gilbert Youth Survey. The claim was made that, "more may well be slightly better" (p. 54). This conclusion was mainly based on the fact that 24% of the sample endorsed a $3000 bonus as a likely enlistment inducement versus a 21% endorsement of a $1000 bonus. Inspection of the exact wording of each incentive suggests alternative explanations. The $3000 bonus also included the proviso of enlisting in some skill that is in short supply. This is a different context from the simple $1000 bonus for it also implies the potential recruit is someone above the ordinary in that he is being asked to enlist in a critical skill category. An added implication is that the enlistee would get valuable training to enlist for this $3000 bonus. The $1000 bonus statement actually read, "A large bonus for enlisting (for example: $1000)." This is vague for the respondent because the actual bonus could end up being much lower (or higher) than the $1000 example. For the foregoing reasons, it is very problemmatical that the Fisher and Rigg (1974) results can be taken to contradict the conclusions of our present study.

Operational Implications

For the Navy, two major operational implications may be read in the results obtained so far. First, there is demonstrated the potential utility of a more diagnostic approach to the design of incentives and

the development of flexible recruiting programs adaptable to various target groups and to changing conditions, based upon continuing feedback from empirical tests and evaluations. Second, is the indication that a viable strategy for the competitive appeal of the Navy under all-volunteer conditions cannot rely predominately upon tangible incentives. Serious consideration must also be given to experimenting with organizational changes that provide a psychological climate that offers men a larger measure of personal fate control in their vocational life. Today's youth is still responsive to traditional incentives, but this is not enough. They need to be able to perceive that a commitment to the Navy does not mean that you are "locked-in". They need to be able to see that many of the career options available when you are a civilian are also available when you are a sailor, plus maybe a few that are not available to civilians. Most particularly the Navy needs to show that it too allows a person to take into account the possibility that as he gains experience and maturity, as he learns more about himself and the world about him after he joins the Navy, he can correct the course he set out on as a "green kid"--with the anticipation of help rather than resistance from the Navy. After all, encouraging such "course corrections" greatly benefits the Navy because it results in people who demonstrate increased productivity, enhanced career motivation, and a higher probability of reenlistment.

Suggestions for Administrative Experiments

It will no doubt be recognized that the results of this study apply to an "as if" condition, because the respondents have been asked in essence, "What if?" The incentives offered were not "real". For the most part you could not actually contract for them with your nearest Navy recruiter. The degree of validity of our interpretations and recommendations, of course, can be ultimately established only by administrative experiments in which such ideas for establishing incentives and making organizational change are put into effect operationally (usually on a pilot basis first) and their effectiveness measured in actual practice.

From the beginning of our present career motivation research program, we have kept in mind the Navy's aim of translating the research findings into administrative action. And so we will devote the last section of this report to a few suggested "action packages". The number is deliberately limited, and the order of presentation is not meant to constitute a recommended priority. In each instance it is assumed that the administrative experiment would have an evaluation component built into it.

Pre-career Counseling. We have pointed out elsewhere that the typical 18 or 19-year old does not have a clear idea of his vocational objectives. He has not usually established long-term career goals. He is still seeking information and experience, and expects that more often than not the uncertain future will hold several changes in whatever tentative plans or alternatives he may be considering. The Navy recruiting prospect is not much different from other young men, except perhaps in one salient regard. He is confronted with a decision that is binding upon him for three or more years--under conditions perceived as highly ambiguous, he is called upon to surrender a large measure of self-determination or fate control.

We have noted also that it appears that the youth who is drawn to the Navy, most often has pretty much made up his mind before becoming actively engaged in the recruiting process -- that the Navy recruiter does not exercise much positive influence on the basic decision to apply for enlistment. On the other hand, one must consider that a substantial number of recruiting prospects may not permit themselves to be exposed to the recruiting process because of the uncertainty they feel, coupled with the implicit feeling that you have to be ready to accept enlistment as a highly likely outcome of any formal contact with a recruiter: it is the recruiter's obligation to persuade you to enlist if you meet eligibility standards.

