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The Structure of Job Satisfaction among New England Fishermen and Its Application to Fisheries Management Policy

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Source: *American Anthropologist*, Dec., 1988, New Series, Vol. 90, No. 4 (Dec., 1988), pp. 888-901

Published by: Wiley on behalf of the American Anthropological Association

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## The Structure of Job Satisfaction Among New England Fishermen and Its Application to Fisheries Management Policy

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*This article examines the structure of job satisfaction among New England fishermen using three different measures. The various measures of job satisfaction were found to be complexly related to other sociocultural variables such as age, education, years of fishing experience, type of fishing, ethnicity, and home port. The policy implications of these findings are discussed as they relate to fishery development and management.*

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THERE IS A HISTORY OF INTEREST IN JOB SATISFACTION among applied anthropologists. In a few cases the concept of "job satisfaction" is explicit in the research (cf. Alston, Lowe, and Wrigley 1974; Roy 1959), but in others it is implicit in the anthropologist's attempt to understand aspects of the fit between a people and their occupational roles in a changing world (e.g., Hobart 1982; Stoffle 1975; Ferman and Aiken 1967; Cone 1973). The changes brought about by fishery management can take many forms, ranging from minor alterations in species sought and techniques used to drastic shifts in style from inshore to offshore fishing or possible displacement of individuals from the industry under limited entry plans. These changes, no matter how minor, have the potential of affecting the structure of a person's work, an aspect of life that has been shown to play an extraordinarily important psychological, social, and economic role in the well-being of the individual in American culture. The interrelationship between potential fisheries management effects on the structure of work, job satisfaction, and the social, physical, and psychological well-being of the fisherman are therefore important topics for applied anthropologists interested in fisheries development and management.

The applied anthropologist's interest in determining how social and cultural characteristics of people relate to their satisfaction with and performance in changing occupational roles can be useful in developing an understanding of some of the potential sociocultural impacts of specific management measures as applied to the commercial fishery. This article will explore the structure of job satisfaction by using existing theory to propose practical solutions to the problem of developing fisheries management policy that minimizes negative social consequences while conserving stocks and economic viability.

### Job Satisfaction as a Pivotal Variable

On the basis of previous research concerning job satisfaction, it can be assumed that the path leading from aspects of a fisherman's job to job satisfaction and on to social and health effects is a relatively complex one. Research has demonstrated a relationship between various job characteristics and job satisfaction (e.g., Voydanoff 1978; Kalleberg 1977; Locke and Whiting 1974; Kohn and Schooler 1973; Armstrong 1971; Dunnette,

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Campbell, and Hakel 1967). Job satisfaction itself, however, is often indirectly related to outcomes that have potential social impact. Among variables related to job satisfaction that have social impact, perhaps the most important is longevity. Palmore (1969) reports that work satisfaction is more important in predicting longevity than physical function (as rated by a physician), tobacco use, or genetic inheritance. The social impact of longevity on both the family and community is so obvious that it need not be elaborated here. Further, heart disease and other illnesses that reduce a person's ability to function in social roles have also been related to work dissatisfaction (HEW 1973).

Other studies have demonstrated a relationship between job satisfaction and mental health. For example, Kornhauser (1965) found that jobs most conducive to mental health were those in which workers tend to be most satisfied. Perhaps most important, he also found that within occupational categories mental health was correlated with job satisfaction, and that satisfied workers in lower-level jobs differed little in mental health from satisfied workers in higher-level jobs. This led him to conclude that "job satisfaction is the link between objective conditions prevailing at different occupation levels and the observed variation in mental health" (Kornhauser 1965:263). HEW (1973), summing up 20 years of research by the Survey Research Center at the University of Michigan, notes that the absence of job satisfaction is related to psychosomatic illnesses, anxiety, low self-esteem, worry, tension, and impaired interpersonal relationships. There is no doubt that mental health problems such as these impair one's ability to function normally in society. In addition, Gelles (1974) and Strauss (1979) report a clear relationship between some of the mental health correlates of job satisfaction and family violence, an increasingly serious social problem. Finally, job satisfaction has been related to absenteeism, turnover (Martin and Miller 1986; Robinson, Athanissou, and Head 1969), performance (Hollinger and Clark 1982; Inkson 1978; Jacobs and Solomon 1977), and productivity (Srivastva et al. 1977), four variables with both economic and social impact.

