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Relationship Between Organizational Beliefs, Affective Dispositions and Navy Reenlistment Intention:

Theoretical and Administrative Implications

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This research focused on the validation of specific aspects of a career motivation model derived in earlier work. It had been predicted that indicators of affective dispositions toward the Navy would be more highly related to reenlistment intention than would measures of organizational beliefs. In the course of a survey of randomly selected enlisted personnel (n = 537) in three critical ratings, this hypothesis was confirmed. Findings are presented in a series of probability networks linking key belief parameters to affective

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20. dispositions and reenlistment intention. On the basis of projections of the impact of hypothetical belief changes, three sets of beliefs were identified as having utility for enhancing levels of reenlistment intention. These are beliefs regarding: (1) a man's opportunities to do the kind of work he is interested in, (2) fairness of Proficiency Pay and Variable Reenlistment Bonuses and (3) equity in extrinsic elements (such as opportunity to change ratings). Recommendations are offered for administrative action and policy changes linked to each of these beliefs.

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INTRODUCTION

This report deals with enlisted men's beliefs about the Navy, their affective dispositions toward the Navy, and how these beliefs and affective states relate to their intention to reenlist at different points during their first enlistment.

A decision to remain in, or to leave an organization is perhaps one of the more crucial decisions that an individual makes during the course of his life. Such decisions are also critical from the point of view of the viability and the effectiveness of organizations. Research on career and job decision-making has revealed that personal decisions regarding one's commitment to remain in an organization are a function of the characteristic predispositions that an individual brings with him to the organization, as well as the learning and socialization experiences he encounters in the organization. From this perspective, it is clear that the decision to remain in an organization is dependent upon events taking place during the person's tenure, as well as upon his initial reasons and expectations when joining the organization. Moreover, much of the literature on the organizational socialization process (cf. Brim and Wheeler, 1966 and Van Maanen, 1971) suggests that the individual's attachment to the organization is a function of a dynamic, sequential process in which various organizational conditions have differential impacts at different points in time.

Consistent with this view, our previous research on career motivation in the Navy has developed around the notion that career motivation is continually influenced by personal predispositions and by organizational conditions. Furthermore, early experience in the Navy organization mediates the impact of later experiences. As we have illustrated with a cognitive map of career motivation, Navy recruits first gain experience in the organization and in the process develop a set of beliefs and attitudes regarding the Navy; these being a joint function of broader societal influences, as well as organizational experience. The impact of these beliefs and affect associated with such beliefs becomes manifest as the individual begins to consider his continuing attachment to the Navy (Glickman, Goodstadt, Korman, & Romanczuk, 1973). As described in that earlier report, specific beliefs

and perceptions regarding leadership, working conditions, and the personal potential for exercising fate control within Navy settings are foremost among the factors affecting a decision to reenlist. In the career motivation model, beliefs regarding organizational conditions give rise to negative or positive "sets" (or specific affective dispositions) toward the Navy, these "sets" cumulating over time to affect the ultimate choice to remain in or to leave the organization as manifested by career intention.

Implicit in this theoretical formulation is the notion that affective dispositions toward staying in or leaving the Navy are a function of one's beliefs and perceptions of organizational conditions. Functional relationships between beliefs and affect have been amply described in social psychological literature (cf. Fishbein, 1966; Smith & Clark, 1973) dealing with attitude structure; however, the nature of belief affect relationships within the context of Navy career motivation has rarely been examined.

A second notion implicit in the career motivation model is that the cumulation of positive and negative affect regarding the Navy is ultimately related to the individual's career decision-making. Thus, to the extent that negative or positive sets toward the Navy are developed and reinforced, the impact of these affective dispositions should be closely related to career motivation.

As described below, intention to remain in the Navy may thus be regarded as the outcome of a two-stage process, in which the recruit first gains experience in the Navy and formulates a set of beliefs, each belief or set of beliefs being tied to specific affective dispositions toward the Navy. Second, as these affective dispositions (or "sets) cumulate over time, they play a significant role in the individual decision to remain in or to leave the organization. On the basis of this two stage process, it might be predicted that organizational perceptions or beliefs are not directly linked to career intention, but rather the effect of belief on career intention is mediated by the cumulation of positive and negative affective dispositions that are tied to such beliefs.

In essence, this concept can be represented schematically as follows:

Belief ——→ Affect ——→ Intention

That is, belief gives rise to affect which, in turn, conditions intention (i.e., direction of career choice). As empirically represented, measures of the adjacent states would be expected to be more highly correlated than the initial and terminal states in the above sequence (i.e., the correlation of intention with belief would be less than the correlation of intention with affect or the correlation of affect with belief.

In an effort to examine belief-affect-intention relationships, the present questionnaire study of first term enlisted personnel had two major aims. First, an attempt was made to examine the hypothesis that affective dispositions toward the Navy are more closely tied to career intention than are beliefs regarding conditions existing in the Navy, and that affective dispositions mediate the relationship between beliefs and career intention. Second, by examination of questionnaire data using probability matrices, an effort was made to identify specific beliefs (and by inference environmental conditions tied to such beliefs) that lead first to affective dispositions which, in turn, lead to career intention outcomes.

METHOD

Sampling and Administrative Procedures

The sample used in this study consisted of 537 Navy enlisted men who provided usable responses (after one follow-up) to the CAMOSUR questionnaire mailed to a sample of 1000 personnel in December 1972. Personnel from three shortage ratings, Enginemen (EN's), Hull Technicians (HT's) and Electronic Technicians (ET's) and with three different lengths of service--8-12 months, 22-26 months, and 39-45 months (plus a fourth 63-69 month group of six-year obligated ETs). These were randomly selected from Navy master personnel computer tapes. The overall sampling design was thus an incomplete block design (n=100 per cell) with three ratings (ENs, HTs and ETs), and three lengths of service (8-12 months, 22-26 months, 39-45 months) with an additional length of service group for ETs (63-69 months). The reason for this additional latter category was to provide comparability between ratings in terms of the time remaining in the first enlistment commitment. The length of enlistment of ENs, and HTs was 48 months, while

ETs were typically obligated for six years of service (72 months) in their first enlistment. The distribution of the 537 cases subject to analyses is shown in Table 1.

CAMOSUR '73 Questionnaire

The CAMOSUR '73 questionnaire is exhibited in Appendix A and was designed to measure perceptions regarding conditions existing in the Navy, as well as affective dispositions associated with those perceptions. For this purpose, 62 items were constructed on the basis of a previous interview study (Glickman et al., 1973), extensive discussions with Navy administrative personnel in the Bureau of Naval Personnel and earlier survey research on career-oriented behavior (cf. Glickman, 1961).

Responses to the 62 items were obtained in two steps. First, the respondent was asked to indicate which of two statements he believed to be true on the basis of his Navy experience. This question was answered by placing an "X" over the words in the statement that did not apply. The second step in the response process involved a response in terms of the affective disposition associated with each of these belief statements. The affective response was made on a five-point scale ranging from "makes staying in very attractive" to "makes getting out very attractive." An example appears below.

Makes staying in very attractive	Makes staying in somewhat attractive	Makes no difference	Makes getting out somewhat attractive	Makes getting out very attractive
IN	in	no effect	out	OUT
[ ]	[X]	[ ]	[ ]	[ ]

My father thinks I should [stay in] [~~get out of~~] the Navy.

TABLE 1

Distribution of Questionnaire Returns

(n = 537)

	Months of Service			
Ratings	8-12	22=26	39-45	63-69
EN	52	50	50	
HT	54	55	56	
ET	50	56	52	62

In addition to measures of perceptions of the organization and affect associated with perceptions, an overall measure of career intention was included and consisted of the following item taken from an earlier survey instrument used by Glickman (1961).

What are you most likely to do after your first enlistment?

- ☐ Work for an employer, on salarly, wages, or commission.
- ☐ Go to full-time school or college.
- ☐ Farm for myself.
- ☐ Have my own business.
- ☐ Reenlist in the Navy.
- ☐ I haven't decided what I will do.

Finally, indices of education and age were included in the questionnaire while indications of marital status were obtained from personnel records.

Analyses. The data analyses carried out as part of this report are outlined below and described in fuller detail in the Results Section.

1. Cluster analysis of dichotomous responses to the 62 organizational beliefs items was performed to minimize redundancy and to improve cognitive clarity.

2. Relationships between measures of organizational belief, affective dispositions and reenlistment intentions were next obtained in a series of three analytic steps.

a. Relationship between affective indices and reenlistment intention was compiled taking into account demographic characteristics (rating, length of service, education, marital status).

b. Relationship of beliefs and reenlistment intentions were derived.

c. Relationship of belief and affect scores was determined taking into consideration moderator effects as a function of demographic characteristics of the sample.

3. Probability matrices were constructed to describe the sequential impact of various beliefs and resultant affect on reenlistment intention.

RESULTS

Cluster Analysis of Organizational Beliefs

As a first phase of data analysis, an attempt was made to reduce the number of items dealing with beliefs regarding the Navy organization (total of 62 items) to derive a more parsimonious set of measures and to achieve greater cognitive clarity and reliability. Since the data collected on organizational beliefs was primarily nominal, being derived from a two-choice response format, a nominal clustering approach was used (McQuitty, 1955). The underlying logic of McQuitty clustering as used for the belief data may be summarized as follows:

(a) A similarity score for the joint distributions of belief judgments generated by two items was obtained by computing the number of individuals who gave similar answers (i.e., large organizationally positive or organizationally negative beliefs) to the two items as compared with those who gave different answers. Table 2 provides an illustration of the approach.

(b) Using similarity scores, a matrix is then developed with the cell entries consisting of the similarity scores between the two items comprising the row and column for that intersection. This step is shown in Table 3.

(c) Since these similarity scores are conceptually equivalent to the correlation coefficient (and are mathematically equivalent under certain conditions), cluster analytic procedures may then be used to reduce the number of dimensions.

The procedure used for clustering was the B-coefficient technique discussed by Fruchter (1954) and illustrated in Table 4. The logic of this approach is to array variables in a matrix such that the average similarity between the variables in a given group is maximized, relative to the average similarity between the variables in a group and the variables outside the group. In order to ascertain what these relative differences in mean similarity scores are, ratio scores are computed--the higher the ratio, the "purer" the dimension in a factorial sense.

Application of this technique resulted in a total of eleven clusters encompassing 42 items which could be meaningfully interpreted--that is, about two-thirds of the items (42 of 62) could be accounted for by these clusters.

Table 2

Illustration of Joint Distribution of Organizational Belief Data

Item 1		Item 2	
		Belief	Belief
Belief	B	Y	Z
		60	5
		5	30
Belief	A		

Similarity Score* = 90

*Similarity score equals the sum of the BY - A2 diagonal.

Table 3

Illustration of Matrix Containing Similarity Scores from Variables A, B, C, D, E, and F

A matrix of similarity scores between Variables A, B, C, D, E, and F consists of the following:

	A	B	C	D	E	F
A						
B	60					
C	40	90				
D	50	30	40			
E	40	40	30	40		
F	50	60	30	80	60	

Table 4

Illustration of Fruchter B- Coefficient Technique

Cluster 1	Similarity Score Average Within Cluster	Similarity Score Average Between Clusters
B + C	90	$\frac{60 + 30 + 40 + 60 + 40 + 40 + 30 + 30}{8} = \frac{330}{8} = 41.25$
D + F	80	$\frac{50 + 30 + 40 + 40 + 50 + 60 + 30 + 60}{8} = \frac{360}{8} = 45.00$
B + C + A	$\frac{90 + 60 + 40}{3} = 63.3$	$\frac{50 + 40 + 50 + 30 + 40 + 60 + 40 + 30 + 30}{9} = \frac{370}{9} = 41.1$
D + F + E	$\frac{80 + 60 + 40}{3} = 60.0$	$\frac{50 + 60 + 30 + 40 + 40 + 30 + 50 + 30 + 40}{9} = \frac{370}{9} = 41.1$

These results are summarized in Table 5. The 20 items which did not lend themselves to clustering, and from which results will be reported individually are presented in Table 6.

An examination of Table 5 shows that of the eleven clusters developed, five consist of four or more items (Clusters I, IV, VI, VI, and IX). Five clusters meet the usual cut-off for defining a cluster, a B-coefficient of 1.30 (i.e., Clusters I through V), while a sixth, Cluster VI, comes close (B-coefficient = 1.28) lending additional support to the assumption that these results are reliable. However, on the negative side, four of the clusters are doublets and six are technically below the 1.30 cut-off point, although still interpretable. This outcome may in part be attributable to the practical limits imposed on questionnaire length, that restrict the numbers of items available to generate and define factors.

Content-wise, the solution is satisfying in that the clusters seem to make conceptual sense, are interpretable, and generally fit together quite well as distinguishable entities. However, it is also clear that these clusters are not independent of one another. There seems to be an overall "fate control" factor encompassing at least five of the clusters (II, V, VI, VII, VIII). This may also explain why some of the B-coefficients are as low as they are. The cluster analysis technique employed operates to ferret out unique factorial components rather than a general factor. The strength of this overall "fate control" parameter once again provides independent replication of the importance attributable to this motivational variable since the beginning of our research (Glickman, et al., 1973; Korman, et al., 1973). However, we have chosen to utilize these more specific dimensions in our analysis because of the greater operational translatability that more narrowly defined factors may provide in the design of administrative experiments. Overall, interpretations of the clusters seem to be fairly well-dictated by the specific item content.

Cluster I, Valued Aspects of Navy Life, reflects many of the major incentives of Navy life, incentives that have typically served as appeals employed by Navy recruiters. Thus, incentives such as "demands for excellence," "educational opportunities," "lower prices," etc., are very commonly thought of as reasons for joining the Navy. Their appearance here together in a

Table 5

Result of Cluster Analysis of Organizational Beliefs

(n = 537)

Cluster Title and Items	B-Coefficient
I. Valued Aspects of Navy Life	1.46
17. Most Navy supervisors expect (high / poor) quality work from their men.	
62. The Navy's educational opportunities (high school or college) are (good / bad).	
52. Prices at the Navy PX are usually (lower / higher) than they are at civilian stores.	
49. Usually, if you are promised a school, you (get it / don't get it).	
40. Leave policies (are / are not) flexible enough to allow for personal emergencies.	
50. If you have a good excuse, you (will / will not) usually get punished for being late to work.	
20. Usually, there is (no one / someone) to talk with when you have problems.	
II. Closeness of Supervision	1.46
8. (Most / Very few) officers watch your work too closely.	
58. (Most / Very few) chiefs and petty officers watch your work too closely.	
III. Working Assignments and Conditions	1.46
3. Much of the equipment I work with (is / is not) too hard to maintain.	
56. Usually, important jobs (are / are not) assigned to the best men available.	

Table 5 (continued)

Cluster Title and Items	B-Coefficient
35. The amount of moving from one duty station to another is (OK / too much).	
IV. Equity in Extrinsic Elements	1.45
46. The Navy makes it (easy / hard) for enlisted men to have a good marriage.	
53. Living quarters aboard (many / very few) ships are too cramped.	
60. Discipline is applied (the same way / differently) by various commanding officers.	
32. It is (hard / easy) to change your rate.	
12. During the next five years, I could expect to make (more / less) money in a civilian job than in the Navy.	
7. There are (very few / too many) changes in plans and schedules that could be avoided.	
39. There (is / is not) too much difference in how commanding officers carry out Navy policies.	
23. Usually, a person's choice of duty station (is / is not) treated seriously.	
38. There (is / is not) too much sea duty.	
V. Authoritarian Control	1.31
34. The Navy (does / does not) take unfair advantage because you cannot quit when you want to.	
57. I have (often / not often) been ordered to do "busy work" or other unimportant jobs.	
33. (Too many / Very few) supervisors are annoyed when you disagree with them.	
9. There is (a lot of / very little) hassling about regulations such as haircuts, uniforms and the life.	