This suggests the desirability of the Navy creating a pre-career counseling program essentially separate from the recruiting process. In brief, we would envisage a vocational counseling service conducted by qualified civilian professionals that would offer free to youth of

appropriate ages, without obligation to enlist, an opportunity to objectively review their occupational abilities and opportunities on an individualized basis both for civilian employers and in the Navy. It is hypothesized that this would lead many young people to consider opportunities for themselves in the Navy, who might not otherwise open themselves to that alternative, because, (1) independent professionals would be perceived as having competence and as being committed to the counselee's welfare to a greater extent than recruiters could exercise; (2) parents are inclined to view vocational counseling as a good thing for their children; (3) the opportunity to obtain better vocationally related information would reduce the uncertainty and attendant lack of self-confidence that may make people reluctant to consider the Navy as an employer and to engage in further exploration with its employment office (the Recruiting Station); (4) the process would engender feelings of greater individual self-determination and fate control; (5) the image of the Navy as an organization having special concern for a person's individual welfare and opportunities could be directly experienced; and (6) initial exposure to fuller explanation and occupational information would lead to less expectancy-disconfirmation by those who do enlist and would consequently provide more positive feedback from sailors to their civilian cohorts.

This program would in no way be intended to encroach upon any of the current prerogatives of the recruiter. It is envisioned as providing supplementary help in an area where a recruiter usually has no special expertise; also, very importantly, it should greatly expand the potential pool of enlistees.

Tangible Incentives. The most promising incentives, roughly speaking, reflect the same dimensions that are considered to be important in civilian jobs. The Navy is currently using reenlistment bonuses, but not bonuses for enlistment. The Army and Marine Corps are giving bonuses for enlistment in combat arms. Since the data upon which this report is based are from civilian youth, their implications bear more upon the recruiting than upon the reenlistment situation.

In general, any Navy experimentation with bonuses should be based upon careful testing of alternatives. From the evidence of this study, at least, "more is better" is a poor operating principle for attempting to recruit youth into an organization (i.e., the Navy) which has had to compete for personnel on a voluntary basis. In Experment I, the sharp dropoff in strong enlistment interest between the $1000 and $3000 bonus (27% to 8%) that we have reported, indicates that indiscriminate increases in the value of incentives can be quite dysfunctional. Financial incentives that are too high could drive people away (besides costing the Navy inordinate amounts of money). The means for operationally testing the utility of financial incentives is obvious--implementation accompanied by comparison of "before" and "after" behavioral indices and/or by comparison of results with "experimental" and "control" groups.

Diagnostic Application of Appeals to Target Populations. The analyses we have performed of socio-demographic differences in response do indicate that specifically targeted incentives may produce better results than appeals that are directed at the undifferentiated mass. Thus, a reduction of educational requirements for officer training programs, linked with the use of other selection standards to maintain qualitative levels, might be aimed at both men in and out of service to attract those who are in junior college or the first two years of four-year institutions (or have completed the equivalent), perhaps in conjunction with a prescribed minimum period of enlisted service. The three month out option might be aimed at high school seniors who found this incentive to be very attractive.

Other results of these analyses suggest that under some circumstances assembling multiple incentive packages may have value. However, their possible usefulness does not appear to exist in the sense that "more is better", but rather lies in the fact that many of the socio-demographic effects are associated with response to these packages. For example, further research appears to be in order to further pin-point the tangible incentives that seem to be most meaningful to the less advantaged young members of society, and to design appeals through various media and to train recruiters to employ such information with greater diagnostic insight.