In sum, previous research has shown that job satisfaction is an important pivotal variable related both directly and indirectly to a wide variety of other social and economic variables. The relationships are positive, with high job satisfaction correlated with positive social and economic impacts, and low satisfaction with negative impacts. These relationships justify focusing on job satisfaction and its social and occupational correlates among New England fishermen as a means of providing applied anthropologists with the understanding needed to make policy recommendations in the context of fisheries management decision making. Because job satisfaction is such a pivotal variable, policy that results in its maximization will help ensure positive social consequences.

## Methods

Data for this study were gathered in the New England region under the jurisdiction of the New England Fisheries Management Council. Data come from fishermen who use the facilities at Point Judith, Rhode Island; New Bedford, Massachusetts; and three locations on the Pemaquid Peninsula, Bristol, Maine (Round Pond, New Harbor, and Pemaquid Harbor). A sample of 42 fishermen was interviewed at New Bedford, which is primarily a large offshore dragger, long-trip (four or more days) port. Seventy-nine fishermen were interviewed at Point Judith, which consists primarily of short-trip (less than four days), smaller inshore vessels and inshore lobstermen. Finally, 80 fishermen formed the sample interviewed at Bristol, Maine, where most of the fishermen are inshore lobstermen. More detailed information concerning the ports and their fishermen can be found in Acheson (1978), Jessen (1978), Pollnac and Poggie (1978), Poggie and Pollnac (1978), and Poggie and Gersuny (1974).

A 22-item list (see Table 1) was used to investigate the structure of job satisfaction. Many of the items were adapted from Schletzer's (1965) 62-item scale designed to measure general job satisfaction in American culture with a number of components, not all of which were applicable to fishermen. Redundant and inapplicable items were removed

Table 1  
Rotated factor loadings of job satisfaction items.

Item	Factor		
	I	II	III
1. Time away from home.	.81	.09	.21
2. Hours spent working.	.72	.25	.17
3. Time for recreation and/or family activities.	.71	.06	.12
4. Ability to come and go as you please.	.61	-.12	.41
5. Time it takes you to get to grounds.	.47	.21	.14
6. Doing deckwork on vessel.	.41	.12	.40
7. Opportunity to be your own boss.	.39	-.21	.34
8. Community in which you live.	.39	.12	.21
9. Cleanliness.	-.03	.59	.02
10. Physical fatigue of job.	.03	.56	.02
11. Predictability of earnings.	.11	.49	.08
12. Mental pressure on job.	.18	.48	.03
13. Job safety.	.19	.45	.11
14. Your earnings.	-.19	.36	-.15
15. Healthfulness.	.21	.31	.26
16. Being out on the water.	.14	-.02	.71
17. Adventure.	.16	.05	.71
18. Challenge of job.	.18	-.01	.66
19. Working outdoors.	.23	.08	.57
20. Feeling you are doing something worthwhile.	.12	.28	.51
21. Peace of mind.	.28	.24	.34
22. Performance of state and federal officials.	.20	-.15	.22

from the list, and four items unique to the occupation of fishermen were added. Many of the items used correspond to high-frequency responses, which were derived from earlier open-ended interviews with 108 southern New England fishermen who were requested to tell what they “liked and disliked about fishing” (for a description of this sample see Poggie, Pollnac, and Gersuny 1976; Pollnac, Gersuny, and Poggie 1975). The resulting items were administered in the form of a Likert scale by asking each respondent to indicate if he were very dissatisfied, dissatisfied, neutral, satisfied, or very satisfied with each of the 22 items representing aspects of his job. Responses were coded from one to five respectively, and factor analyzed using common factor analysis and orthogonal rotation (varimax). Number of factors was determined using Kaiser’s (1960) eigenvalue cut-off of 1.00. This resulted in the same number of factors as resulted in using the Scree Test (Cattell 1966). Factor scores were calculated for each fisherman on each of the three resulting factors. The factor-loading matrix is presented in Table 1.

The three factors derived do not correspond to the intrinsic and extrinsic job characteristic classification used so commonly in sociological and psychological research related to job satisfaction (e.g., Herzberg 1966; Fox 1971). Other researchers have also noted this lack of correspondence (e.g., Voydanoff 1978). Additionally, Dyer and Parker (1975), noting the lack of agreement in the literature concerning the definition of the terms “extrinsic” and “intrinsic,” have conducted a survey of psychologists and found little consensus among them concerning the terms.