Table 5 (continued)

Cluster Title and Items	B-Coefficient
VI. Respect for the Enlisted Man	1.28
55. (Most / Too few) officers stick up for their men.	
59. (Most / Too few) officers show respect for the ability of enlisted men.	
44. (Most / Too few) officers I have know accept suggestions from enlisted men.	
28. (Most / Too few) of the petty officers and chiefs I have known stick up for their men.	
VII. Illicit Use of Power	1.26
16. (Too many / Very few) chiefs and petty officers I have worked for take unfair advantage of enlisted men.	
37. (Too many / Very few) officers I have worked for take unfair advantage of enlisted men.	
VIII. Openness of Supervision to Subordinate Inputs	1.20
31. My superiors usually (are / are not) willing to try new methods of getting a job done.	
42. (Most / Too few) chiefs and petty officers I have known accept suggestions from their men.	
41. Usually, when I am told to do things, I (am / am not) given reasons.	
IX. Expectations Regarding Rights and Privileges	1.20
4. Promises by the Navy (are / are not) usually kept.	
21. My recruiter (did / did not) "tell it like it is" about the Navy.	

Table 5 (continued)

Cluster Title and Items	B-Coefficient
24. The rights of the individual sailor ($_{\text{are not}}^{\text{are}}$) generally respected.	
13. Higher rated enlisted men and officers ($_{\text{do not have}}^{\text{have}}$) many special privileges.	
X. Recognition of Competence	1.24
15. Usually, a man's good work ($_{\text{is not}}^{\text{is}}$) noticed.	
19. ($_{\text{Too few}}^{\text{Most}}$) chiefs and petty officers show respect for the ability of enlisted men.	
XI. Leadership Deficiencies	1.17
25. I ($_{\text{have not}}^{\text{have}}$) often been told how to do my job by a person who didn't know how to do it himself.	
29. Different supervisors ($_{\text{do not often}}^{\text{often}}$) give me orders that go against each other.	

Table 6

Organizational Belief Items not Clustered

1. Navy people (are / are not) looked up to by civilians.
2. I am (able / not able) to do the kind of work I would really like to do.
5. There are (very few / too many) people in the Navy who pay little attention to cleanliness.
6. My supervisors usually organize work (well / poorly).
10. The Proficiency Pay (ProPay) and Variable Reenlistment Bonus (VRB) for my rate in (fair / unfair).
11. It is (hard / easy) to advance in my rate.
14. Usually, when a man reenlists, the Navy (does / does not) give him the kind of duty he wants.
18. Most jobs I have had required (a lot of / very little) skill and responsibility.
22. There is (more / no more) racial trouble in the Navy than in civilian life.
26. The military housing available for enlisted men is (poor / good quality).
27. Navy supervisors usually do (expect / not expect) too much work from enlisted men.
30. (Most / Too few) men get the training they need for their job.
36. Medical care (is / is not) as good as it is supposed to be.
43. I get to travel (a great deal / very little).
45. Boot camp does (involve / not involve) too much mental punishment.
47. The Navy puts up with (less / more) "goofing off" than civilian bosses.
48. Career personnel usually (accept / resist) new policy changes.
51. Most sailors (like / dislike) the new Navy uniform.
54. Generally, the work hours are (shorter / longer) than those in civilian jobs.
61. Discipline is applied (the same way / differently) by various commanding officers.

cluster suggests that they are important evaluative dimensions of Navy life.

Cluster II is a doublet factor which is part of the overall "fate-control" parameter discussed earlier. Its interpretation as Closeness of Supervision derives literally from the item content.

Cluster III is a "job content" factor reflecting Working Assignments and Conditions. Basically, "What is Navy work like?" rather than a "Naval Career," is the distinguishing characteristic of this cluster. This grouping would perhaps have been larger had the original questionnaire included more items of this nature.

Cluster IV has as its major theme the individual's perception of the Navy in comparison to civilian life, with particular sensitivity to equity in extrinsic elements. The dimensions on which the Navy is similar to civilian life and the dimensions along which it differs from civilian life comprise the major thrust of this cluster. The focus of the item is upon extrinsic or contextual features of the organization, rather than the intrinsic job content item as appearing in Cluster III. The cluster was labeled "Equity in Extrinsic Elements." This cluster bears a similarity to "hygiene needs," following Herzberg, Mausner & Snyderman (1959); thus if not met, results in dissatisfaction. If met, the needs reflected in these items would not be likely to produce satisfaction.

Clusters V, VI, VII, and VIII are, as noted earlier, components of the overall "fate control" parameter we have found to be so important. It may be noted, that each of these clusters is related to some specific and unique manifestations of the personal style of supervisors. Thus, Authoritarian Control (Cluster V) is probably the most concrete manifestation of this general dimension. Respect for the Enlisted Man (Cluster VI) reflects a diametrically opposite theme. Illicit Use of Power (Cluster VII) and Openness of Supervision to Subordinate Inputs (Cluster VIII) are also clearly dictated as cluster names by their content, though interrelated in theme.

Cluster IX, Expectations Regarding Rights and Privilege reflects comparison of anticipation and actual experience with regard to "promises" and "rights." Our previous suggestion has been that expectations are of crucial

importance in contributing to decline or enhancement of career motivation in the Navy (Glickman, et al., 1973).

Clusters X and XI are doublets which suggest important leadership variables--Recognition of Competence and Leadership Deficiencies. A greater number of items in the original questionnaire might have resulted in clearer specification of this type of Navy experience and its possible significance. As will be shown later, one of the clusters (i.e., X) is well reflected in terms of its link to career intention.

Turning to those items that did not form clusters, an examination of Table 6 suggests that most of the items depicted are conceptually independent of one another and do not fall along some particular dimension. This result is, in considerable respect, a valuable one since it indicates that we are able to develop items measuring organizational perceptions which were highly diverse in nature and were not limited only to the "fate control" and "expectancy disconfirmation" dimensions. Hence, it is likely that we have achieved a relatively wide sampling of organizational characteristics in our questionnaire.

Interrelationships Between Organizational Beliefs, Affective Dispositions and Reenlistment Intention

Following clustering of items, the second phase of analysis was concerned with the relationships between measures of organizational beliefs, affective dispositions toward the Navy and intentions expressed regarding reenlistment. In order to predict reenlistment intention from belief and affective measures, a series of three analytic steps were undertaken. As noted earlier, it was hypothesized that affect is more closely related to intention and mediates the impact of organizational beliefs on reenlistment intentions. Thus, the relationship between affective indices and intention were predicted to be stronger than the relationship between belief measures and reenlistment intention.

Following these hypotheses, the analyses focused on the relationship between affective indices and reenlistment intention. Included in this analysis was an examination of potential moderator effects, as a function of demographic differences found within the sample (differences in rating, time in service, education level, and marital status). That is, for each demographic variable, statistical tests for interactions were made. For example,

differences in rating might moderate the relationship between affect and reenlistment intention. This would mean that within each rating the relationship (if any) between affect and intention would be different. As a consequence, separate models for each rating would then be necessary.

Independent of questions relating to moderator effects, another statistical issue related to demographic characteristics was also considered. For example, reenlistment intention may vary as a function of one or more of demographic variables. This potential confounding was statistically partialled out before testing the relationship between the set of affective indices and reenlistment intention.

Additional analyses were concerned with the prediction of reenlistment intention from belief data. In analytic terms, belief data took the form of the clusters of items and non-clustering individual items that were described earlier.

The relationship between affective indices and reenlistment intention. At this point it should be recalled that affective responses on the CAMOSUR 73 questionnaire were paired with indications of organizational beliefs. Thus, to respond to the 62 belief items, the respondent first chose the one of two alternatives that most closely reflected his beliefs regarding conditions in the Navy. After making this choice, he then indicated the strength of impact that this belief had on his feelings about staying in or getting out of the Navy. These affective responses were made along a five-point scale ranging from "makes staying in very attractive," through "makes no difference," to "makes getting out very attractive."

Reenlistment intention was obtained from the six-choice question asking: "What are you most likely to do after your first enlistment?" Responses to this item were coded into three categories: (1) intention to reenlist, (2) undecided about reenlisting and (3) intention not to reenlist.

To examine the relationship between affective indices and behavioral intention information, a multiple discriminant function analysis was employed. Our aim here was to identify the set of affect variables that would most efficiently differentiate the types of men who do express intention to reenlist from those who are disposed not to reenlist. Later on, we will concentrate

on these variables in attempting to illustrate the manner in which the reenlistment decision-making process incorporates belief and affective states, in the context of actual probabilities of personnel flow down alternative choice/influence pathways.

As a first step prior to predicting intention from affective indices, potential moderator effects were examined, taking into account rating, length of service, educational background and marital status. No interactions were apparent, thereby indicating that none of these four characteristics had significant moderator effects upon the relationship. Following this, a least squares analysis was used to examine the relationship between affect and reenlistment intention, above and beyond confounding attributable to rating, time in service and educational background. The results of the discriminant function analysis are shown in Table 7 and reflect significant variance solely to affective indices. Of two possible dimensions, one of these was significant ($p < .001$) with an R of .437. Using the decision rule of standardized discriminant function coefficients with values greater than .250 (a measure of a variable's relative contribution to discriminating among the three reenlistment intention groups), five affective indices were identified as an efficient composite set of descriptors. Two were individual items and three of the indices were clusters. The two individual items were Item 2, "I am (able) (not able) to do the kind of work I would really like to do" and Item 10, "the Proficiency Pay (ProPay) and Variable Reenlistment Bonus (VRB) for my rate is (fair) (unfair). The clusters considered were Cluster I, Valued Aspects of Navy Life," Cluster IV, Equity in Extrinsic Elements, and Cluster X, Recognition of Competence.

As a label for this affective dimension, Intrinsic and Extrinsic Returns from the Navy, appears to be the most inclusive description of the derived composite having the strongest relationship with reenlistment intention. This dimension embraces the influence of the kinds of rewards that Navy men derive directly from the kind of work they do and from recognition that they receive from their superiors when they do a good job. In addition, the extrinsic contextual features of the Navy lifestyle also enter into this dimension in that pay, bonuses, Navy benefits, living arrangements and working conditions also are linked to reenlistment decision-making. Overall, the indices included

TABLE 7

Multiple Discriminant Function Analysis of the Relationship Between Affective Dispositions and Reenlistment Intention

MULTIVARIATE TESTS OF SIGNIFICANCE USING WILKS LAMBDA CRITERION

TEST OF ROOTS	F	DFHYP	DFERR	P LESS THAN	R
1 THROUGH 2	2.031	62.000	710.000	0.001	0.437
2 THROUGH 2	1.438	30.000	355.500	0.068	0.329

VARIABLE	UNIVARIATE F TESTS F(2, 385)	MEAN SQ	P LESS THAN	STANDARDIZED DISCRIMINANT FUNCTION COEFFICIENTS 1	2
ITEM1	8.753	8.270	0.001	0.105	0.124
ITEM2	14.506	23.502	0.001	0.281	0.053
ITEM5	4.631	4.335	0.010	0.089	-0.186
ITEM6	9.301	12.015	0.001	0.216	-0.189
ITEM10	10.292	14.860	0.001	0.251	-0.584
ITEM11	3.453	3.737	0.033	-0.149	0.576
ITEM14	7.813	11.158	0.001	0.120	0.125
ITEM18	8.576	9.223	0.001	0.091	-0.249
ITEM22	0.621	0.449	0.538	-0.036	-0.149
ITEM26	0.906	1.030	0.405	-0.101	-0.289
ITEM27	5.020	4.243	0.007	-0.003	-0.174
ITEM30	7.598	7.365	0.001	0.106	-0.197
ITEM36	3.413	6.156	0.034	-0.003	0.195
ITEM43	9.727	14.226	0.001	0.169	-0.129
ITEM45	2.743	2.055	0.066	-0.085	-0.054
ITEM47	7.064	6.927	0.001	0.177	-0.346
ITEM48	7.706	6.817	0.001	0.099	0.070
ITEM51	3.415	2.907	0.034	0.145	0.016
ITEM54	8.163	9.361	0.001	0.061	0.381
ITEM61	0.391	0.402	0.676	-0.189	0.039
CLUS1	15.167	4.718	0.001	0.288	-0.028
CLUS2	2.497	1.411	0.084	-0.183	0.041
CLUS3	7.381	2.927	0.001	-0.049	0.126
CLUS4	18.387	4.477	0.001	0.262	0.237
CLUS5	11.260	5.064	0.001	0.177	-0.034
CLUS6	6.308	4.961	0.002	0.102	-0.157
CLUS7	3.492	3.057	0.031	0.028	-0.085
CLUS8	4.486	2.955	0.012	-0.118	0.289
CLUS9	12.098	6.006	0.001	-0.031	0.024
CLUS10	2.869	2.627	0.058	-0.364	-0.206
CLUS11	6.048	3.826	0.003	0.033	0.024

in this affective dimension are indications of equity considerations in that the personal evaluation of organizational conditions entails an implicit comparison between the man's own unit or rating and other units or ratings, as well as between Navy and civilian life. Thus, in evaluating his returns from the Navy, the enlisted man views his current circumstance relative to his own inputs and relative to outcomes he could derive in other Navy circumstances or in the civilian world.

Table 8 shows the marginal affect means for each of the intention groups on the indices descriptive of the discriminant function composite (1= "makes staying in very attractive," 5= "makes getting out very attractive"). With one minor exception (on Item 10) the pattern is the same for each index. The "reenlist" group had the most positive affect, the "undecided" group showed less positive affect and the "not reenlist" group had the most negative affect.

The significant relationship between this affective dimension and reenlistment intention provides support for the notion that "sets" or affective predispositions are related to reenlistment decision-making, such that negative affect results in intention to leave the Navy, while positive affects are linked to career motivation (intention to reenlist).

To illustrate the affect-reenlistment intention relationship in graphic form, a serial diagram linking affective indicators to reenlistment intention outcomes is shown in Figure 1. In order to calculate the probabilities shown in Figure 1, discriminant function scores were computed; these scores serving as the best possible indicator of reenlistment intention. Such scores are simply linear combinations of all affective indices, whereby each affect index standard score is weighted by its discriminant function coefficient shown in Table 7. This set of affect scores was then trichotomized into generalized positive, neutral and negative affect groups on the basis of reenlistment intention group means. This procedure is a relatively common approach for establishing group classification when using discriminant function techniques.

The relative proportion of people in each generalized affect group (i.e., positive, neutral or negative) provided the first set of probabilities moving from left to right in Figure 1. Conditional probabilities are illustrated on the lines connecting the generalized affect groups to reenlistment intention outcomes and provide an indication of the degree of likelihood that a group of individuals that indicates a particular affect will be inclined to reenlist.

TABLE 8

Marginal Affect Means for the Three Reenlistment Intention Groups on Indices Descriptive of the Discriminant Function

Intention	Item 2	Item 10	Cluster I	Cluster 4	Cluster 10
1. Reenlist (n=40)	2.66	2.17	2.52	3.72	3.33
2. Undecided (n=80)	3.29	3.26	2.82	3.97	3.68
3. Not Reenlist (n=408)	3.78	3.10	3.03	4.20	3.74

Item 2: I am [able] [not able] to do the kind of work I would really like to do.

Item 10: The Proficiency Pay (ProPay) and Variable Reenlistment Bonus (VRB) for my rate is [fair] [unfair].

Cluster I: Valued Aspects of Navy Life

Cluster IV: Equity in Extrinsic Elements

Cluster X: Recognition of Competence

NOTE: Nine respondents did not indicate their reenlistment intention.