Performance Bonuses. As a final illustration of an action package idea, we see intriguing possibilities in the use of a performance bonus stemming from the relatively high attraction reported for Item 11 in Experiment I (Performance bonus up to 25% of base pay). In Experiment I, twenty percent of the civilian youth who were interviewed said that they would seriously consider enlisting if that incentive existed, making it among the top three appeals by that measure. Explicit recognition of individual performance of unusual qualities is generally considered to be a desirable element in most wage and salary plans. The commitment to this aspect of the work ethic still appears to be strong among young people. However, no provision for individualized reward for quality performance is found in our military services. Enlisted proficiency pay (Pro-pay) increments are granted to categories of personnel on the basis of the occupational specialties in which they are engaged; and the needs of the service dictate which groups are to be granted this bonus.

One procedure by which a performance pay system might be introduced is to mate it with Pro-pay. It can be presumed that budgetary considerations will enter into determination of the feasibility of inaugurating performance pay. Therefore, it is suggested that part of the budgetary allowance now assigned to Pro-pay might be reallocated to performance pay. That is, the number of ratings and people eligible for Pro-pay could be cut back to free funds for performance pay.

It should also be pointed out that it would be possible to implement performance pay on a selective basis rather than across the board. Employing a rationale like that governing Pro-pay, application could be restricted to certain groups, and these could be changed from time to time as organizational requirements dictate.

An attractive feature of the performance pay concept is that it does not entail guarantees to individual recruits. Furthermore, though we only have data demonstrating a strong appeal among civilians, the nature of

this concept would argue, subject to obtaining further confirmatory evidence, that it is an incentive that would have impact both for recruiting and reenlistment purposes.

These do not represent the limit of specific operational implications that might be derived from our findings. It is hoped that they stimulate readers to generate additional ideas of their own.

CONCLUSION

The consistency of results from both iterations enables us to briefly summarize the principal findings:

1) Increasing the number of different enlistment incentives offered does not increase the attraction of the Navy for young men--double or even triple incentive packages are no better than single incentives.
2) Increasing the absolute value of tangible incentives beyond a critical point either has no effect on likelihood of enlistment or may even decrease the attraction of enlistment in the Navy.
3) The opportunity to exercise a greater degree of fate control in one's vocational life represents an influence that is equal to or stronger than the appeal of traditional tangible incentives.
4) The Navy needs to target its enlistment incentives--different incentives attract different demographic groups.

In other words, the viability of simplistic recruiting strategies based primarily upon the "economic man" model are highly suspect. There is need for more experiments to be conducted in advance of general implementation of incentive programs in order to provide comparative tests of the effectiveness of specific kinds of incentives, at specific levels, for specific population groups. This is needed in order to avoid costly nonproductive or counter-productive recruiting efforts, as well as to broaden the pool of men who might be drawn to the Navy as a career.

REFERENCES

Adams, J. S. Inequity in social change. In L. Berkowitz (Ed.), Advances in experimental social psychology. Vol. 2. New York: Academic Press, 1965.

Brehm, J. W. A theory of psychological reactance. New York: Academic Press, 1966.

Deci, E. L. Intrinsic motivation, extrinsic reinforcement, and inequity. Journal of Personality & Social Psychology, 1972, (Apr), Vol. 22 (1), 113-120.

Fisher, A. H., Jr., & Rigg, L. S. The endorsement of enlistment incentives. Alexandria, Va.: Human Resources Research Organization, 1974.

Frey, R. L., Jr., Goodstadt, B. E., Romanczuk, A. P., and Glickman, A. S. Reenlistment incentives: More is not better in the fleet either. Washington, D.C.: American Institutes for Research, 1974.

Gilbert Youth Research, Inc. and Human Resource Research Organization (Hum RRO), Attitudes of youth toward military service: Results of a national survey conducted May, 1971. Alexandria, Virginia: Hum RRO, 1972.

Glickman, A. S., Goodstadt, B. E., Korman, A. K., & Romanczuk, A. P. Research and development for Navy career motivation programs in all-volunteer condition: I. A cognitive map of career motivation. Washington, D. C.: American Institutes for Research, 1973.