The dimensions resulting from the empirical analysis presented here appear to be related conceptually to Maslow’s (1954) hierarchy of needs, with Factor II representing the basic levels (physiological and safety), Factor I the middle level (love, belongingness, and self-esteem), and Factor III the highest level (self-actualization). Our intent here is not to test Maslow’s model but to simply note the conceptual similarity between our factors and his “levels” of needs. Smith (1976), using a different list of characteristics among

the Northwest Coast salmon fishermen, also rotated a factor that could be labeled "self-actualization." His list of characteristics was sufficiently different, however, so that this was the only comparable factor. Finally, a recent study of job satisfaction among fishermen in Nova Scotia factor analyzed the same list of items, rotating eight factors that resulted in similar clusterings of items spread out over more dimensions (Apostle, Kasdan, and Hanson 1985).

In our study two other measures of overall job satisfaction were used. Each fisherman was asked if he would still go into fishing if he had his life to live over (JSM1), and whether or not he would advise a young man to go into fishing (JSM2). The responses to these questions (no, maybe, yes) were coded 0, 1, and 2, respectively. The question concerning whether a person would enter the same occupation if he had his life to live over has been referred to as the most informative among the several available indices of job satisfaction (Robinson, Athanisiou, and Head 1969).

Based on our participant-observation research, other social and occupational variables were hypothesized to be related to job satisfaction. These independent variables are age (years), marital status (married or not), years of formal education, whether or not respondent is both owner and skipper of vessel versus all others (e.g., crewmen), number of years fishing, whether or not respondent began fishing before 20 years of age, whether or not respondent's father was a fisherman, number of relatives who are fishermen, ethnicity (foreign born or not), and fishing type (e.g., offshore dragger, inshore lobsterman, etc.). The values for these variables were obtained from responses to direct questions included in our interview schedule. In addition to being variables potentially related to job satisfaction, these variables usually form part of basic socioeconomic descriptions of fishing communities, which are used to aid in management decision making. Hence, if the variables are related to levels of job satisfaction, this information could be used to predict potential changes resulting from alternative management decisions.

## Analysis

### *Between-Group Differences in Job Satisfaction*

As the first step in the analysis, between-group differences in level of satisfaction on each occupational characteristics factor and the two overall job satisfaction measures are examined. As a means of examining intergroup differences, analyses were performed within subgroups of the sample based on port and fishing style. The port subgroupings used are Point Judith, New Bedford, and Maine. Fishing type subgroupings are (1) inshore (e.g., inshore lobstering, inshore dragging, etc.), (2) middle (pair trawling, purse seining, combination of inshore and offshore), and (3) offshore (e.g., offshore dragging, offshore lobstering). The fishermen themselves make a clear distinction between the inshore and offshore fleets. Fishing style, time at sea and away from home, and other characteristics have resulted in many sociocultural distinctions related to these fishing types (cf. Miller and Pollnac 1978; Poggie and Pollnac 1978; Pollnac and Poggie 1978; Poggie and Gersuny 1974). Another subgrouping of fishing type, based again on local distinctions, puts inshore lobstermen into one group and all other fishermen in another. This information is of use in determining potentially different impacts of management decisions upon the various subgroups. The results of these analyses are shown in Table 2.

Table 2 indicates that across ports all the job satisfaction measures are significantly different. Across fishing types, only JSM2 does not differ significantly. Finally, comparing inshore lobstermen with all other fishermen, neither Factor III (High Level Needs) nor JSM1 varies significantly across the two subgroups.

The analyses make it clear that New Bedford manifests the overall lowest levels of job satisfaction as measured by the three factors. With respect to fishing type, offshore is lowest. Point Judith is the only port with no mean values below zero, suggesting that fishermen are most satisfied there. It is interesting to note that as satisfaction with basic

**Table 2**  
**Analysis of between-group differences in level of job satisfaction on occupational characteristics factors and job satisfaction measures.**

	Mean values			<i>F</i>	<i>DF</i>	<i>p</i>
	Point Judith	New Bedford	Maine			
Factor I (Middle Level Needs)	0.02	−0.89	0.45	42.19	2 198	<.001
Factor II (Basic Needs)	0.28	0.16	−0.37	14.36	2 198	<.001
Factor III (High Level Needs)	0.35	−0.95	0.15	44.66	2 198	<.001
JSM1	1.79	1.24	1.52	7.96	2 198	<.001
JSM2	0.77	0.60	.31	20.41	2 198	<.001
	Inshore	Middle	Offshore			
Factor I (Middle Level Needs)	0.31	−0.26	−0.45	16.66	2 193	<.001
Factor II (Basic Needs)	−0.20	0.23	0.34	9.15	2 193	<.001
Factor III (High Level Needs)	0.13	0.59	−0.60	24.90	2 193	<.001
JSM1	1.61	1.79	1.35	17.57	2 193	<.05
JSM2	0.50	0.62	0.63	1.58	2 193	>.05
	Inshore lobstermen	All others				
Factor I (Middle Level Needs)	0.46	−0.25		26.12	1 194	<.001
Factor II (Basic Needs)	−0.38	0.25		30.28	1 194	<.001
Factor III (High Level Needs)	0.14	−0.09		2.26	1 194	>.05
JSM1	1.56	1.57		0.02	1 194	>.05
JSM2	0.39	0.66		14.27	1 194	<.001