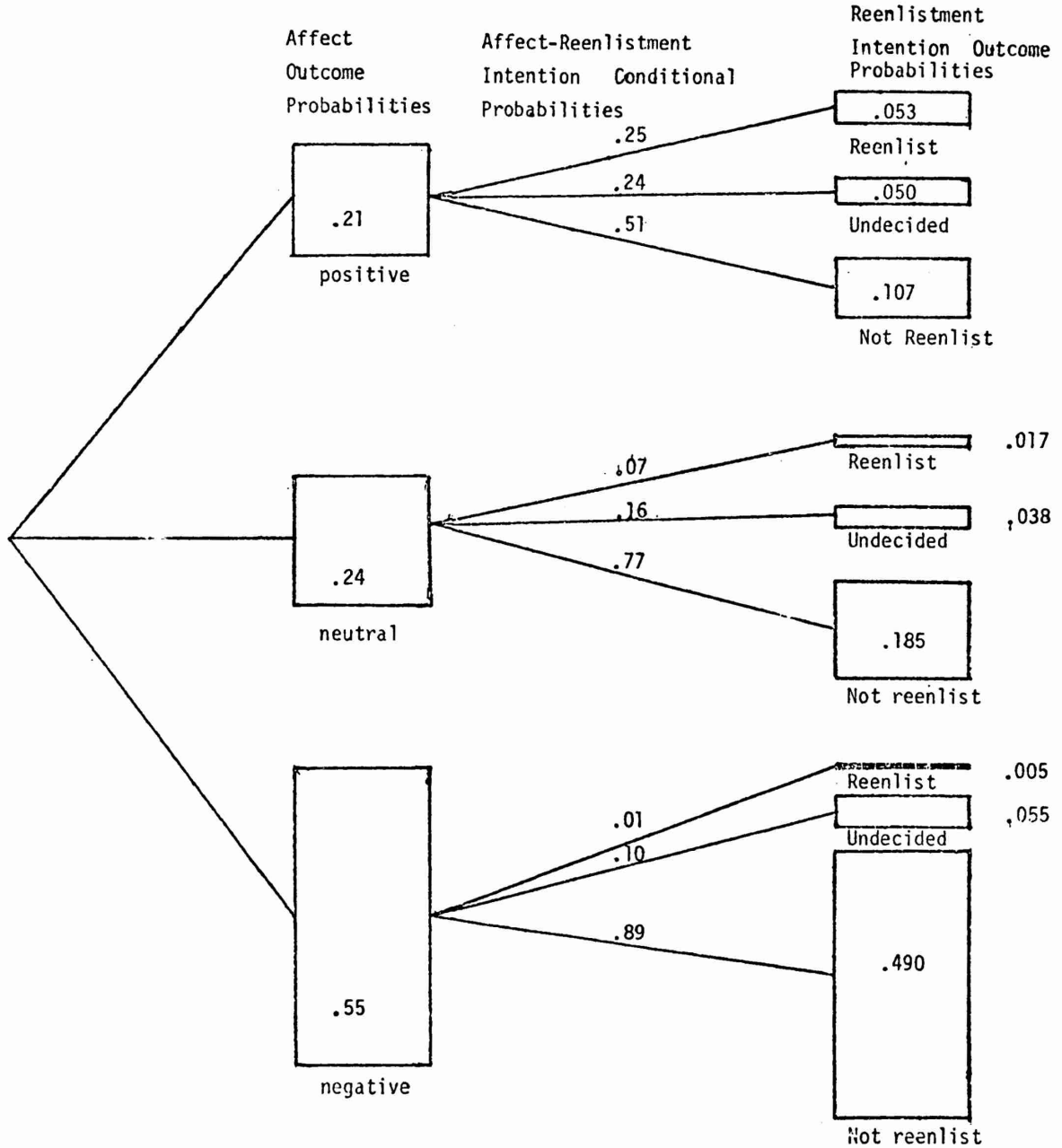

Figure 1. Serial description of the cumulative outcome and conditional probabilities associated with the generalized affect—reenlistment intention relationship.

Finally, the reenlistment outcome probabilities (reenlist, uncertain, not reenlist) are shown in the boxes on the right hand side of Figure 1. Reenlistment outcome probabilities are obtained by multiplying the proportion of persons in each affect group by the conditional probabilities leading to reenlistment intention.

As shown by the first set of probabilities on the left of the figure, the likelihood is .21 that an individual will have a positive generalized affect toward the Navy, .24 that he will have a neutral affect, and .55 that an individual will have a negative generalized affect toward the Navy. Associated with each of these probabilities of generalized affect is a set of conditional probabilities that provide a link to reenlistment intention.

On the basis of the data shown in Figure 1, we see that as an enlisted man's generalized affect regarding organizational conditions moves from positive to negative, the resultant reenlistment outcome probability drops from .053 to .005. Examination of the conditional probabilities leading from affective conditions to reenlistment outcomes reveals that there is a .25 conditional probability of reenlisting among those persons who evidence positive generalized affect, while the conditional probability of reenlistment is only .01 among those who evidence negative generalized affect. It would appear, therefore, that as a greater proportion of individuals develop positive generalized affect toward the Navy, there is an increased likelihood that such persons will evidence interest in reenlisting. Thus, by inducing greater positive generalized affect among enlisted personnel, an increase in the potential reenlistment manpower pool should be realized, thereby enhancing the flexibility and effectiveness of the Navy's manpower system. These findings suggest that the conditions leading to varying generalized affect are most critical from the perspective of manpower retention. Subsequent analysis in this report will provide information and administrative recommendations regarding such underlying conditions.

Finally, it should be noted that there was no evidence of moderator effects attributable to rating differences, differences in length of service or educational status. The absence of such moderator effects suggests that the affect-reenlistment intention relationship is relatively consistent across the different target groups of Navy personnel who are now in shortage

categories, thereby implying the existence of a general model for predicting career intention from affective indices.

Relationship between organizational beliefs and reenlistment intention. Belief measures were obtained when the questionnaire respondent selected one of two alternatives to indicate which conditions he perceived to exist in the Navy. To analyze the relationship between the two-alternative belief score and reenlistment intention (coded in three categories: intention to reenlist, intention not to reenlist, and undecided about reenlisting), contingency coefficients were computed between each belief score (individual items and clusters) and reenlistment intention.

Of the 31 resultant contingency coefficients, only a handful reached significance beyond the .05 level, the largest coefficient being .15. Thus, while eight beliefs (or belief clusters) were significantly related to reenlistment intention (Items 1, 2, 6, 10, 11, 48, 51 and Cluster V), they accounted for little variance associated with reenlistment intention.

These results show that the relationship between beliefs and reenlistment intention is a weak one at best.

It is clear that the relationship between affective indices and reenlistment intention, reported in the previous section, is stronger than the relationship between belief measures and career intention. On this basis, there is support for the hypothesis that generalized affect is more strongly related to reenlistment intention than is belief.

In overall terms, the analyses described to this point have taken into account the independent relationships of affective indices with reenlistment intention as well as the relationship between beliefs about the Navy and reenlistment intention. The section that follows is concerned with the interrelationships between beliefs and generalized affect toward the Navy.

Relationship between organizational belief and affect. Since data regarding organizational beliefs and affective dispositions toward remaining in the Navy were collected simultaneously, and since so much of the literature on attitudes provides a basis for hypothesizing a strong link between belief and affect, the relationship between the enlisted man's organizational beliefs and his generalized affect toward staying in the Navy is examined here. To

analyze this data, affect scores for each item (or item cluster) were dichotomized according to corresponding belief responses. The affect scores used in this analysis were five point scales shown in the questionnaire (in Appendix A). Following dichotomization, 31 unequal N analyses of variance were computed and the resultant F-ratios and percentages of variance accounted for are shown in Table 9.

As indicated in the table, virtually all (with one exception) of the findings are statistically significant, indicating that positive beliefs led to significantly different affective outcomes than did negative beliefs. The table presents items and item clusters in decreasing order of percentage of variance accounted for by belief information. In all but four instances, belief was found to account for 10% or more of the variance associated with affective disposition data. In four instances, beliefs were able to account for more than 50% of the variance. As may be seen in Table 9, those belief indices that have the highest correlation with affect scores are found at the top of the table and thereby represent the best indicators of affect responses.

Probability linkages between organizational beliefs, affective dispositions and reenlistment intention. On the basis of findings regarding the relationships between beliefs, generalized affect and reenlistment intention, the following sequence of psychological processes might be posited: (1) The individual initially experiences different conditions within the organization and as a consequence, establishes a set of beliefs regarding the organization. (2) These beliefs influence his feelings or generalized affect toward the organization. (3) Affective dispositions, in turn, lead to reenlistment intention outcomes. More specifically, our findings confirm the expectation that those persons who evidenced positive generalized affect were more likely to indicate an interest in reenlisting. One aim of further analysis is to pinpoint more clearly some of the antecedents of positive generalized affect. Since our belief measures approximate perceptions of environmental conditions existing in the Navy, the linkage between organizational beliefs and affect should provide some insights for making administrative recommendations that would enhance generalized positive affect and thereby impact upon reenlistment intention.

TABLE 9

Differences in Affective Disposition as a Function of Organizational Beliefs

Item or Cluster No.	Description	F-Ratio	Pct. of Variance Accounted For
Item 36	Medical care [is / is not] as good as it is supposed to be.	770	61%
Item 6	My supervisors usually organize work [well / poorly].	773	60%
Item 2	I am [able / not able] to do the kind of work I would really like to do.	667	56%
Item 14	Usually when a man [enlists / reenlists] the Navy gives him the kind of duty he wants.	562	55%
Cluster X	Recognition of Competence	472	49%
Item 10	The Proficiency Pay (ProPay) and Variable Reenlistment Bonus (VRB) for my rate is [fair / unfair].	515	48%
Item 61	Discipline is applied [the same / differently] for black and white sailors.	435	47%
Cluster VIII	Arbitrary Supervision	449	46%
Cluster VI	Respect for the Enlisted Man	469	46%

TABLE 9

(Cont'd.)

Item or Cluster No.	Description	F-Ratio	Pct. of Variance Accounted For
Item 54	Generally, the work hours are [shorter] [longer] than those in civilian jobs.	375	45%
Item 26	The military housing available for military men is [poor] [good quality].	370	45%
Cluster VII	Illicit Use of Power	416	45%
Item 22	There is no [more] [no more] racial trouble than in civilian life.	405	42%
Item 30	[Too] [Most] few men get the training they need for their job.	452	41%
Cluster XI	Leadership Inadequacy	359	39%
Item 48	Career personnel usually [resist] [accept] new policy changes.	302	39%
Cluster IX	Expectations Regarding Rights and Privileges	332	39%
Cluster V	Authoritarian Control	298	39%
Item 18	Most jobs I have had required [very little] [a lot of] skill and responsibility.	252	33%
Item 1	Navy people [are not] [are] looked up to by civilians	197	30%

TABLE 9

(Cont'd.)

Item or Cluster No.	Description	F-Ratio	Pct. of Variance Accounted For
Item 45	Boot camp [does / does not] involve too much mental punishment.	182	28%
Item 11	It is [hard / easy] to advance in my rate.	199	25%
Item 27	Navy supervisors usually [do not expect / expect too much] work from enlisted men.	164	23%
Cluster III	Working Assignments and Conditions	138	21%
Cluster I	Valued Aspects of Navy life	109	18%
Cluster II	Closeness of Supervision	61	11%
Item 5	There are [too many / too few] people in the Navy who pay attention to cleanliness.	32	6%
Cluster IV	Equity in Extrnisic Elements	29	6%
Item 43	I get to travel a [very little / great deal].	18	4%
Item 47	The Navy puts up with [more / less] "goofing off" than civilian bosses.	1	0%

To graphically trace the interrelationships between belief, generalized affect and reenlistment intention, a set of conditional and cumulative outcome probabilities have been derived from sequential cross-tabulations of data from belief indices, the generalized affect composite and the reenlistment measures. Specifically, we have focused attention on five belief indices most representative of the generalized affect composite (see Table 7) derived from a multiple discriminant function analysis used to differentiate high and low reenlistment intention groups (i.e., Items 2 and 10, Clusters I, IV, and X). Figures 2 through 6 provide a graphic display of the sequence of conditional and cumulative outcome probabilities associated with responses to belief items, responses on the generalized affect composite, and reenlistment intention indicators.

There are several perspectives from which these graphic displays may be examined. One perspective is provided by the simple description of the psychological paths by which different sorts of people decide to reenlist or not reenlist. These descriptions will be presented in this section. A second perspective from which the sequential conditional and cumulative outcome probabilities may be examined is in terms of their utility for identifying potential administrative and policy changes that might have an impact on reenlistment behavior. This second perspective will be represented in a subsequent portion of the Results section.

In order to deal with the description of psychological paths an example is appropriate here. Turning to Figure 2, the conditional and outcome probabilities associated with Item 2 are shown. Item 2 was concerned with whether the individual feels that he is "able" or "unable" to do the kind of work he would really like to do. Conditional probabilities are found on the lines connecting different outcomes and provide an indication of the likelihood that a given outcome (i.e., belief outcome or generalized affect outcome) will be followed by a subsequent outcome in the belief-affect-reenlistment sequence. To predict particular affect outcomes the following formula might be applied:

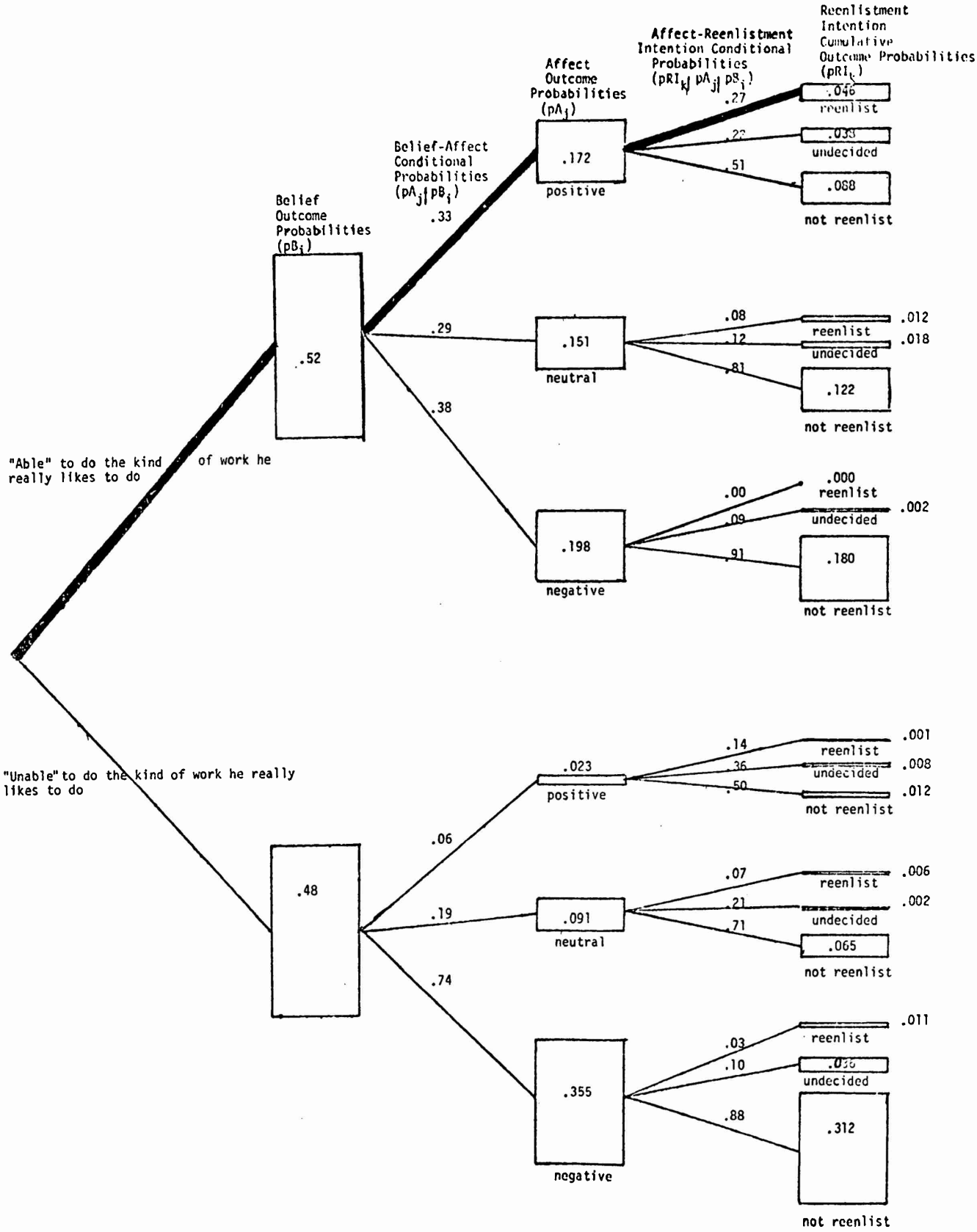

Figure 2. Cumulative outcome and conditional probabilities associated with belief-affect-reenlistment intention data from Item 2.

(1) $pB_i \times pA_j|pB_i = p A_j$

where pB_i = the probability of belief outcome i

pA_j = the probability of affect outcome j

and $pA_j|pB_i$ = the belief-affect conditional probability (the conditional probability that affect outcome j will occur given belief outcome i).