Johnston, J. & Bachman, J. G. Youth in transition: Young men and military service, Vol. 5. Ann Arbor, Michigan: Institute for Social Research, University of Michgan, 1972.

Korman, A. K. Expectancies as determinants of performance. Journal of Applied Psychology, 1971, 55, 218-222.

Korman, A. K. Toward a hypothesis of work behavior. Journal of Applied Psychology, 1970, 54, 31-41.

Korman, A. K., Goodstadt, B. E., Glickman, A. S., & Romanczuk, A. P. An exploratory study of enlistment incentives among junior college students. Washington: American Institutes for Research, 1973.

Overall, J. E. & Spiegel, D. K. Concerning least squares analysis of experimental data. Psychological Bulletin, 1969, 72, 311-322.

APPENDIX A

APPENDIX A

Instructions to respondents. The following instructions were read to each respondent by the interviewer:

Here are a few changes that might be made in the Navy (PRESENT QUESTIONS). Please tell me what effect the introduction of these changes would have on your interest in the Navy. Pick one of these five statements that best reflects your feeling about each set of incentives (PRESENT RESPONSE ALTERNATIVES).

Incentive statements. The following comprise the incentive statements presented in various combinations for administration to respondents:

1. The Navy would give a person a bonus of $3,000 for enlisting.
2. The Navy would offer special job training after a person completed active duty, to help him get started in civilian life.
3. A person could enlist in the Navy for two years, instead of three or four years.
4. A person would be allowed to retire from the Navy and receive half pay after fifteen years instead of twenty years of service.
5. The pay and benefits for Navy jobs would be made about the same as pay and benefits for similar civilian jobs.
6. After twenty years of service, a person would be allowed to retire from the Navy and receive three-fourths pay instead of half-pay.
7. For each year of Navy service, a person could accumulate two months of educational leave with pay.
8. After the first two years of duty, the Navy would guarantee a person his choice of a home port for at least one year.
9. After one year in the Navy, a person could change his job specialty.
10. The Navy would assign women to duty aboard most ships.

11. In the Navy, a person could receive a yearly bonus of up to 25% of his base pay for exceptionally good performance.

12. The Navy would make pay for sea duty substantially higher than for shore duty.

13. A person who was not satisfied could get out of the Navy after three months, with no strings attached.

14. The Navy would reduce the educational requirement for officer training programs from four years to two years of college.

15. Enlisted men would be paid by the government for four years of college, including living expenses at the school of their choice, after completing four years of active duty in the Navy.

16. Enlisted men would be paid by the government for two years of college, including living expenses at the school of their choice, after completing four years of active duty in the Navy.

17. The Navy would give a person a bonus of $1,000 for enlisting.

Response alternatives. The following information was printed on a card and given to the interviewee to enable him to select a response:

Indicate what effect these changes would have on your interest in the Navy, by choosing a, b, c, d, or e.

a. I would think less favorably of the Navy, if this change were introduced.

b. I would think neither more or less favorably of the Navy, if this change were introduced.

c. I would think more favorably of the Navy, if this change were introduced.

d. I would think more favorably of the Navy, and would try to get more information about Navy programs, if this change were introduced.

e. I would think more favorably and would seriously consider enlisting in the Navy.

APPENDIX B

APPENDIX B

Subsample A	Mean	Standard Deviation
1	2.81	1.03
4	2.60	1.05
7	2.88	1.02
10	2.93	1.13
13	3.29	1.22
16	3.06	1.14

Subsample B		
2	2.95	1.16
5	2.76	1.12
8	3.03	1.13
11	3.12	1.24
14	2.71	1.31
17	3.21	1.37

Subsample C		
3	2.88	1.09
6	2.93	1.06
9	2.76	1.04
12	2.70	1.03
15	3.03	1.14

Subsample D		
1+2	2.89	1.01
4+5	2.82	.93
7+8	2.88	.95
10+11	2.94	1.07
13+14	3.30	1.11