needs increases, satisfaction with middle level needs decreases across the groups examined.

*Relationship of Job Satisfaction to Independent Variables*

As a means of increasing our understanding of the correlates of job satisfaction among New England fishermen, the interrelationships between various aspects of job satisfaction and a select group of sociocultural variables are examined. Stepwise multiple regression was used to determine the patterning of combined relationships between the independent variables and levels of satisfaction on each of the three job characteristics factors and the two job satisfaction measures (JSM1 and JSM2). In this procedure, all independent variables are intercorrelated with the dependent (each job satisfaction measure), and the variable that explains the most variance in the dependent is entered into the equation first. The next variable entered is the one that explains the most variance with the first controlled. This procedure is continued until all variables are entered, or until a previously set criterion is reached. In the analysis presented here, entry into the equation was restricted to variables whose F-ratio to enter was at least 2.00 or where the increase in variance explained at least 1%. When either of these criteria was not met, the procedure was halted.

We are using stepwise linear regression as a means of exploring the interrelationships between the job satisfaction measures and the independent variables. In most cases, we have no a priori reasons for predicting the types of relationships to be expected between these two sets of variables, especially when we begin to look at inter- and inraport and fishing-type differences. Stepwise multiple regression allows us to scan the data rapidly to determine the best sets of predictor variables. With this determination we can then begin to propose possible interpretations for the relationships uncovered. These alternative interpretations can then be used to generate hypotheses to be tested in future re-



search. Most important, however, they can be used provisionally to make predictions concerning the reactions of classes of individuals to specific management measures. Data for each port are analyzed separately due to the relatively significant interport differences in job satisfaction, which confound the analysis of relationships between the independent and dependent variables. For example, New Bedford has a high proportion of foreign-born fishermen compared to the other ports, and it differs significantly from the others with respect to levels of job satisfaction which, as we shall see, is probably related to fishing style. If we lump all the ports together in an analysis, we would probably find "ethnicity" (being foreign born) as a strong predictor of job satisfaction. This finding would obscure the real relationship between the variables. The results of this analysis for each port can be found in Table 3.

Table 3 indicates that there are a number of important interport differences in the correlates of job satisfaction. With respect to the Middle Level Needs Factor, it was not significantly correlated with any of the sociocultural variables in either Point Judith or New Bedford. In Maine, satisfaction on this factor was related positively with age and negatively with any fishing other than inshore lobster fishing. The Basic Needs Factor was related to quite different independent variables in Point Judith and New Bedford. In Point Judith, number of dependents and early entry were positively correlated and owner-skipper status negatively correlated with Factor Two. This tells us that in Point Judith, owner-skipper status is less likely to be satisfied with the items on the Basic Needs Factor, while those with more dependents and those who entered the occupation early are more likely to be satisfied. In New Bedford, having a father who was also a fisherman is positively correlated with this factor, and years of formal education is negatively correlated. In Maine, none of the independent variables is significantly correlated with the Basic Needs Factor.

In both Point Judith and Maine, early entry is positively correlated with satisfaction on the High Level Needs Factor. In Maine and New Bedford years of fishing experience and anything other than inshore lobster fishing manifest contrasting correlations with this factor. In Maine, those with fewer years of fishing experience and fishermen other than inshore lobstermen are more likely to be satisfied with regard to the items on the High Level Needs Factor. The opposite holds true in New Bedford. Additionally, a large number of other independent variables contribute significantly to explaining variance in satisfaction on the High Level Needs Factor in New Bedford. In this port, six independent variables account for more than 66% of the variance in Factor III factor scores.