In analogous fashion, a particular reenlistment outcome might be predicted using the following formula:

(2) $pB_i \times pA_j|pB_i \times pRI_k|pA_j|pB_i = pRI_k$

where pRI_k = the probability of reenlistment outcome k

and $pRI_k|pA_j|pB_i$ = the affect-reenlistment intention conditional probability (the conditional probability that reenlistment outcome k will occur given belief-affect conditional probability ij).

Following the thickened line in Figure 2 used for illustration, we see that there is a .52 probability (pB_i) that an individual in our sample would indicate the belief that he is "able" to do the kind of work he would really like to do. Belief-Affect conditional probabilities ($pA_j|pB_i$) are next shown on the line connecting belief to affect. Such conditional probabilities indicate the likelihood that different affective outcomes will be evidenced, given a particular belief. In the case of Item 2, those persons who believe that they are able to do the kind of work they like to do may have a positive generalized affect (pA|pB of .33) neutral generalized affect (pA|pB of .29) or negative generalized affect (pA|pB of .38).

Affective outcome probabilities (pA_j) provide an indication of the overall likelihood (or joint probability) that an individual will indicate a particular affective outcome and a particular belief. In this case, the affect outcome probability was .172 that an enlisted man would evidence positive generalized affect and simultaneously hold the belief that he is "able" to do the kind of work he would really like to do. As shown in formula (1) above, affective outcome probabilities may be obtained by multiplying belief-affect conditional probabilities by the belief outcome probability.

Affect reenlistment intention conditional probabilities ($pRI_k|pA_j|pB_i$) are shown on the line connecting affective outcomes to reenlistment intention outcomes. Reenlistment intention outcome probabilities represent the joint likelihood that an individual will specify a particular reenlistment intention, as well as specific beliefs and specific generalized affect. Another way of interpreting reenlistment outcome probabilities is to say that they represent the likelihood that an individual will evidence a specific reenlistment intention via a particular psychological path.

Reenlistment intention outcome probabilities are illustrated in the last block of Figure 2, where nine such outcome probabilities are exhibited. These reenlistment outcome probabilities were obtained using formula (2) above to represent the notion that belief outcome, probabilities, belief-affect conditional probabilities and affect-reenlistment intention conditional probabilities jointly determine specific reenlistment intention outcomes. As an example, the reader might refer to the first reenlistment intention outcome probability listed in the upper left corner of Figure 2 (i.e., probability of reenlisting equals .046). This probability was obtained by multiplying the appropriate affect-reenlistment intention conditional probability (i.e., probability of .27) by the probability of a generalized positive affective outcome (i.e., probability of .172),

In the case of Item 2, the modal reenlistment intention path has a likelihood of .046, while the modal nonreenlistment intention path has a probability of .312. Examination of the modal reenlistment path suggests that the greatest reenlistment intention is obtained when individuals manifest a belief that they are "able" to do the kinds of work they would really like to do, while at the same time evidencing positive generalized affect. The modal nonreenlistment path indicates that the psychological processes by which men decide to leave the Navy include a belief that they are "unable to do the kinds of work they would really like to do," as well as negative generalized affect.

Such findings have administrative implications and suggest that organizational beliefs regarding the ability to do work in which one is interested may be a key point at which intervention might take place in order to bring about a reversal of negative trends in reenlistment behavior. Administrative

implications will be further elaborated in a subsequent section, where the potential for using these probability matrices to calculate manpower projections is explored.

Similar sorts of comparisons might be made with respect to other belief indices that are representative of the generalized affect composite (i.e., Item 10, Clusters I, IV, and X). Turning to Figure 3, the conditional and outcome probabilities linked to Item 10 are presented. Item 10 deals with the extent to which individuals feel that Proficiency Pay (ProPay) and Variable Reenlistment Bonus (VRB) are fair or unfair for their rating. Examination of Figure 3 reveals that the modal reenlistment intention path has a .046 probability of occurrence while the modal path to non-reenlistment has a likelihood of .300. The optimal path to reenlistment thus proceeds via a belief that ProPay and VRB are fair while simultaneously evidencing positive generalized affect. The path to non-reenlistment, interestingly enough, also proceeds via a belief that ProPay and VRB are fair; however, this belief is accompanied by generalized negative affect.

Beliefs regarding equity in bonuses may also represent a point at which administrative intervention could take place and in later discussion, such possibilities will be examined.

Examination of Figure 4 provides an indication of the conditional and outcome probabilities evidenced in response to Cluster I, a group of items concerned with valued aspects of Navy life. The modal psychological path to reenlistment intention has a likelihood of .053, and may be characterized by persons who believe that there are a number of valued aspects of Navy life (e.g., good educational opportunities, low prices in PX's, etc.) and have a generalized positive affect toward the Navy. The modal non-reenlistment path also incorporates a set of beliefs that the Navy has a number of valued aspects associated with it. Simultaneously, the non-reenlistment pattern includes a negative generalized affect component. The possibility of exploiting this particular belief-affect-reenlistment intention pattern to derive potential administrative interventions will be examined in a subsequent section of this report.

Cluster IV, "equity in extrinsic elements," was also a focus of our analysis. These conditional and outcome probabilities are illustrated in

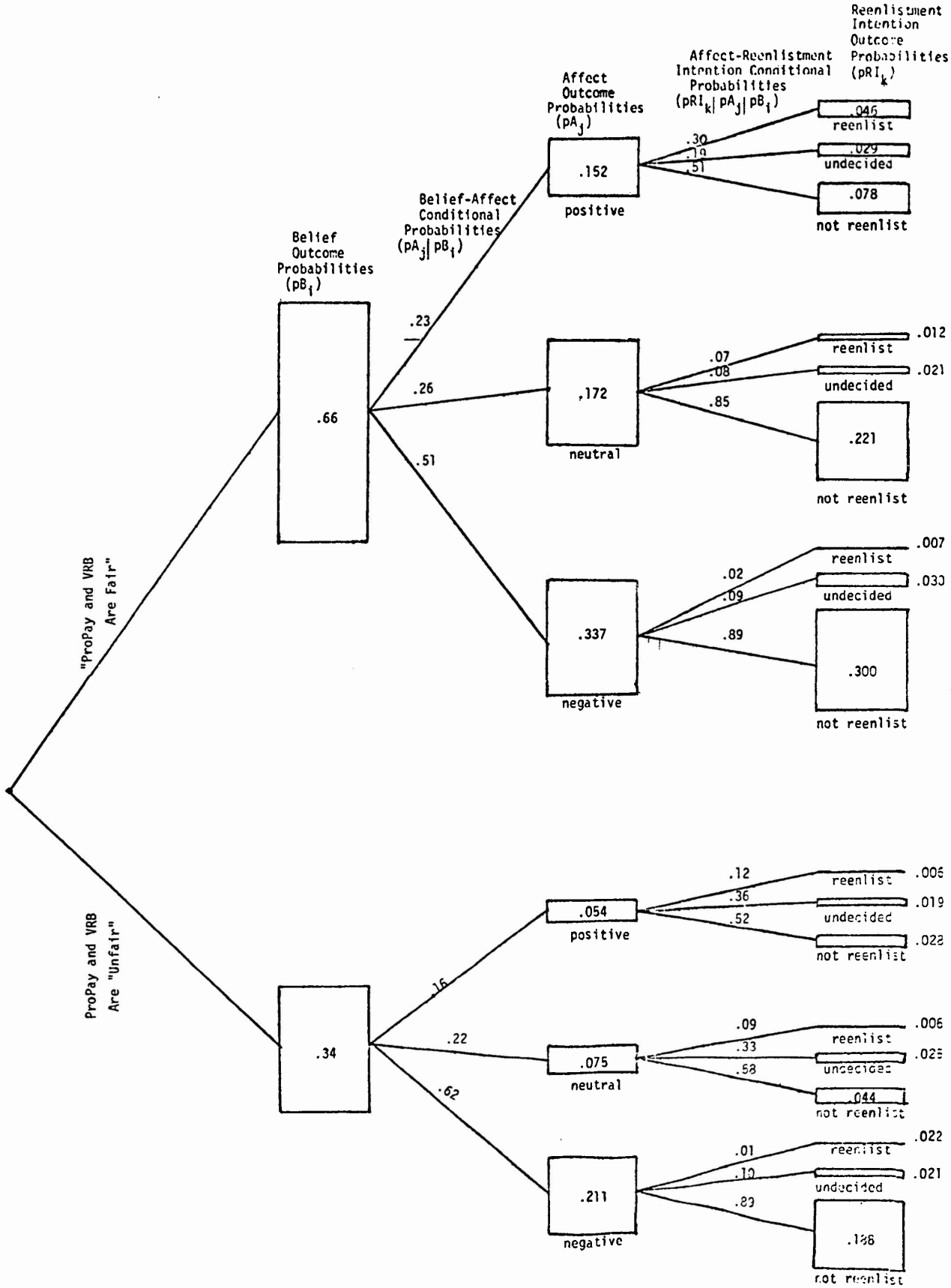

Figure 3. Cumulative outcome and conditional probabilities associated with belief-affect-reenlistment intention data for Item #10.

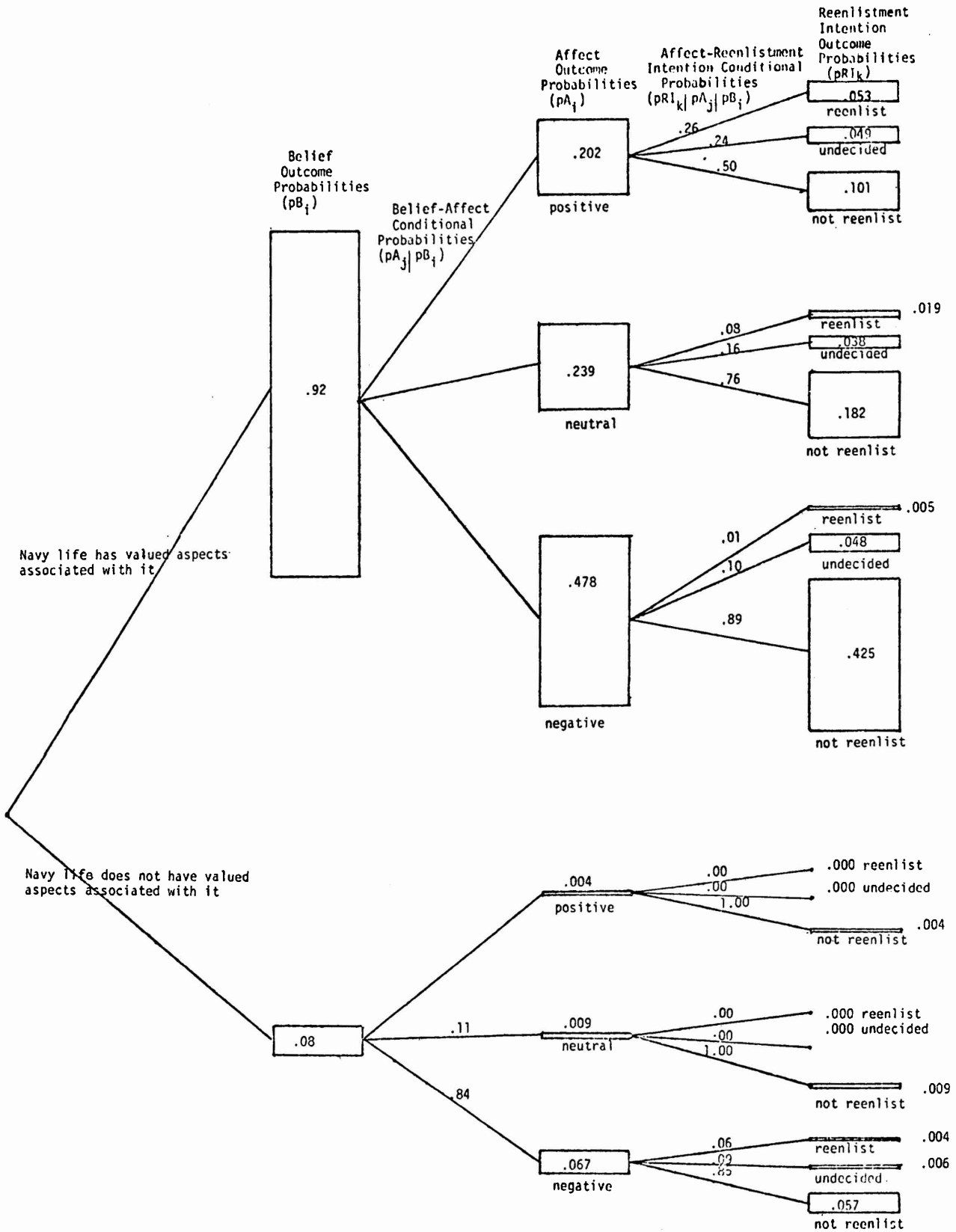

Figure 4. Cumulative outcome and conditional probabilities associated with belief-affect-reenlistment data from Cluster I .

Figure 5. This cluster incorporates a number of items from the questionnaire, including the difficulty of having a good marriage while in the Navy, cramped quarters aboard ships, differential application of discipline, difficulty in changing one's rate, comparative earnings in civilian and Navy jobs, amount of sea duty, etc. These items are clearly focused on environmental conditions surrounding Navy jobs and the Navy lifestyle, in contrast to intrinsic qualities of work in the Navy.

As shown in Figure 5, the modal reenlistment intention pattern has a probability of .046 and appears to operate through a belief that, characteristic of the Navy is inequity in the extrinsic elements, while a positive generalized belief is still maintained. Thus, despite the fact that the Navy is seen as functioning, in many respects, unfairly, a substantial proportion of those men who reenlist recognize such inequity, while still maintaining positive affect toward the Navy. This situation appears to represent an instance of cognitive dissonance, in which beliefs and affect are inconsistent. Not surprisingly, the modal non-reenlistment pattern also incorporates a belief that there are basic inequities associated with Navy life, while at the same time indicating that they have generalized negative feelings about the Navy.

On the basis of conditional probabilities, it is possible to estimate the impact that administrative actions affecting beliefs would have on reenlistment intention outcomes, and such projections will be described in a section of the report that follows.

Finally, there is one more cluster of belief indices that requires attention. Cluster X is concerned with "recognition of competence" and the conditional and outcome probabilities associated with this index may be found in Figure 6. As shown there, the modal pattern of reenlistment intention has a .029 probability of occurrence and may be characterized in terms of persons who maintain beliefs that they are given respect and recognition in the Navy while maintaining a generalized positive affect toward the organization. The modal non-reenlistment pattern has a likelihood of .251 and is virtually the mirror-image of the modal reenlistment intention pattern. Hence, the modal non-reenlistment pattern may be described in terms of beliefs that little recognition and respect is accorded the enlisted man and that individuals comprising this group have a negative generalized affect

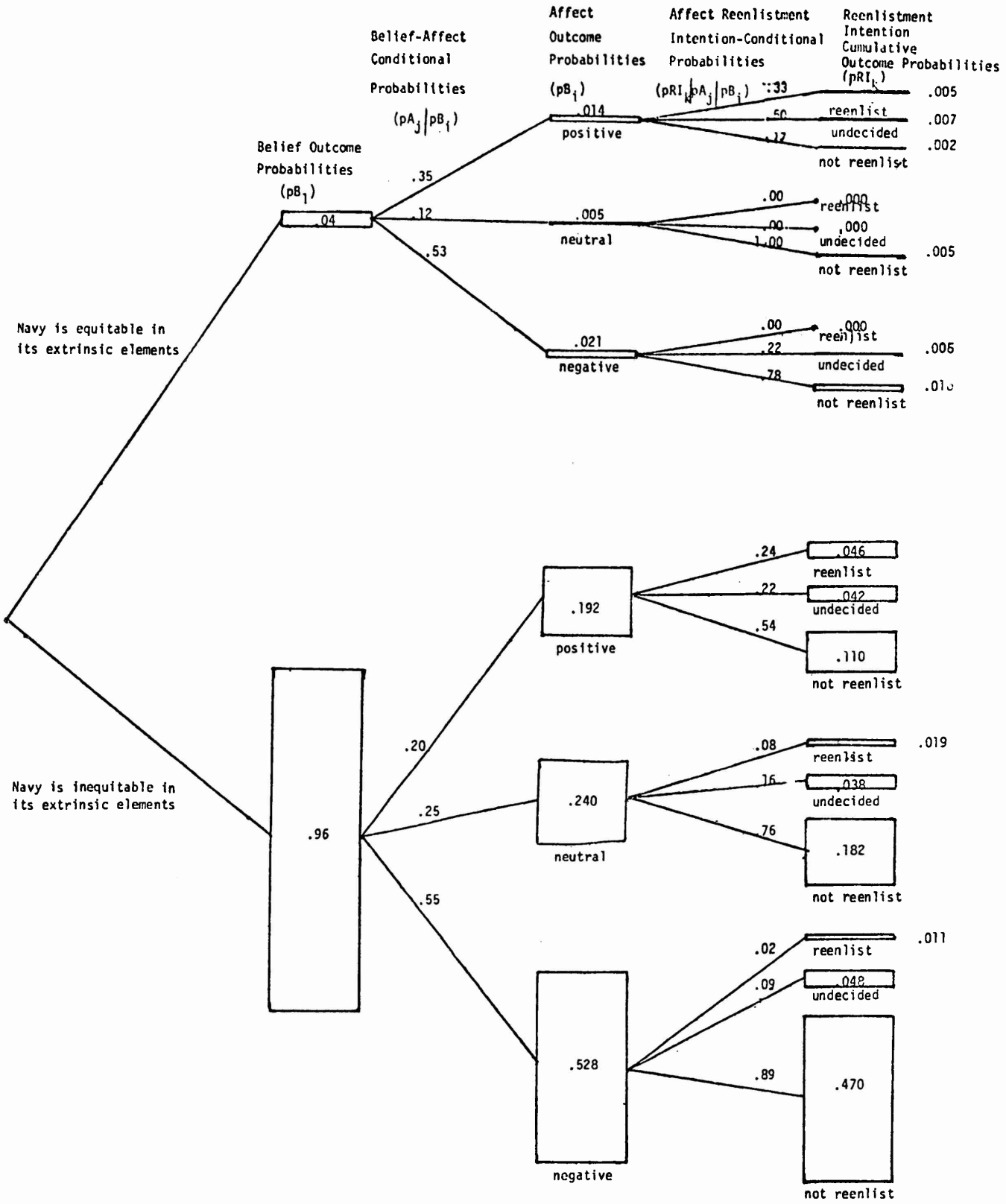

Figure 5. Cumulative outcome and conditional probabilities associated with belief--affect--reenlistment intention data from Cluster IV.