Subsample E	Mean	Standard Deviation
2+3	2.62	.80
5+6	2.65	.86
8+9	2.57	.85
11+12	2.54	.93
14+15	2.60	1.02

Subsample F		
1+3	2.93	1.07
4+6	2.79	1.02
7+9	3.07	1.05
10+12	3.22	1.18
13+15	3.51	1.18

Subsample G		
1+2+3	2.94	.89
4+5+6	2.72	.92
7+8+9	2.83	.87
10+11+12	3.12	.90
13+14+15	3.21	1.08

APPENDIX C

APPENDIX C

Instructions to respondents. The following instructions were read to each respondent by the interviewer:

Here are a few changes that might be made in the Navy (PRESENT QUESTIONS). Please tell me what effect the introduction of these changes would have on your interest in the Navy. Pick one of these five statements that best reflects your feeling about each set of incentives (PRESENT RESPONSE ALTERNATIVES).

Incentive statements. The following comprise the incentive statements presented in various combinations for administration to respondents:

Incentive Items Repeated from Experiment I

1. A person who was not satisfied could get out of the Navy after three months, with no strings attached.

2. A person could receive a yearly bonus of up to 25% of his base pay for exceptionally good performance.

3. Enlisted men would be paid by the government for two years of college, including living expenses at the school of their choice, after completing four years of active duty in the Navy.

4. After the first two years of duty, the Navy would guarantee a person his choice of a home port (in the U.S. or abroad) for at least one year.

5. The Navy would give a person a bonus of $1000 for enlisting.

New Incentives for Experiment II

6. Two months leave would be allowed every year for socially useful purposes such as education or social service.

7. A person would have an opportunity to work two months a year in a civilian job that matches his skills.

8. A person would be given bonuses upon completion of approved courses which increased his job skills and knowledge.

9. Job training and career counseling would be made available at Navy expense for Navy wives.

10. If a person didn't like the work he was doing, he could change to a different Navy occupation after one year of service with no loss in pay grade or benefits.

11. A person would receive an enlistment bonus of $1000 a year for each of the first three years of service.

12. Before a person made up his mind about enlisting, he could get free civilian professional counseling about Navy and civilian occupations.

13. After the first enlistment (3, 4 or 6 years), a person could re-enlist for one year at a time unless he had received special training or benefits.

14. A person could receive a yearly bonus of up to 10% of his base pay for exceptionally good performance.

15. After recruit training, a person would have the choice of going to sea and then taking specialized training, or the other way around.

APPENDIX D

APPENDIX D

Subsample A	Mean	Standard Deviation
1	2.76	1.19
4	2.90	.94
7	2.76	1.06
10	2.92	1.01
13	2.74	1.02

Subsample B		
2	2.40	1.06
5	2.63	1.15
8	2.71	1.06
11	2.62	1.09
14	2.78	1.21

Subsample C		
3	2.66	.95
6	2.70	.93
9	2.73	.97
12	2.83	.98
15	2.80	1.05

Subsample D		
1+2	3.01	.97
4+5	3.01	.99
7+8	2.94	1.01
10+11	2.91	.91
13+14	2.84	1.04

Subsample E	Mean	Standard Deviation
2+3	3.01	1.16
5+6	3.08	1.07
8+9	2.91	.98
11+12	3.03	1.10
14+15	2.83	1.06

Subsample F		
1+3	3.16	1.08
4+6	3.00	1.03
7+9	2.94	1.05
10+12	2.98	.95
13+15	2.79	1.02

Subsample G		
1+2+3	2.89	1.01
4+5+6	2.95	.95
7+8+9	2.90	1.02
10+11+12	2.84	.96
13+14+15	2.70	.94

DISTRIBUTION LIST

NAVY

4 Dr. Marshall J. Farr
Director, Personnel and Training
Research Programs (Code 458)
Office of Naval Research
Arlington, Virginia 22217