With regard to JSM1, we once again find differential patterning between the ports. In Point Judith, marital status (being married) and early entry are positively correlated with JSM1, while in New Bedford years of fishing experience and owner-skipper status are positively correlated and number of dependents and ethnicity (being foreign born) are negatively correlated with JSM1. Finally, the independent variables are significantly related to JSM2 only in New Bedford, where four account for 30% of the variance. Overall, we have seen a great deal of variation between ports with respect to the correlates of the various job satisfaction measures.

## Discussion

### *The Structure of Job Satisfaction*

The factor analysis of levels of satisfaction on a list of occupational characteristics resulted in three empirically derived factors more conceptually related to Maslow's (1954) hierarchy of needs than the "intrinsic" and "extrinsic" job characteristic classifications so frequently employed in social research related to job satisfaction. The factors were characterized as Basic Needs (physiological and safety), Middle Level Needs (love, belongingness, and self-esteem), and High Level Needs (self-actualization). All three factors are significantly and positively related to whether or not the respondent said he

would go back into fishing if he had his life to live over (JSM1), a measure cited as the best single indicator of job satisfaction (Robinson, Athanizou, and Head 1969).

Interestingly enough, for the total sample the High Level Needs Factor is the strongest predictor of JSM1 ( $r = .31, p < .01$ ), indicating that self-actualization is a very important facet of job satisfaction among New England fishermen. This finding, at least as it relates to New England fishermen, contradicts Yadov and Kissel (1977), who claim that Soviet workers, in contrast to U.S. workers, obtain job satisfaction from higher-level motives.

### *Intergroup Differences in Job Satisfaction*

An analysis of the intergroup differences with respect to the various satisfaction measures demonstrates that, overall, the strongest differences are across the ports. The patterning of the differences on each measure reflects the relative frequency of different types of fishing in each port (e.g., Maine primarily inshore, New Bedford offshore, and Point Judith a mixture). Nevertheless, the strength of the across-port differences leads one to suggest that some additional factors associated with the ports account for some of the variance in satisfaction levels.

An examination of the directions of the intergroup differences shows that New Bedford fishermen, as well as the total sample of offshore fishermen, manifests mean scores indicating that they are the least satisfied with respect to the Middle and High Level Needs Factors and JSM1. Dissatisfaction on the Middle Level Needs Factor can probably be explained by the fact that these fishermen spend long periods of time at sea, and many of the items on the Middle Level Needs Factor are related to time away. Additionally, many of the fishermen in New Bedford are workers on large vessels that do not belong to them; thus, they do not have the freedom to come and go as they please nor do they perceive much of an opportunity to be their own boss in such a highly capitalized fleet (also related to items on Factor I).

New Bedford and the total sample of offshore fishermen show a strikingly low level of satisfaction with respect to the High Level Needs Factor. Perhaps these groups of fishermen have too much exposure to the items associated with this factor. Perhaps they are out on the water and outdoors too much in the cold, rough, and dangerous North Atlantic. Perhaps the challenge and adventure becomes a little too much to bear when one's life is at stake (cf. Poggie, Pollnac, and Gersuny 1976; Poggie and Pollnac 1988). Additionally, since the crew-to-captain ratio on the large vessels is greater, a preponderance of crew members are not in control of the situation, and are thus less likely to feel self-actualized in applying their own skills to deal with the problems of production and the elements. This would have a tendency to lower the mean score on these items. This suggestion is supported by the fact that owner/skipper status is positively related to satisfaction on the High Level Needs Factor in New Bedford (see Table 3).

The Maine fishermen as well as the inshore fishermen are by far the least satisfied on the Basic Needs Factor. When all inshore lobstermen are separated out, they manifest an even lower level of satisfaction on this factor. Most of these lobstermen are from Maine, where both the predictability and level of earnings, on the average, do not match that of fishermen closer to urban markets (two items on the Basic Needs Factor). Additionally, the small size of their vessels, which are mostly open to the weather, in combination with the cold, foggy, turbulent Maine coastline and less mechanized nature of their jobs, probably leads them to be less satisfied with the physical fatigue, safety, and healthfulness occupational characteristics, which are also on this factor.