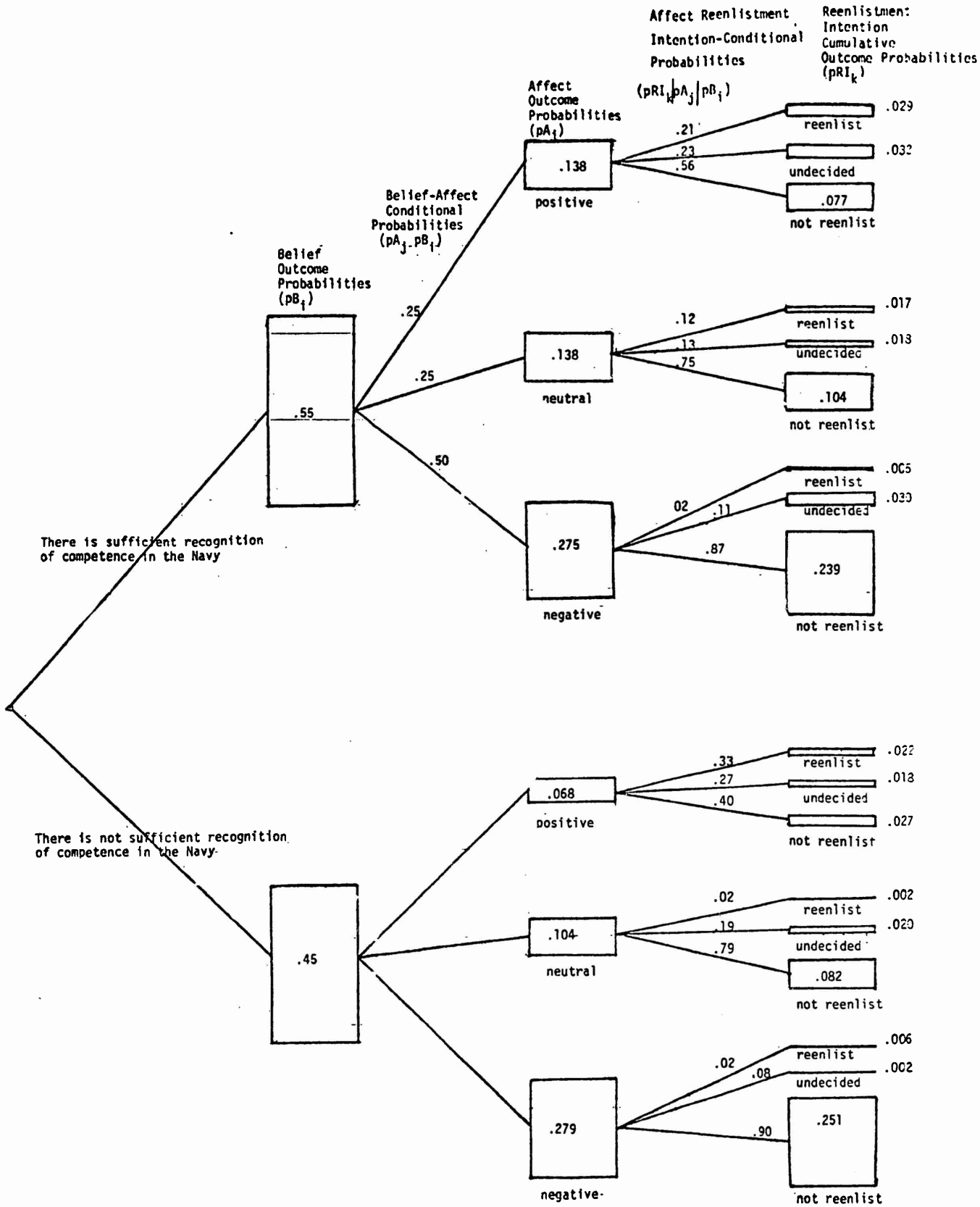

Figure 6. Cumulative outcome and conditional probabilities associated with belief-affect reenlistment intention data from Cluster X.

toward the Navy. It is clear from these data that organizational beliefs regarding the amount of recognition and respect accorded enlisted men is one of the determinants of reenlistment outcomes. Further discussion of the administrative significance of these beliefs is given below.

Utility of belief-affect-reenlistment intention probabilities for examining the impact of policy and administrative change. In addition to their utility for describing the psychological patterns characterizing persons who reenlist or do not reenlist in the Navy, the probabilities shown in Figures 2 through 6 may also be used to pinpoint and evaluate the impact of policy changes and administrative interventions. Thus, policy changes may have an impact upon the beliefs held by enlisted personnel, such alterations in belief patterns then being manifested in terms of increased or decreased probabilities of generalized affect outcomes. Different affect outcomes, in turn, should result in differences in reenlistment intention.

Illustrated below is the belief-affect-reenlistment intention formula (formula 2) that may be used to predict reenlistment intention:

$$(2) \quad pB_i \times pA_j|pB_j \times pRI_k|pA_j|pB_i = pRI_k$$

It is apparent from this formula that by altering the initial level of belief outcomes, such changes are multiplied through to reenlistment intention outcomes.

As a general rationale for examining the impact of administrative and policy changes on reenlistment intention, we have assumed that, for the most part, such changes will operate to bring about an alteration of organizational beliefs. We begin with this assumption since belief components, as perceptual interpretations of the environment, appear to be most closely related to environmental events and changes that are wrought by administrative and policy intervention.

While it may also be possible to bring about direct alteration of generalized affective outcomes, such potentialities will not be examined here, but given the nature of the probability model, could clearly fit within our predictive formula.

Within the general framework of belief-affect-reenlistment intention probabilities it needs to be recognized that the probabilities represented in Figures 2 through 6 are empirically obtained likelihoods of events. By making hypothetical changes in particular values and then using empirically derived probabilities to complete the predictive formula, it is possible to examine the hypothetical impact of changes upon reenlistment intention outcomes. On the basis of the formula, the analysis can be used to establish estimates of the paths of maximum likelihood for inducing a change in reenlistment intention, as well as for providing a basis upon which further cost-benefit analysis may be undertaken for additional assessment of alternative courses of administrative action.

To investigate the way in which various administrative interventions might have an impact, our focus will again be upon Items 2 and 10 and Clusters I, IV and X, since these items are representative of the most efficient discriminator of reenlistment intention.

As noted in the description of findings bearing on Item 2, beliefs regarding the individual's ability to do the kind of work in which he is interested have an impact on his decision to reenlist in the Navy. Thus, those persons who feel that they are able to do the kind of work they like evidence a greater likelihood of reenlisting. Keeping in mind the sequence of belief-affect and reenlistment intention probabilities, it seems plausible that if a greater proportion of enlisted men believe that they are able to engage in work that interests them, a greater interest in reenlisting would be evident.

Just what sort of increment in reenlistment intention might be expected, given a change in beliefs as expressed in Item 2. The belief-affect and affect-reenlistment conditional probabilities found in Figure 2 are most enlightening, and provide a basis for generating hypothetical projections of the sort required. If one were to assume that through some policy change or administrative action, 100% of enlisted personnel were to evidence a belief that they were able to do the kind of work they wanted to do, a hypothetical set of outcomes might be generated as shown in Figure 7. In that figure reenlistment intention, probabilities were obtained by substituting a value of 1.0 for the belief outcome (pB_i) probability in the reenlistment prediction

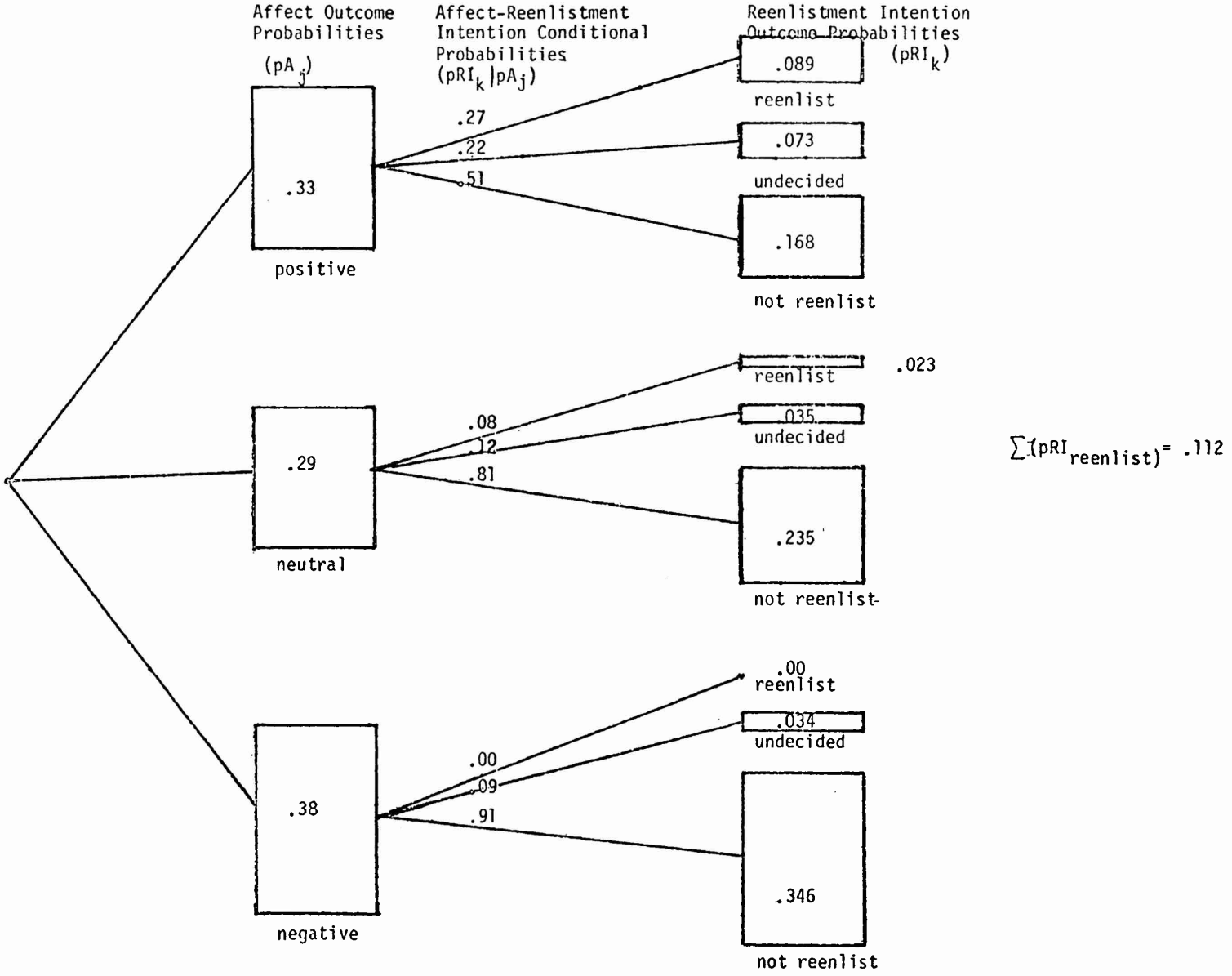

Figure 7. Projected outcome from hypothetical belief change on Item 2, assuming all respondents indicate that they are able to do the kind of work they would really like to do.

formula above. By multiplying belief-affect conditional probabilities ($pA_j | pB_i$) and affect-reenlistment intention conditional probabilities, a set of hypothetical reenlistment intention outcomes probabilities was derived for each path leading to a positive reenlistment intention outcome. The sum of all three hypothetical reenlistment intention outcomes revealed an overall reenlistment intention probability of .112, this as compared with an empirically obtained reenlistment probability of .078 from the sample participating in this survey. On the basis of this hypothesized outcome there would be a gain of approximately 43% enlisted personnel indicating an interest in reenlisting.

These results suggest that administrative actions or policy changes which allow individuals to feel that they are doing work in which they are genuinely interested may have beneficial effects in terms of reenlistment behavior. In this particular instance, the maximum reenlistment intention gain was on the order of 43% in return for a change in beliefs held by 48% of the population sampled.

There may be a variety of administrative approaches for achieving such belief changes, including more intensive career counseling, provision for cross-training of individuals (to permit greater individual flexibility and increased potential that an individual will be placed in a job in which he has an interest), as well as increased opportunity for job transfer and retraining to allow individuals to pursue occupational interests more attuned to current needs. Similar recommendations have been made in earlier reports (Glickman, Goodstadt, Korman & Romanczuk, 1973) and further specification of such suggestions will appear in the Discussion section.

Similar sorts of hypothetical projections may be made with respect to other belief indices to provide an estimate of the maximum likelihood for increasing reenlistment intention through various administrative interventions.

As presented in Figure 3, the conditional and outcome probabilities associated with Item 10 provide an indication that the highest reenlistment outcome probability is linked to the belief that Proficiency Pay and Variable Reenlistment Bonuses are fair. On the basis of this result, we can explore

the implications of administrative action that increases the proportion of enlisted personnel who perceive that ProPay and VRB are "unfair" for for their rate. These hypothetical outcomes are illustrated in Figure 8. Summing hypothetical reenlistment outcomes, an overall reenlistment intention likelihood of .097 would result, as compared to the empirically derived likelihood of a .078 reenlistment intention probability. The proportional increase in the number of persons interested in reenlisting would, therefore, be on the order of 24% in return for a 34% increase in the number of persons who indicate that ProPay and VRB is fair.

Administrative approaches for altering such beliefs would need to rely heavily upon changes in the allocation structure of bonuses. To change the present allocation system requires some additional evidence regarding how enlisted men feel about the levels of ProPay and VRB, since such rewards are linked to occupational categories and our data only reflect three Navy ratings.

Recommendations may also be derived from data concerned with Cluster I (Valued Aspects of Navy Life). As indicated in Figure 4, both modal reenlistment, as well as modal non-reenlistment intention patterns stem from beliefs that the Navy does indeed have a number of valued aspects associated with it (i.e., educational opportunities, low prices in the PX, etc.). Shown in Figure 4 is a breakdown in terms of the belief outcome probabilities, where it is evident that 92% of the respondents indicate that they believe in the valued aspects of Navy life.