1 ONR Branch Office
495 Summer Street
Boston, Massachusetts 02210
ATTN: Research Psychologist

1 ONR Branch Office
1030 East Green Street
Pasadena, California 91101
ATTN: E. E. Gloye

1 ONR Branch Office
536 South Clark Street
Chicago, Illinois 60605
ATTN: M. A. Bertin

6 Director
Naval Research Laboratory
Code 2627
Washington, DC 20390

12 Defense Documentation Center
Cameron Station, Building 5
5010 Duke Street
Alexandria, VA 22314

1 Special Assistant for Manpower
OASN (M&RA)
Pentagon, Room 4E794
Washington, DC 20350

1 LCDR Charles J. Theisen, Jr.,
MSC, USN 4024
Naval Air Development Center
Warminster, PA 18974

1 Chief of Naval Reserve
Code 3055
New Orleans, LA 70146

1 Commander
Naval Air Systems Command
Department of the Navy
AIR-413C
Washington, DC 20361

1 CAPT Ouida C. Upchurch, USN
Program Coordinator
Bureau of Medicine & Surgery
(Code 71G)
Washington, DC 20372

1 Chairman
Behavioral Science Department
Naval Command & Management Division
U.S. Naval Academy
Luce Hall
Annapolis, MD 21402

1 Chief of Naval Education & Training
Naval Air Station
Pensacola, Florida 32508
ATTN: CAPT Bruce Stone, USN

1 Mr. Arnold Rubinstein
Naval Material Command (NAVMAT 03424)
Room 820, Crystal Plaza #6
Washington, DC 20360

1 Commanding Officer
Naval Medical Neuropsychiatric
Research Unit
San Diego, CA 92152

1 Department of the Navy
Office of Civilian Manpower Management
Code 263
Washington, DC 20390

1 Chief of Naval Operations (OP-987E)
Department of the Navy
Washington, DC 20350

1 Superintendent
Naval Postgraduate School
Monterey, CA 93940
ATTN: Library (Code 2124)

1 Commander, Navy Recruiting Command
4015 Wilson Boulevard
Arlington, VA 22202
ATTN: Code 015

1 Mr. George N. Graine
Naval Ship Systems Command
SHIPS 047C12
Washington, DC 20362

1 Chief of Naval Technical Training
Naval Air Station Memphis (75)
Millington, TN 39054
ATTN: Dr. Norman J. Kerr

1 Dr. William L. Maloy
Principal Civilian Advisor
for Education & Training
Naval Training Command, Code)1A
Pensacola, FL 32508