Finally, with respect to intergroup differences, we find that New Bedford fishermen are less likely to say that they would become fishermen if they had their lives to live over (JSM1), and Maine fishermen are less likely to advise a young man to become a fisherman (JSM2). The relatively low score for New Bedford fishermen on JSM1 can probably be attributed to their relatively low level of satisfaction on the Middle and High Level Needs Factors, as described above. The low score of the Maine fishermen on JSM2 is probably due to the fact that the Maine lobstermen perceive the lobster grounds as a



**Table 3**  
**Stepwise multiple regression relating independent sociocultural variables to job satisfaction variables in three subsamples.**

Location	Dependent <sup>a</sup> variable	Variable entered and controlled	Partial <sup>b</sup> to enter	F-ratio to enter	R
Maine N = 80	Middle Level Needs	Age	.29	7.26	.29 <sup>c</sup>
		Non-inshore lobsterman	– .23	4.46	.37 <sup>c</sup>
	High Level Needs	Years fishing	– .23	4.28	.23 <sup>d</sup>
		Non-inshore lobsterman	.19	2.80	.29 <sup>d</sup>
		Early entry	.20	3.34	.35 <sup>d</sup>
Point Judith N = 79	Basic Needs	Number of dependents	.30	7.89	.30 <sup>c</sup>
		Owner-skipper status	– .33	9.28	.44 <sup>c</sup>
		Early entry	.26	5.33	.50 <sup>c</sup>
	High Level Needs	Early entry	.25	4.93	.25 <sup>d</sup>
		JSM1			
		Marital status	.24	4.76	.24 <sup>d</sup>
New Bedford N = 42	Basic Needs	Early entry	.17	2.29	.29 <sup>d</sup>
		Father fisherman	.42	8.57	.42 <sup>c</sup>
	High Level Needs	Formal education	– .23	2.26	.47 <sup>c</sup>
		Father fisherman	– .58	19.94	.58 <sup>c</sup>
		Years fishing	.39	6.93	.66 <sup>c</sup>
		Non-inshore lobsterman	– .39	6.97	.72 <sup>c</sup>
		Number of dependents	– .34	4.80	.76 <sup>c</sup>
		Marital status	.31	3.94	.79 <sup>c</sup>
		Owner-skipper status	.30	3.44	.81 <sup>c</sup>
	JSM1	Years fishing	.38	6.69	.38 <sup>d</sup>
		Number of dependents	– .30	3.92	.47 <sup>c</sup>
		Ethnicity	– .22	1.88	.51 <sup>c</sup>
	JSM2	Owner-skipper status	.23	2.06	.55 <sup>c</sup>
		Early entry	.35	5.66	.35 <sup>d</sup>
		Owner-skipper status	.34	5.27	.48 <sup>c</sup>
		Formal education	.20	1.56	.51 <sup>c</sup>
		Relatives fishing	.26	2.58	.55 <sup>c</sup>

<sup>a</sup>Dependent variables that have entering variables with  $p < .05$ .  
<sup>b</sup>Zero-order for first variable entered.  
<sup>c</sup> =  $p < .01$ .  
<sup>d</sup> =  $p < .05$ .

“limited good” and have a tendency to try to control access through the institution of harbor gangs, which sometimes use violent means to restrict access to specific lobster grounds (cf. Acheson 1975).

*Predictors of Job Satisfaction*

The intraport analysis of the sociocultural correlates of job satisfaction resulted in findings suggesting that situational variables play a large role in the relationships between job satisfaction and the independent variables. In some ports none of the sociocultural variables was related to specific job satisfaction measures; in other ports many were, and in one instance opposing relationships were found in different ports.

*Basic Needs*

With respect to the Basic Needs Factor, number of dependents is the strongest predictor in Point Judith. We have no serious explanation for this relationship at this time. A

tongue-in-cheek explanation is that fishermen with large families feel less mental pressure and physical fatigue on board the boat than at home. After the effects of number of dependents are controlled, however, owner/skipper status manifests a strong negative correlation with this factor. There are a number of possible explanations for this finding. First, owner/skipper status is probably more critical with respect to their incomes, since they have so much capital invested in productive equipment. Further, owner/skipper status is responsible for many of the basic needs of the crew (e.g., safety, healthfulness, etc.); thus, these items on the Basic Needs Factor would be more salient to them. Perhaps the more important a given aspect of job satisfaction is to an individual, the more likely he or she will express dissatisfaction with it. This finding is paralleled by Kalleberg and Griffin (1978), who report that the more highly one values intrinsic job rewards, the less likely he or she is satisfied with the level of such rewards. The Basic Level Needs Factor is composed primarily of items one would classify as extrinsic, but perhaps the same principle applied. Early entry is also entered into the equation for Point Judith. Those who are socialized into the occupation at an earlier age are probably better adapted and have not had the opportunity to contrast fishing with other occupations.