What would happen if the remaining 8% were also convinced that the Navy has a number of valued aspects attached to it? In Figure 9, hypothetical reenlistment intention outcome probabilities are shown. The sum of the three reenlistment outcome probabilities indicates that the estimated overall probability of an individual expressing the hypothetical positive reenlistment intention is .084 as compared with the obtained value of .078. This increase would represent an 8% increase in the number of persons indicating an intention to reenlist in the Navy. To produce such an effect, the beliefs of 8% of the sample would have to be changed. It needs to be

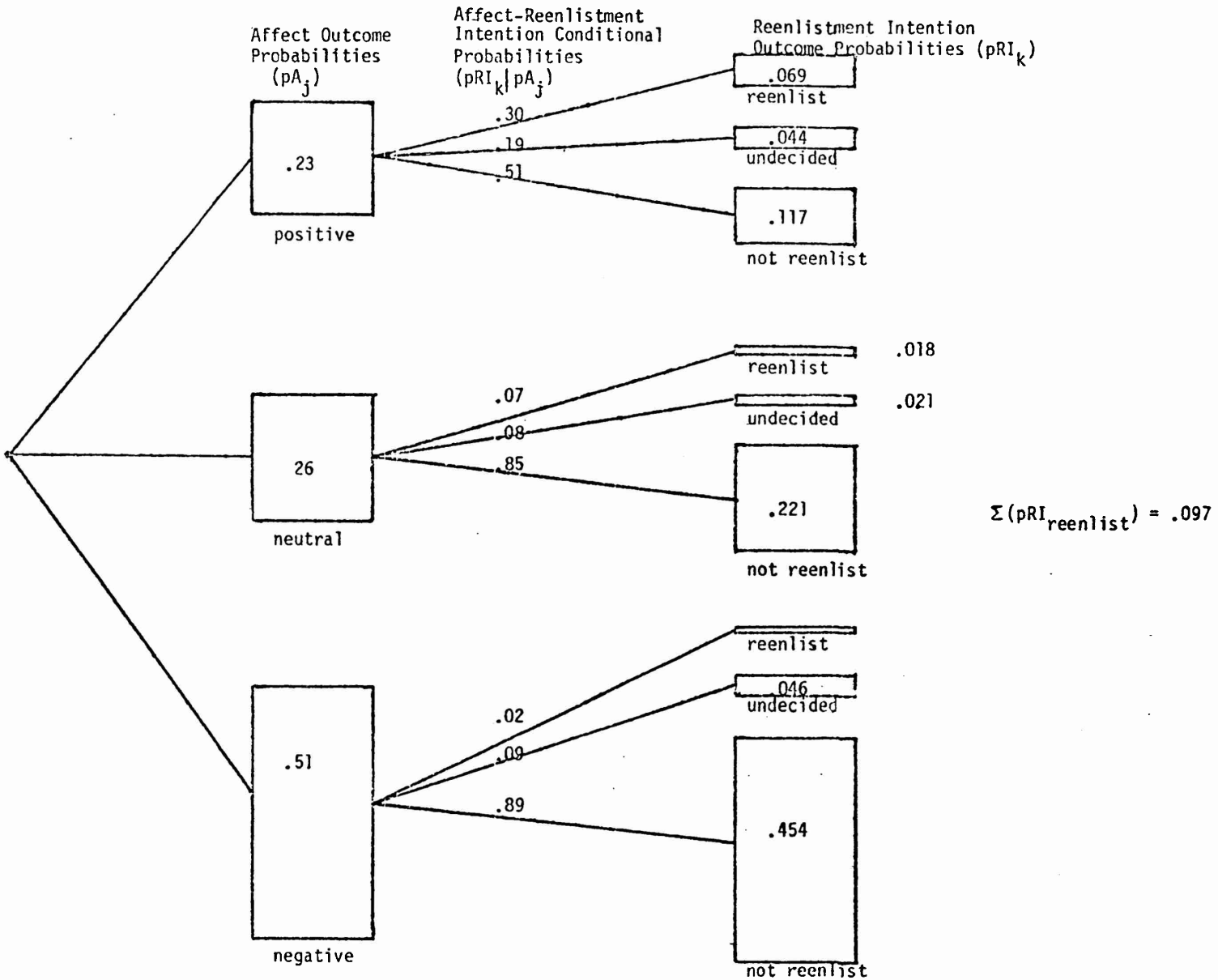

Figure 8. Projected outcomes from hypothetical belief change on Item 10, assuming that all respondents indicate that they believe that ProPay and VRB are fair for their rating.

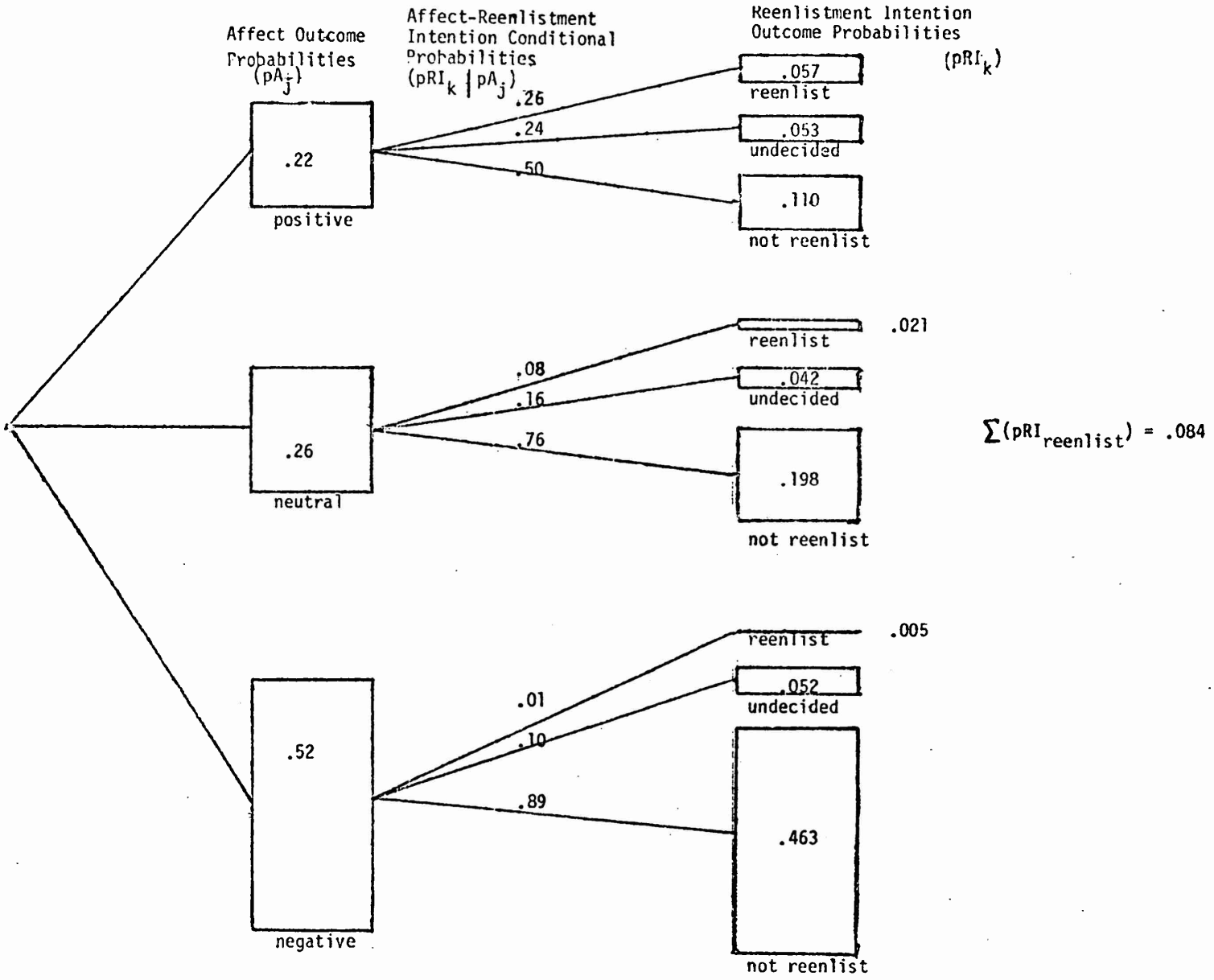

Figure 9. Projected outcomes from hypothetical belief change on Cluster I, assuming that all respondents indicate that the Navy has many valued aspects associated with it.

recognized, however, that 92% of the sample already believes in the "valued aspects of Navy life," a possible asymptote for such perceptions. Therefore, it might be suggested that there is little potential for improving beliefs in this area.

On this basis, we might recommend that effort should not be addressed to considering "valued aspects of Navy life" as a source of potential mechanisms to be used in administrative interventions addressed to problems of reenlistment shortfalls. The cluster of "valued aspects of Navy life" includes the level of work quality demanded by supervisors, quality of educational opportunities provided by the Navy, promises regarding Navy schools, flexibility of leave policies, etc. While we would not recommend increased administrative efforts in this area, we would suggest that current policies in this domain be maintained to prevent an erosion of current interest in reenlisting.

Focusing on Cluster IV (Equity in Extrinsic Elements), the results as depicted in Figure 5 indicate that there is an almost universal belief among enlisted men that the Navy is inequitable in a number of extrinsic elements. Thus, 96% of our sample indicated that they do <u>not</u> feel that the Navy has been equitable in terms of the kind of environment it has provided.

What would happen if the Navy attempted to reduce a number of these inequities, thereby bringing about a basic change in the organizational beliefs held by enlisted personnel? If one can assume that all enlisted men would then believe that the Navy is essentially equitable in terms of a number of relevant extrinsic characteristics, a hypothetical distribution of reenlistment outcomes might be generated, based on belief-affect conditional probabilities and affect-reenlistment intention conditional probabilities shown in Figure 5. Figure 10 provides a picture of the reenlistment intention outcomes of this hypothetical situation. By summing hypothetical reenlistment intention probabilities, the overall likelihood of reenlistment intention is found to be .116 as compared with .078 obtained empirically. This finding represents a gain of approximately 48% in the number of persons who would evidence an interest in reenlisting were the Navy to be able to introduce change that would demonstrate greater equity in extrinsic characteristics.

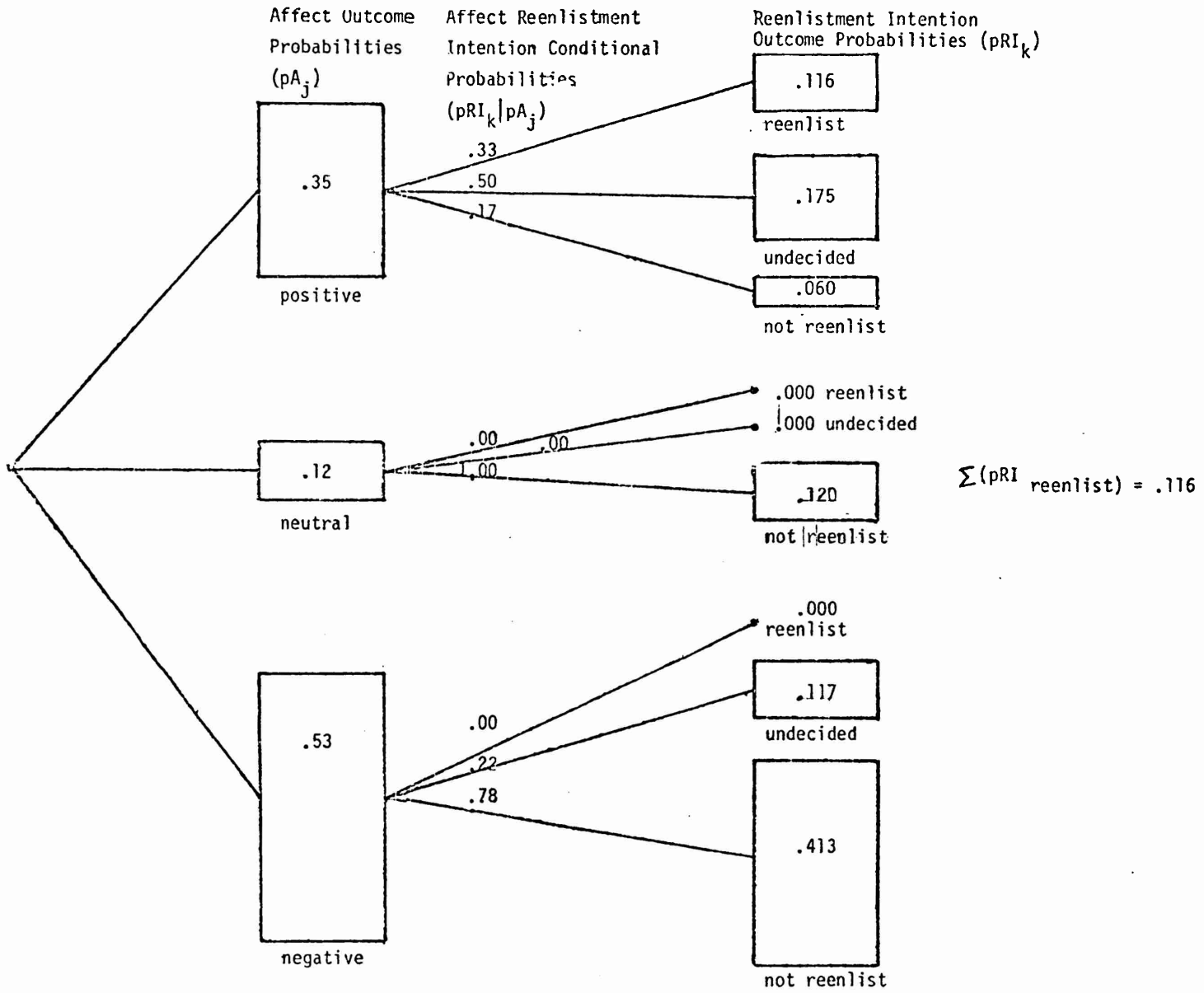

Figure 10. Projected outcomes from hypothetical belief change on Cluster IV, assuming that all respondents indicate that the Navy is equitable in its extrinsic elements.

In terms of administrative action, there are clearly a number of avenues that might be taken to enhance the Navy's image along these lines, and it is only possible to focus on a very few here. Moreover, as evidenced by the belief outcome probabilities, there is a great deal of room for improvement. From a practical standpoint, some of the simplest administrative interventions could provide a focus. Along these lines, administrative action might be focused on increasing the possibilities for individuals to change their Navy occupation or rating. This recommendation is consistent with suggestions made in previous reports (cf. Glickman, et al., 1973). Thus, enlisted men are forced by the system to make occupational choice decisions at an early point in time, when they have little information or experience to serve as a guide in decision-making. As a consequence, many men feel that they have made a mistake and are "trapped" in their current Navy occupation. By providing increased transfer and training opportunities, such men would come to have an increased measure of perceived "fate control" and greater feeling that the Navy manpower system is an equitable one.

Another recommendation that might be derived from reenlistment outcomes associated with Cluster IV, is concerned with the perception that many men have regarding the difficulty of having a good marriage while in the Navy. Despite this problem, there has been little evidence produced regarding the link of the enlisted man to his family and the impact of his family life on the organization. The data presented here provide a picture of the Navy that is not very flattering in this regard. A substantial proportion of these men believe that the Navy makes it difficult to have a good marriage, and ultimately one of the consequences of this belief is a less than optimum level of interest in reenlisting. The Navy could take a number of steps in this area to reduce the uncertainties and difficulties that the enlisted man faces as he confronts two mistresses, the Navy and his wife. Scant attention has been paid to providing psycho-social institutional support to Navy wives (as distinct from dependent benefits). As a social institution the Navy has an opportunity to contribute to the self-development of Navy wives and family members through offering educational opportunities, counseling services, child-care facilities, etc., that would at the same time enhance the enlisted man's perception that the Navy provides equitably for its own. We would most certainly recommend that research and/or action programs be undertaken in this area.

Finally, Cluster X (Recognition of Competence) requires attention. This belief cluster is concerned with whether the individual perceives that his abilities are given sufficient recognition and with whether he is treated with respect by his superiors. Shown in Figure 6, 55% of the sample indicate that they feel that there is sufficient recognition of competence, while 45% do not hold this belief.