1 Dr. Alfred F. Smode, Staff Consultant
Training Analysis & Evaluation Group
Code N-00T
Orlando, FL 32813

1 Dr. Hanns H. Wolff
Technical Director (Code N-2)
Naval Training Equipment Center
Orlando, FL 32813

1 Chief of Naval Training Support
Code N-21
Building 45
Naval Air Station
Pensacola, FL 32508

1 Special Assistant to the Chief
of Naval Personnel
Bureau of Naval Personnel (Pers Oe)
Washington, DC 20370

1 Dr. H. Wallace Sinaiko
c/o Office of Naval Research (Code 450)
Psychological Sciences Division
Arlington, VA 22217

1 Deputy and Chief Scientist
Office of Naval Research
Code 102
Arlington, VA 22217

12 Manager, Program in Manpower R&D
Office of Naval Research
Code 450
Arlington, VA 22217

1 Chairman, Planning Committee for
the Program in Manpower R&D
Office of Naval Research (Code 430)
Arlington, VA 22217

1 Assistant Chief for Research
Office of Naval Research
Code 400
Arlington, VA 22217

1 Director of Research
Office of Naval Research
Code 401
Arlington, VA 22217

1 Head of Manpower Training &
Reserve Group (OP-964D)
Pentagon, Room 4A538
Washington, DC 20350

1 Deputy Director, Program Mgmt. Office
Naval Material Command (03PB)
Crystal Plaza #6, Room 868
Arlington, VA 20360

1 Assistant for Research Liaison
Bureau of Naval Personnel (Pers-0r)
Arlington Annex, Room 1416
Washington, DC 20370

1 Special Assistant for Enlisted
Force Analysis
Bureau of Naval Personnel (Pers-2x)
Washington, DC 20370

1 Head, Program Development &
Coordination Branch
Bureau of Naval Personnel (Pers-225)
Washington, DC 20370

1 Assistant to the Assistant Deputy Chief of Naval Operations (Manpower)
Op-01BZ2
Pentagon, Room 4E473
Washington, D.C. 20350

1 Dr. M. Wiskoff
Navy Personnel R&D Center
San Diego, CA 92152

5 Navy Personnel R&D Center
San Diego, CA 92152
ATTN: Code 10

ARMY

1 Dr. Stanley L. Cohen
US Army Research Institute
1300 Wilson Boulevard
Arlington, VA 22209

1 Dr. Ralph Dusek
US Army Research Institute
1300 Wilson Boulevard
Arlington, VA 22209

1 Mr. Edmund F. Fuchs
US Army Research Institute
1300 Wilson Boulevard
Arlington VA 22209

1 Dr. J. E. Uhlaner, Technical Director
U.S. Army Research Institute
1300 Wilson Boulevard
Arlington, VA 22209

1 Dr. Joseph Ward
U.S. Army Research Institute
1300 Wilson Boulevard
Arlington, VA 22209

AIR FORCE

1 Research Branch (AF/DPXYR)
Pentagon, Room 5C428
Washington, DC 20330

1 AFHRL/DOJN
Stop #63
Lackland AFB, TX 78236

1 Dr. Robert A. Bottenberg (AFHRL/SM)
Stop #63
Lackland AFB, TX 78236

1 AFOSR/NL
1400 Wilson Boulevard
Arlington, VA 22209

MARINE CORPS

1 Mr. E. A. Dover
Manpower Measurement Unit (Code MPI)
Arlington Annex, Room 2413
Arlington, VA 20380

1 Commandant of the Marine Corps
Headquarters, U.S. Marine Corps
Code MPI-20
Washington, DC 20380

1 Director, Office Manpower Util.
Headquarters, Marine Corps (Code MPU)
MCB (Building 2009)
Quantico, VA 22134

1 Dr. A. L. Slafkosky
Scientific Advisor (Code RD-1)
Headquarters, U.S. Marine Corps
Washington, DC 20380

OTHER DOD

1 Director for Manpower Research
Office of the Secretary of Defense
Pentagon, Room 3D129
Washington, DC 20301

1 Assistant Director for Environmental and Life Sciences
Office of the Director of Defense Research and Engineering
Pentagon, Room 3D129
Washington, DC 20301

1 Military Assistant for Human Res.
Office of the Director of Defense Research and Engineering
Pentagon, Room 3D129
Washington, DC 20301

1 Special Assistant for All Volunteer Force Action
OSD (M&RA)
Room 20270, Pentagon
Washington, DC 20301

1 Dr. Louis A. Medin
OAD (E&LS) ODDR&E
Pentagon, Room 3D129
Washington, DC 20301

1 Lt. Col. Henry L. Taylor, USAF
Military Assistant for Human Resources
OAD (E&LS) ODDR&E
Pentagon, Room 3D129
Washington, DC 20301

1 Col. Austin W. Kibler
Advanced Research Projects Agency
Human Resources Research Office
1400 Wilson Boulevard
Arlington, VA 22209

1 Mr. Thomas C. O'Sullivan
Advanced Research Projects Agency
Human Resources Research Office
1400 Wilson Boulevard
Arlington, VA 22209