In New Bedford the strongest correlate of satisfaction on the Basic Needs Factor is having a father who was also a fisherman. This finding suggests that in New Bedford, where the conditions are harshest overall with respect to physical separation from land and exposure to the rough, open ocean, having a father who was a fisherman probably "preadapts" a fisherman to the difficult nature of the job (e.g., through having a supportive family context and early socialization by a successful fisherman role model; cf. Poggie, Pollnac, and Gersuny 1976), thus resulting in greater overall satisfaction with the items on the Basic Needs Factor. The negative partial correlation with years of formal education suggests that those with more education tend to be more critical with respect to items on the Basic Needs Factor. Perhaps formal education leads one to have higher expectations with respect to these items, hence lessening the chances for satisfaction. Finally, none of the sociocultural variables is significantly related to the Basic Needs Factor in Maine.

#### *Middle Level Needs*

Turning to the Middle Level Needs Factor, we find significant relationships only in Maine. There, age is positively correlated with satisfaction on this factor, suggesting that as one becomes older the high expectations of youth are abandoned, thus increasing the likelihood of satisfaction. Finally, fishermen other than inshore lobstermen tend to be dissatisfied on this factor. Most items on the factor deal with separation from land-based society, and offshore fishermen are separated the most.

#### *High Level Needs*

The High Level Needs Factor manifests the largest number of statistically significant relationships with the sociocultural variables in the intraport analyses. Among Point Judith fishermen, only early entry into the occupation is significantly related to level of satisfaction on this factor. In Maine we also find early entry as a correlate of satisfaction on the High Level Needs Factor. In both cases early socialization and reduced chances for comparison with other jobs probably play a significant role in enhancing satisfaction with respect to the items on this factor. Years of fishing experience is negatively related to satisfaction on the High Level Needs Factor in Maine. Here we might argue that facing the treacherous Maine coastline with a small lobster boat becomes too exciting, challenging, and adventurous the more a fisherman becomes exposed to it over the years, and the initial attraction to the items on the High Level Needs Factor wear thin.

It is interesting to note that in contrast to Maine, years of fishing is positively correlated with satisfaction on the High Level Needs factor in New Bedford. Since the overall level of satisfaction on the High Level Needs Factor is quite low in New Bedford, this relationship probably reflects the fact that time habituates the New Bedford fisherman to the

demands of being a crew member on a long-trip, highly mechanized, offshore vessel; hence, the longer he has been fishing the *less dissatisfied* he becomes with respect to the items on the High Level Needs Factor. Additionally, those who are highly dissatisfied probably leave the occupation as soon as an alternative is available, leaving behind those who are less dissatisfied.

The strongest predictor of satisfaction with the High Level Needs Factor in New Bedford is having a father who was *not* a fisherman. This is probably due to the fact that individuals from fishing families are taking the path of least resistance to obtain a job through the father's contacts or on the father's boat. They are probably not entering the occupation because they are attracted to it; thus, it would be perceived more as a job fulfilling Basic Needs rather than High Level Needs, an interpretation supported by the significant correlation between the Basic Needs Factor and whether the father is a fisherman.

#### *Job Satisfaction Measure 1 (JSM1)*

With respect to JSM1 (whether or not an individual would become a fisherman again if he had his life to live over), married fishermen and those who entered the occupation early are the ones most likely to respond positively in Point Judith. In New Bedford, years of fishing experience and owner/skipper status are positively related to positive responses to this question, while number of dependents and being foreign born are negatively related. The positive relationship between years of fishing and job satisfaction in New Bedford has been discussed above. Owner/skipper status is more likely to be related to job satisfaction in New Bedford because on the larger vessels, which predominate there, owner/skippers have more control over their labor, a factor positively related to job satisfaction (cf. Kalleberg and Griffin 1978).

The negative relationship between ethnicity and job satisfaction in New Bedford is probably related to the fact that most of the foreign-born fishermen are Portuguese immigrants living in New Bedford. They come to the United States with relatively high expectations and with only day or short-trip fishing experience. Although their income in the United States is relatively high, becoming a crewman on a long-trip vessel in the North Atlantic is probably a rude shock for many, in contrast to the more inshore fishing style they were accustomed to in their homeland. Interviews indicate a great deal of dissatisfaction with respect to the effects of long-trip fishing on family life among the immigrants. One even stated that this type of fishing "is not a job for a man." Thus, the immigrant fisherman comes ill-prepared for trip fishing and with high expectations that are not fulfilled; thus he reports dissatisfaction with his job—the higher the expectations, the lower the chances of achieving satisfaction (cf. Kulpinska 1977).