If one posits that an administrative change might be introduced to impact on an individual's beliefs regarding the level of recognition of competence, hypothetical enlistment intention outcomes might result as shown in Figure 11. Assuming that 100% of the sample held beliefs that the Navy provided sufficient recognition of competence, the sum of hypothetical reenlistment intention outcomes yields an overall probability of .093 that an individual would evidence interest in reenlisting. This figure represents a gain of 19% and would require belief change on the part of 45% of the sample.

In light of the extent of belief change required, and concomitant resources necessary to achieve such change, administrative interventions in this area should be relegated to a second-order priority. Thus, it would not appear that from a cost-benefit standpoint there is sufficient to be gained by focusing on increasing the level of competence recognition as a means of increasing the reenlistment rate. Such interventions (e.g., providing performance bonuses for good work, non-monetary awards, etc.) may still have value in terms of increasing productivity, but do not seem to yield sufficient benefits by way of reenlistment intention indices.

In summary, the analysis of the maximum likelihood that administrative interventions might have in terms of reenlistment intention indices, reveals that there are three sets of beliefs that possess the greatest potential for achieving an increase in the number of persons interested in reenlisting in the Navy. Table 10 provides an overview of the outcome of this analysis in terms of the maximum reenlistment intention that might be realized by administrative intervention in each area. Recommended areas for policy and administrative change are shown with an asterisk.

The three recommended areas revolve around the enlisted man's belief that: (1) he is able to do work in which he has an interest, (2) Proficiency Pay and Variable Reenlistment Bonuses are fair for his rate, and (3) there is equity in extrinsic features of the Navy environment. Two belief areas

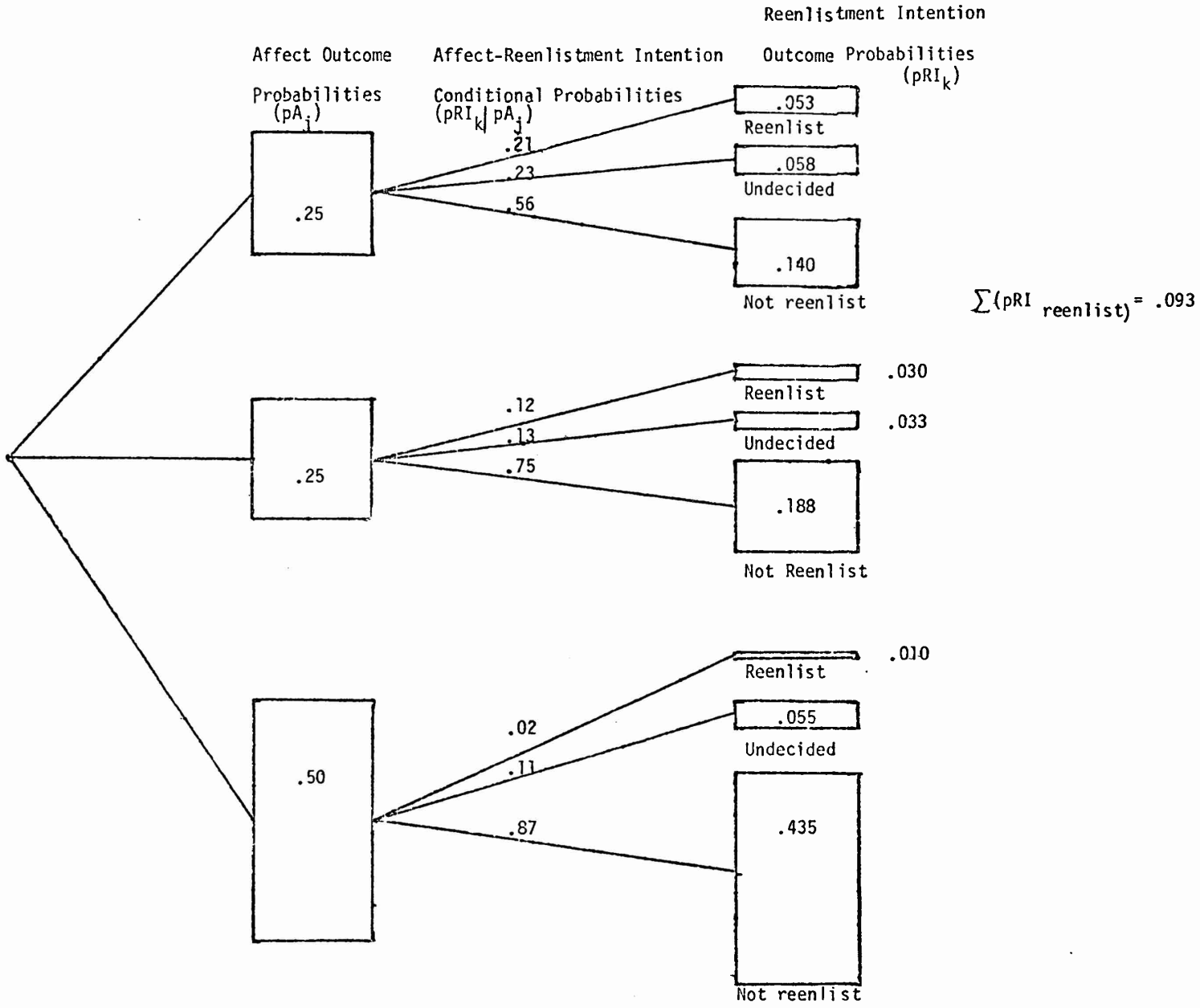

Figure 11. Projected outcomes from hypothetical belief change on Cluster X, assuming that all respondents indicate that they find sufficient recognition of competence in the Navy.

TABLE 10

Summary of Analysis of Impact of Potential Administrative Interventions

Belief Area for Administrative Intervention	Maximum Reenlistment Intention Probability	Belief Change Required
Ability to do work one would like to do (Item 1)*	.112	48%
Fairness of Proficiency Pay and Variable Reenlistment Bonus (Item 10)*	.097	34%
Valued Aspects of Navy Life (Cluster I)	.084	8%
Equity in Extrinsic Elements (Cluster IV)*	.116	96%
Recognition of Competence (Cluster X)	.093	45%

*Recommended areas for administrative or policy change

were ruled out as loci for policy change by virtue of either limited benefit in terms of reenlistment intention probabilities or limited potential for belief change.

DISCUSSION

As part of an attempt to gain a fuller understanding of the process by which individuals make decisions regarding whether to leave or remain in an organization, this study of Navy enlisted personnel provides a picture of psychological decision-making patterns that are important from both a theoretical and an administrative point of view. Conclusions having theoretical importance will be described first. Implications for administrative and policy directions will follow.

Theoretical implications. In general, the findings of this report are consistent with the career motivation model described in an earlier report (Glickman, Goodstadt, Korman & Romanczuk, 1973). On the basis of evidence gathered in this study to validate the career motivation model, the chain of psychological processes in reenlistment decision-making begins with a set of organizational conditions that lead to various beliefs held by individuals regarding the organization. These beliefs then further shape affective dispositions toward the organization. In turn, affective dispositions are closely related to expressed reenlistment intention.

As part of validating the career motivation model it was hypothesized that the relationship between affective dispositions and reenlistment intention would be stronger than the relationship between organizational beliefs and reenlistment intention. The results provide an indication that few organizational beliefs are significantly related to reenlistment intention, while there is a statistically significant relationship between affective indices and expressed reenlistment intention.

In an effort to further describe the career motivation model as part of this study, the data provide amplification along several dimensions. First, it was found that reenlistment intention could be predicted in a significant fashion from data on affective states, while organizational beliefs are closely related to such affective indices. Second, the data show that there are few moderator effects impinging on relationships

between organization beliefs, affective dispositions and reenlistment intention. The fact that such relationships are unaffected by length of service, educational status or occupational rating suggests the career motivation model is one that has applicability across a wide variety of populations and subgroups. Moreover, while persons in different groups may be more or less likely to enlist, the factors impinging on reenlistment decision-making are virtually the same for everyone.

Implications for manpower administration and policy-making. The data described in this report also suggest that belief-affect-reenlistment intention relationships may provide a basis for recommending administrative actions directed at increasing interest in reenlistment. Since the development of an interest in reenlisting initially hinges upon particular beliefs regarding the organization, environmental and policy changes that affect such beliefs among enlisted personnel may initiate a chain of events that will have an impact on reenlistment intention.

Examination of probablistic relationships among belief, affect and reenlistment intention has shown that by hypothetically altering particular beliefs, variation would take place in the expected value of reenlistment intention. As a result of these forecasts, three potentially valuable areas for administrative intervention were identified, while two sets of belief changes were evaluated as being less useful, from the standpoint of return upon investment of resources required for increasing the probability of reenlistment intention. The three recommended areas for administrative intervention will be described more fully below.

a. Perceived inability of enlisted men to do the kind of work that they would like to do. In several previous reports (Glickman, et al., 1973, Korman, et al., 1973), the importance of the individual's feelings of "fate control" as a contributing factor in career motivation was documented. In the present study, the enlisted man's beliefs regarding his ability to do work in which he is interested appear to play a critical role in reenlistment decision-making and is therefore consistent with previous findings.

One of the conditions that may contribute to a lack of "fate control" in terms of doing work of interest is the fact that Navy enlisted men must make an occupational choice at a time when they have little experience or information that is necessary for effectively making such decisions. Moreover, once the individual decides to enter a particular rating, there is little opportunity for him to change his occupational area, thereby leading to the feeling that if he has made a mistake, he cannot embark upon a new career path.

There are numerous personnel policies that affect enlisted men in this regard, and several approaches might be taken to bring about a better fit between individual job interests and the work that the individual is assigned. As noted in an earlier report (Glickman et al., 1973), there is a need to provide the enlisted man with more complete information regarding his occupational options. Such information could be provided by means of in-depth counseling at the completion of recruit training to allow the individual to make a more reasoned decision regarding the occupational area he will enter. As a consequence, a better fit between individual interests and occupational choice might be achieved; moreover, the individual's occupational expectations might be made more accurate, thereby reducing later problems associated with expectancy disconfirmation (cf. Glickman, et al., 1973).

It might be noted that an expanded in-depth counseling program need not be focused solely on recruit occupational decision-making. Rather, such information channels should be expanded to accommodate the occupational decision-making needs of all enlisted men throughout the Navy. We emphasize the introduction of an expanded counseling function at the end of recruit training, since such counseling would be most likely to have a long-lasting effect throughout a man's tenure in the Navy. Thus, early appropriate decision-making will prevent later problems of poor fit between interests and occupational choice.

Another potential means for increasing the enlisted man's belief that he is able to do the kind of work he would like to do would focus on the possibility of transfer across ratings. At the present time, enlisted men are permitted to change ratings. However, such changes are difficult to undertake and not open to all. If greater flexibility were programmed into

rating change policies, benefits might be derived in terms of increased interest in reenlisting (not to mention potential increases in productivity). Should enlisted personnel be permitted greater latitude in changing ratings, there would be an increased likelihood that they would find jobs that were interesting, thereby creating a more pleasant situation for themselves in the Navy.

An additional means of dealing with the problem of men who do not feel that they are doing work they like to do, is through the provision of cross-training. Where individuals could be permitted to select two occupational specialities instead of one, they might double the probability that they would find work in which they are interested. By having training in more than one skill, the individual has greater flexibility since he can try each area to best determine where his interests lie. Such cross-training would also broaden the skills of the individual, making him more valuable to the organization as well.

b. Perceived unfairness of Proficiency Pay and Variable Reenlistment Bonuses. On the basis of data reported here, it would appear that current Proficiency Pay and Variable Reenlistment Bonuses provide a built-in source of discontent that may offset their effectiveness in creating a pool of men who will be retained in the organization. Thus, 96% of our sample indicated that these bonuses are considered unfair for their rating; this despite the fact that our sample was drawn from critical ratings whose bonus levels are among the highest in the service.

It may very well be that VRB and ProPay are not viewed as equitable by enlisted personnel who compare these rewards with the potential wages expected to be earned in the civilian sector. Perhaps a more plausible reason, however, is the fact that these are bonuses not tied directly to the quality of individual work. Were the receipt of ProPay or the offering of a high Variable Reenlistment Bonus made contingent upon excellence in performance, the bonuses might themselves gain in effectiveness, and such a change could lead to the perception that Navy bonuses are more equitable.

In support of this recommendation, our findings from evaluation of experimental reenlistment incentives (Frey, Goodstadt, Romanczuk & Glickman, 1974) reveal that pay bonuses made contingent upon high quality performance are relatively effective in stimulating interest in reenlistment among enlisted personnel. Thus, 10% or 25% pay bonuses for good work were among the most potent incentives for potential use in increasing the number of persons who would evidence interest in reenlisting in the Navy for a second tour of duty.

In light of these findings, we would recommend that either current incentives be made contingent upon achieving established criteria of "good work" or that additional incentives be developed to reward individuals who display exceptional competence on the job. Such a recommendation is also consistent with principles of operant conditioning which suggest that for reinforcement to be most effective it must be administered contingent upon the emission of appropriate behaviors (cf. Skinner, 1953).

c. Perceived inequity in extrinsic elements. As described earlier, the vast majority of our sample of enlisted personnel indicated that they perceive a basic inequity in extrinsic elements characteristic of the Navy. By extrinsic elements, we mean the contextual features of the Navy that are linked to satisfaction with the organization, but are not directly related to intrinsic qualities and satisfactions derived from work itself. Included in this category of extrinsic elements were nine items that clustered together (see Table 5) and encompassed: (1) difficulty of having a good marriage while in the Navy, (2) cramped living quarters, (3) lack of uniformity in application of discipline, (4) difficulty associated with changing one's rate, (5) non-comparability of Navy and civilian pay, (6) unnecessary changes in plans and schedules, (7) differences in the way commanding officers carry out policies, (8) the lack of seriousness with which one's choice of duty station is treated, and (9) amount of sea duty.

While these nine clustered elements provide a broad base from which recommendations might be developed, only a few selected aspects can be discussed here. We have elected to focus on two elements: (1) difficulty associated with maintaining a marriage while in the Navy, and (2) difficulty in changing one's rating.

Until recently there has been little attention and/or programmatic effort devoted to the examination or amelioration of marital problems that result from conflict between the Navy institution and the institution of marriage. Thus, because of extensive sea duty, many enlisted persons voice unhappiness as a result of separation from their wives and family, while the potential for such unhappiness may also serve as a deterent to marriage among many enlisted men (Glickman, et al., 1973).

While being part of the Navy and being married may engender intrinsic conflict, there is much that could be done to alleviate some of the sources of frustration and resentment that have developed. As a social institution, the Navy is in a most opportune position to provide greater support (social, as well as financial) for the Navy family. To date, the major emphasis in this area has been upon providing housing, dependent allowances, and medical benefits to wives and families of Navy personnel. Yet, given the comments of enlisted men and the data we have collected, these benefits are clearly not sufficient to overcome perceived inequities.

As a means of dealing with such problems, the kinds of support the Navy could reasonably provide would be several. First, educational benefits could be provided for wives and children of enlisted personnel to allow them to pursue additional avenues of self-development. Second, vocational and guidance counseling could be offered to Navy wives and family members to allow them to obtain more information about occupational areas that would be open to them. Third, child care facilities could be established to permit Navy wives to undertake vocational and educational endeavors. These three programs might then make it possible for Navy family members to maintain their independent status and to enable them to find additional sources of fate control and satisfaction in the absence of husbands and fathers.

Such programs obviously have much social good attached to them, while at the same time, they may have additional benefits in terms of increased retention of qualified manpower. As indicated in our projections of impact on reenlistment intention, substantial positive belief changes regarding equity in extrinsic elements would likely result in a fair increase in the number of individuals evidencing an interest in reenlisting. Thus, if enlisted personnel were to find that the Navy provided some additional social

supports for their family, such programs could go a long way toward alleviating a primary source of discontent regarding the quality of life of the Navy family, while increasing interest of enlisted men in reenlisting.

A second course of administrative action might also impact on perceived "inequities of extrinsic elements" in the Navy. One of the key problems associated with Navy occupations is the difficulty associated with changing one's rating or occupational specialty. As noted in other recommendations described above, programming flexibility into the enlisted man's opportunities to change his rate would probably increase the potential for him to find fulfillment in his Navy job and allow him to do the kind of work he would like to do. Increased flexibility in rating transfers would also allow the individual to feel that the Navy is equitable in its extrinsic characteristics.