1 Helga L. Yeich
Advanced Research Projects Agency
Manpower Management Office
1400 Wilson Boulevard
Arlington, VA 22209

OTHER GOVERNMENT

1 Dr. William Gorham, Director
Personnel Research and Development Center
U.S. Civil Service Commission
1900 E Street, N.W.
Washington, DC 20415

MISCELLANEOUS

1 Dr. Gerald V. Barrett
University of Akron
Department of Psychology
Akron, Ohio 44325

1 Dr. Philip G. Bernard
B-K Dynamics, Inc.
2351 Shady Grove Road
Rockville, Maryland 20850

1 Dr. Jack R. Borsting
U.S. Naval Postgraduate School
Department of Operations Research
Monterey, CA 93940

1 Dr. David G. Bowers
University of Michigan
Institute for Social Research
Ann Arbor, MI 48106

1 Mr. Michael W. Brown
Operations Research, Inc.
1400 Spring Street
Silver Spring, MD 20910

1 Dr. A. Charnes
BEB 512
University of Texas
Austin, Texas 78712

1 Dr. Kenneth E. Clark
University of R ochester
College of Arts & Sciences
River Campus Station
Rochester, NY 14627

1 Dean W. W. Cooper
Carnegie-Mellon University
School of Urban & Public Affairs
Pittsburgh, PA 15213

1 Dr. H. Peter Dachler
University of Maryland
Department of Psychology
College Park, MD 20742

1 Dr. Robert Dubin
University of California
Graduate School of Administration
Irvine, GA 92664

1 Dr. Marvin D. Dunnette
University of Minnesota
Department of Psychology
Minneapolis, MN 55455

1 Dr. Barry M. Feinberg
Bureau of Social Science Research, Inc.
1990 M Street, N.W.
Washington, DC 20036

1 Dr. Victor Fields
Montgomery College
Department of Psychology
Rockville, MD 20850

1 Dr. Gloria L. Grace
System Development Corporation
2500 Colorado Avenue
Santa Monica, CA 90406

1 HumRRO
Division No. 3
P.O. Box 5787
Presidio of Monterey, CA 93940

1 Dr. Lawrence B. Johnson
Lawrence Johnson & Associates, Inc.
200 S. Street, N.W. Suite 502
Washington, D.C. 20009

1 Dr. Ezra S. Krendel
University of Pennsylvania
Department of Operations Research
Philadelphia, PA 19104

1 Mr. W.E. Lassiter
Data Solutions Corporation
5272 River Road, Suite 100
Bethesda, MD 20016

1 Dr. Ernest J. McCormick
Purdue University
Department of Psychological Sciences
Lafayette, IN 47907

1 Dr. Robert R. Mackie
Human Factors Research, Inc.
6780 Cortona Drive
Santa Barbara Research Park
Goleta, CA 93017

1 Mr. Luigi Petrullo
2431 North Edgewood Street
Arlington, VA 22207

1 Dr. Joseph W. Rigney
University of Southern California
Behavioral Technology Laboratories
3717 South Grand
Los Angeles, CA 90007

1 Dr. Leonard L. Rosenbaum, Chairman
Montgomery College
Department of Psychology
Rockville, MD 20850

1 Dr. George E. Rowland
Rowland and Company, Inc.
P.O. Box 61
Haddonfield, NJ 08033

1 Dr. Arthur I. Siegel
Applied Psychological Services
404 East Lancaster Avenue
Wayne, PA 19087

1 Dr. G. Harold Stone
1428 Virginia Avenue
Glendale, CA 91202

AMERICAN INSTITUTES FOR RESEARCH

Research Offices

ASIA/PACIFIC
Bangkok, Thailand
APO San Francisco 96346

PALO ALTO
P.O. Box 1113
Palo Alto, California 94302

PITTSBURGH
710 Chatham Center Office Building
Pittsburgh, Pennsylvania 15219

WASHINGTON
3301 New Mexico Avenue, N.W
Washington, D.C. 20016