It is also possible that since most of the foreign-born fishermen in the sample are offshore fishermen, the results parallel what we would expect on the basis of offshore fishermen's attitudes toward their occupation. The crewmen aboard the large New Bedford vessels are more like factory workers than fishermen in smaller vessels, who are either independent entrepreneurs or individuals who have some hope of owning the means of production themselves someday. From this perspective, the New Bedford immigrant fisherman can be grouped with other workers who do not own the means of production and have little control over their labor (Stokes 1978). The fact that there is an active fishermen's union in New Bedford that went on strike against the boat owners in 1986 reinforces this view. Kalleberg and Griffin (1978) suggest that workers who have less control over the product and process of their labor obtain fewer job rewards than others, which provides a possible alternative explanation for the finding of low job satisfaction among immigrant fishermen. Nevertheless, the relatively high correlation with ethnicity suggests that some factor associated with being foreign born also influences relative job satisfaction.

Finally, number of dependents is negatively related to job satisfaction in New Bedford, due to the fact that the more dependents one has, the more difficult it is to be at sea for

the long periods of time that characterize this port. The wife is probably less satisfied, due to the fact that she must manage a larger household; thus, the departures and returns are probably more stressful. As one New Bedford long-trip fisherman said, "I have 11 children. I go home and I confuse their names—some father I am."

#### *Job Satisfaction Measure 2 (JSM2)*

As for the question concerning whether a fisherman would advise a young man to enter the occupation (JSM2), we find significant relationships only among the New Bedford fishermen. There we find that early entry into the occupation, owner/skipper status, years of formal education, and number of relatives fishing are all positively related to a positive response to this question.

### **Conclusion**

Our results clearly demonstrate that there is more to the occupation of fishing than simply making money. Management schemes must take these other, nonmonetary factors into account if they want to develop effective and humane management programs. Several authors have indicated how nonmonetary incomes (e.g., worker satisfaction bonus) can push exploitation of a fishery beyond maximum economic yield, hence increasing the chances for overexploitation (Smith 1981; Anderson 1980).

We have seen that the structure of job satisfaction among New England fishermen is related to a number of items potentially affected by management, such as fishing style, time at sea, freedom to come and go as one pleases, and so on. Fisheries management schemes that impact these facets of the occupation would also affect job satisfaction. For example, closure of specific geographic regions may require vessels to travel farther to fish, possibly necessitating larger, more seaworthy vessels and more time at sea. Longer trip length would have a negative impact on level of satisfaction on many of the items included in the Middle Level Needs Factor. As detailed in the introduction to this article, job satisfaction is related to a large number of variables impacting on society ranging from longevity to family violence and worker productivity.

We have also seen that the relationships between job satisfaction and relative satisfaction regarding various facets of the structure of the occupation are complexly related to other sociocultural variables. Further, many of these relationships are conditioned by situational variables that vary from port to port. Hence, fisheries management plans can differentially affect job satisfaction among different categories of people and in different ports (cf. Poggie and Pollnac 1981). For example, closure of a specific fishery or geographic region may require that fishermen either change target species or travel farther for fish. These changes may require larger and more seaworthy vessels and/or gear changes. Ports and individuals will vary in terms of the ease to which these changes can be made. For example, New Bedford with its large offshore fleet would have less difficulty than Point Judith, which is composed of a higher proportion of smaller, individually owned vessels. Additionally, in both ports not all vessel owners will be able to afford to make the changes; thus some owners will be forced to become crewmen, fish inefficiently with present gear, or drop out of the fishery—all factors that would have a negative impact on aspects of job satisfaction, as outlined above.

Management decisions that reduce effort and employment among fishermen would have less of an impact in New Bedford than in the other ports in this study. This is due to the fact that the overall level of job satisfaction is relatively low in New Bedford; hence, switching to alternative employment would probably have less of an impact. It is important to emphasize that we are referring solely to the impact on job satisfaction. If alternative employment producing equal or better levels of job satisfaction is not available, the impacts would probably be greater in New Bedford. This is due to the fact that in New Bedford crews are frequently kinship based among the immigrant Portuguese fishermen, and little alternative employment is available for them as a result of relatively low levels of education and limited command of the English language.

The complexity of the interrelationships between these numerous variables suggests that considerable caution should be taken in formulating policy if the goal of minimizing the negative social impact of fishery management schemes is to be realized. These complexities also point to the important need for applied anthropologists to generate, through scientific research, the understanding needed to help in policy recommendations that will affect the lives and satisfactions of others.

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