Summary of recommendations. On the basis of findings, five administrative and policy directions have been described as a means of changing beliefs that eventuate in lessened reenlistment intention. These recommendations may be summarized as follows:

1. Increased emphasis should be placed on occupational counseling, particularly near the end of recruit training when individuals are making occupational choices.

2. Allow for greater possibility of transfer across ratings.

3. Provide more opportunity for enlisted men to obtain cross-training, to avail themselves of increased occupational skills and competencies.

4. Establish new bonuses or revise the current bonus system so that rewards are predicated on high performance.

5. Provide greater psycho-social supports for wives and families of Navy personnel focused on educational opportunities, vocational counseling and child-care facilities.

REFERENCES

Brim, O. G., Jr., & Wheeler, S. Socialization after childhood: Two essays. New York: Wiley, 1966.

Fishbein, M. A consideration of beliefs, attitudes, and their relationship. In I.D. Steiner & M. Fishbein (Eds.) Current studies in social psychology. New York: Holt, Rinehart & Winston, 1965.

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

Fruchter, B. Introduction to factor analysis. New York: D. Van Nostrand Company, 1954.

Glickman, A. S. The career motivation survey: Overall attitude and re-enlistment trends. U.S. Naval Personnel Research Field Activity, Research Report (61-2), June 1961.

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

Herzberg, F., Mausner, B., & Snyderman, B. B. The motivation to work. New York: Wiley, 1959.

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

McQuitty, L. L. A method of pattern analysis for isolating typological and dimensional constructs. San Antonio, Texas: Headquarters Air Force Personnel and Training Research Center, Research Bulletin TN 55-62 (1955).

Skinner, B. F. Science and human behavior. New York: Free Press, 1953.

Smith, A. J. & Clark, R. A. The relationship between attitudes and beliefs. Journal of Personality and Social Psychology, 1973, 26, 321-331.

Van Maanen, J. "Breaking in" : A consideration of organizational socialization. Irvine, California: University of California, 1972.

APPENDIX A

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CAMOSUR 73

This is a Career Motivation Survey. It is being carried out by the American Institutes for Research (AIR), with the support of the Office of Naval Research. AIR is a private scientific research organization.

The idea behind this survey is to find out what conditions in the Navy make people want to get out, and what kinds of situations make people want to stay in. With this information, it will be possible to take steps toward making the Navy a better place in which to live and work. Of course, the best way to get this information is to ask people, like yourself, who are now in the Navy. So we are sending this questionnaire to more than 1,000 men in the Navy.

We need to know some things about you in order to understand the information we will get, but your name and answers will not be seen by anyone in the Navy. Navy officials will only be given the analysis of the survey results.

It will only take about 20 minutes to complete this questionnaire. Please answer each item with careful thought. There are no "right" or "wrong" answers. We want your honest opinions. Only in this way can we help to bring about changes that will make the Navy a better organization.

When you have answered all of the questions, put this questionnaire in the envelope provided and mail it back. The envelope is already addressed and has a stamp on it. Please do this as soon as you can--on the day that you get this, if possible. We hope to get returns from nearly everyone to whom this questionnaire is sent, so that the results will be most useful.

Please fill in the information required below:

Name _____
Last First Middle Initial

Date of birth _____
Day Month Year

Rate/Rating _____

Date of entry into active service _____
Day Month Year

Social Security Number _____

Circle one → Years of education completed
9 10 11 12 13 14 more

I. Instructions USE A PENCIL

Place an "X" in the box next to the statement which best answers each of these two questions.

A. What are you most likely to do after your first enlistment?

- ☐ Work for an employer, on salary, wages, or commission.
- ☐ Go to full-time school or college.
- ☐ Farm for myself.
- ☐ Have my own business.
- ☐ Reenlist in the Navy.
- ☐ I haven't decided what I will do.

B. How definite are your plans about what you'll do when your enlistment expires?

- ☐ I know exactly what I am going to do.
- ☐ I am pretty sure about what I am going to do.
- ☐ I have been doing some thinking about that, but have not yet made up my mind.
- ☐ I haven't given it much thought.
- ☐ There is no sense in trying to make plans.

II. Instructions

In this section there are short statements about the Navy that look like this:

Example: My father thinks I should [stay in] [get out of] the Navy.

We would like you to do two things with each statement.

Step 1. Make the statement come closest to saying what you believe or have experienced. Do this by crossing out the box containing the words which you feel do not apply. Below is an example that shows how to mark the statement when your "father thinks you should stay in the Navy."

Example: My father thinks I should [stay in] [~~get out of~~] the Navy.

Step 2. Indicate what effect the situation described has on your feelings about staying in or getting out of the Navy. Does the situation make you want to get out? Does it make you want to stay in? Does it have no effect on your feelings about staying in or getting out? Give your answer by placing an "X" in the brackets as in the example below.

Example:

What effect did this have on your feelings about staying in or getting out of the Navy?

Makes staying in very attractive	Makes staying in somewhat attractive	Makes no difference	Makes getting out somewhat attractive	Makes getting out very attractive
IN	in	no effect	out	OUT
[ ]	[X]	[ ]	[ ]	[ ]

My father thinks I should [stay in] [~~get out of~~] the Navy.

In the example above, the statement shows that your father thinks that you should stay in and that your father's feelings made staying in somewhat attractive to you.

DO NOT SKIP ANY STATEMENTS BECAUSE YOU ARE UNSURE: MAKE A DECISION.

Step 2.

WHAT EFFECT DOES THIS HAVE ON YOUR THINKING ABOUT STAYING IN OR GETTING OUT OF THE NAVY?

Step 1.

CROSS OUT THE BOX THAT YOU FEEL DOES NOT APPLY.

Makes staying in very attractive	Makes staying in somewhat attractive	Makes no difference	Makes getting out somewhat attractive	Makes getting out very attractive		
IN	in	no effect	out	OUT		
[ ]	[ ]	[ ]	[ ]	[ ]	1.	Navy people [are] [are not] looked up to by civilians.
[ ]	[ ]	[ ]	[ ]	[ ]	2.	I am [able] [not able] to do the kind of work I would really like to do.
[ ]	[ ]	[ ]	[ ]	[ ]	3.	Much of the equipment I work with [is] [is not] too hard to maintain.
[ ]	[ ]	[ ]	[ ]	[ ]	4.	Promises by the Navy [are] [are not] usually kept.
[ ]	[ ]	[ ]	[ ]	[ ]	5.	There are [very few] [too many] people in the Navy who pay little attention to cleanliness.
[ ]	[ ]	[ ]	[ ]	[ ]	6.	My supervisors usually organize work [well] [poorly].
[ ]	[ ]	[ ]	[ ]	[ ]	7.	There are [very few] [too many] changes in plans and schedules that could be avoided.
[ ]	[ ]	[ ]	[ ]	[ ]	8.	[Most] [very few] officers watch your work too closely.
[ ]	[ ]	[ ]	[ ]	[ ]	9.	There is [a lot of] [very little] hassling about regulations such as haircuts, uniforms, and the like.
[ ]	[ ]	[ ]	[ ]	[ ]	10.	The Proficiency Pay (ProPay) and Variable Reenlistment Bonus (VRB) for my rate is [fair] [unfair].
[ ]	[ ]	[ ]	[ ]	[ ]	11.	It is [hard] [easy] to advance in my rate.
[ ]	[ ]	[ ]	[ ]	[ ]	12.	During the next five years, I could expect to make [more] [less] money in a civilian job than in the Navy.

Step 2.

WHAT EFFECT DOES THIS HAVE ON YOUR THINKING ABOUT STAYING IN OR GETTING OUT OF THE NAVY?

Step 1.

CROSS OUT THE BOX THAT YOU FEEL DOES NOT APPLY.

Makes staying in very attractive	Makes staying in somewhat attractive	Makes no difference	Makes getting out somewhat attractive	Makes getting out very attractive		
IN	in	no effect	out	OUT		
[ ]	[ ]	[ ]	[ ]	[ ]	13.	Higher rated enlisted men and officers [have] [do not have] to many special privileges.
[ ]	[ ]	[ ]	[ ]	[ ]	14.	Usually, when a man reenlists, the Navy [gives] [does not give] him the kind of duty he wants.
[ ]	[ ]	[ ]	[ ]	[ ]	15.	Usually, a man's good work [is] [is not] noticed.
[ ]	[ ]	[ ]	[ ]	[ ]	16.	[Too many] [Very few] chiefs and petty officers I have worked for take unfair advantage of enlisted men.
[ ]	[ ]	[ ]	[ ]	[ ]	17.	Most Navy supervisors expect [high] [poor] quality work from their men.
[ ]	[ ]	[ ]	[ ]	[ ]	18.	Most jobs I have had required [a lot of] [very little] skill and responsibility.
[ ]	[ ]	[ ]	[ ]	[ ]	19.	[Most] [Too few] chiefs and petty officers show respect for the ability of enlisted men.
[ ]	[ ]	[ ]	[ ]	[ ]	20.	Usually there is [no one] [someone] to talk with when you have problems.
[ ]	[ ]	[ ]	[ ]	[ ]	21.	My recruiter [did] [did not] "tell it like it is" about the Navy.
[ ]	[ ]	[ ]	[ ]	[ ]	22.	There is [more] [no more] racial trouble in the Navy than in civilian life.
[ ]	[ ]	[ ]	[ ]	[ ]	23.	Usually, a person's choice of duty stations [is] [is not] treated seriously.

Step 2. WHAT EFFECT DOES THIS HAVE ON YOUR THINKING ABOUT STAYING IN OR GETTING OUT OF THE NAVY?					Step 1. CROSS OUT THE BOX THAT YOU FEEL DOES NOT APPLY.	
Makes staying in very attractive	Makes staying in somewhat attractive	Makes no difference	Makes getting out somewhat attractive	Makes getting out very attractive		
IN	in	no effect	out	OUT		
[ ]	[ ]	[ ]	[ ]	[ ]	24.	The rights of the individual sailor [are] [are not] generally respected.
[ ]	[ ]	[ ]	[ ]	[ ]	25.	I [have] [have not] often been told how to do my job by a person who didn't know how to do it himself.
[ ]	[ ]	[ ]	[ ]	[ ]	26.	The military housing available for enlisted men is [poor] [good] quality.
[ ]	[ ]	[ ]	[ ]	[ ]	27.	Navy supervisors usually [expect] [do not expect] too much work from enlisted men.
[ ]	[ ]	[ ]	[ ]	[ ]	28.	[Most] [Too few] of the petty officers and chiefs I have known stick up for their men.
[ ]	[ ]	[ ]	[ ]	[ ]	29.	Different supervisors [often] [do not often] give me orders that go against each other.
[ ]	[ ]	[ ]	[ ]	[ ]	30.	[Most] [Too few] men get the training they need for their job.
[ ]	[ ]	[ ]	[ ]	[ ]	31.	My supervisors usually [are] [are not] willing to try new ways of getting a job done.
[ ]	[ ]	[ ]	[ ]	[ ]	32.	It is [hard] [easy] to change your rate.
[ ]	[ ]	[ ]	[ ]	[ ]	33.	[Too many] [Very few] supervisors are annoyed when you disagree with them.
[ ]	[ ]	[ ]	[ ]	[ ]	34.	The Navy [does] [does not] take unfair advantage because you cannot quit when you want to.
[ ]	[ ]	[ ]	[ ]	[ ]	35.	The amount of moving from one duty station to another is [OK] [too much].

Step 2. WHAT EFFECT DOES THIS HAVE ON YOUR THINKING ABOUT STAYING IN OR GETTING OUT OF THE NAVY?					Step 1. CROSS OUT THE BOX THAT YOU FEEL DOES NOT APPLY.	
Makes staying in very attractive	Makes staying in somewhat attractive	Makes no difference	Makes getting out somewhat attractive	Makes getting out very attractive		
IN	in	no effect	out	OUT		
[ ]	[ ]	[ ]	[ ]	[ ]	36.	Medical care [is] [is not] as good as it is supposed to be.
[ ]	[ ]	[ ]	[ ]	[ ]	37.	[Too many] [Very few] officers I have worked for take unfair advantage of enlisted men.
[ ]	[ ]	[ ]	[ ]	[ ]	38.	There [is] [is not] too much sea duty.
[ ]	[ ]	[ ]	[ ]	[ ]	39.	There [is] [is not] too much difference in how commanding officers carry out Navy policies.
[ ]	[ ]	[ ]	[ ]	[ ]	40.	Leave policies [are] [are not] flexible enough to allow for personal emergencies.
[ ]	[ ]	[ ]	[ ]	[ ]	41.	Usually, when I am told to do things, I [am] [am not] given reasons.
[ ]	[ ]	[ ]	[ ]	[ ]	42.	[Most] [Too few] chiefs and petty officers I have known accept suggestions from their men.
[ ]	[ ]	[ ]	[ ]	[ ]	43.	I get to travel [a great deal] [very little].
[ ]	[ ]	[ ]	[ ]	[ ]	44.	[Most] [Too few] officers I have known accept suggestions from enlisted men.
[ ]	[ ]	[ ]	[ ]	[ ]	45.	Boot camp [involves] [does not involve] too much mental punishment.
[ ]	[ ]	[ ]	[ ]	[ ]	46.	The Navy makes it [easy] [hard] for enlisted men to have a good marriage.
[ ]	[ ]	[ ]	[ ]	[ ]	47.	The Navy puts up with [less] [more] "goofing off" than civilian bosses.

Step 2. WHAT EFFECT DOES THIS HAVE ON YOUR THINKING ABOUT STAYING IN OR GETTING OUT OF THE NAVY?					Step 1. CROSS OUT THE BOX THAT YOU FEEL DOES NOT APPLY.	
Makes staying in very attractive	Makes staying in somewhat attractive	Makes no difference	Makes getting out somewhat attractive	Makes getting out very attractive		
IN	in	no effect	out	OUT		
[ ]	[ ]	[ ]	[ ]	[ ]	48.	Career personnel usually [accept] [resist] new policy changes.
[ ]	[ ]	[ ]	[ ]	[ ]	49.	Usually, if you are promised a school, you [get it] [don't get it].
[ ]	[ ]	[ ]	[ ]	[ ]	50.	If you have a good excuse, you [will] [will not] usually get punished for being late to work.
[ ]	[ ]	[ ]	[ ]	[ ]	51.	Most sailors [like] [dislike] the new Navy uniform.
[ ]	[ ]	[ ]	[ ]	[ ]	52.	Prices at the Navy PX's are usually [lower] [higher] than they are at civilian stores.
[ ]	[ ]	[ ]	[ ]	[ ]	53.	Living quarters aboard [many] [very few] ships are too cramped.
[ ]	[ ]	[ ]	[ ]	[ ]	54.	Generally, the work hours are [shorter] [longer] than those in civilian jobs.
[ ]	[ ]	[ ]	[ ]	[ ]	55.	[Most] [Too few] officers stick up for their men.
[ ]	[ ]	[ ]	[ ]	[ ]	56.	Usually, important jobs [are] [are not] assigned to the best men available.
[ ]	[ ]	[ ]	[ ]	[ ]	57.	I have [often] [not often] been ordered to do "busy work" or other unimportant jobs.
[ ]	[ ]	[ ]	[ ]	[ ]	58.	[Most] [Very few] chiefs and petty officers watch your work too closely.
[ ]	[ ]	[ ]	[ ]	[ ]	59.	[Most] [Too few] officers show respect for the ability of enlisted men.

Step 2. WHAT EFFECT DOES THIS HAVE ON YOUR THINKING ABOUT STAYING IN OR GETTING OUT OF THE NAVY?					Step 1. CROSS OUT THE BOX THAT YOU FEEL DOES NOT APPLY.	
Makes staying in very attractive	Makes staying in somewhat attractive	Makes no difference	Makes getting out somewhat attractive	Makes getting out very attractive		
IN	in	no effect	out	OUT		
[ ]	[ ]	[ ]	[ ]	[ ]	60.	Discipline is applied [the same way] [differently] by various commanding officers.
[ ]	[ ]	[ ]	[ ]	[ ]	61.	Discipline is applied [the same] [differently] for black and white sailors.
[ ]	[ ]	[ ]	[ ]	[ ]	62.	The Navy's educational opportunities (high school or college) are [good] [bad].

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