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Anthropology Working Paper No. 20

Variance in Perceptions of Fishing and Farming
among Small-Scale Fishermen in The Gulf
of Nicoya, Costa Rica

by

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November 1977

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INTRODUCTION Planned development of any sector of an economy will be maximally effective if proposed changes are carried out with an understanding of the target population's attitudes, beliefs, and values concerning affected occupations. For example, if changes result in displacement of individuals who must shift to alternative occupations, knowledge of attitudes towards the alternative occupations are essential to arrive at an understanding of the potential for either acceptance or rejection of proposed changes. If such knowledge is obtained in advance of proposed changes, programs can be structured to enhance the desirability of alternative occupations by focusing on positive attributes and attempting to change negative perceptions (cf. Pollnac 1977; Pollnac & Ruiz-Stout 1975).

With respect to occupational perceptions, one area of potential importance involves comparing individual perceptions of present occupation with possible alternative occupations. Proceeding under the assumption that an individual's perception of self is related to that of his characterization of others involved in his occupation, we suggest that changes between occupations which are differentially characterized will result in like changes in self perception. For example, if ego characterizes others in his occupation in a positive manner, he is likely to have a positive perception of self. If he characterized those in an alternative occupation negatively, he is likely to resist moving into that occupation because it would result in a more negative perception of self. It appears then, that an understanding of individual perceptions of participants in alternative occupations would be important in predicting possible resistance to occupational

change due to perceived self-identity conflict.

The purpose of this paper is to examine the sociocultural correlates of perceptions of farmers and fishermen by small-scale fishermen in the Gulf of Nicoya, Costa Rica. The alternative occupation of farming was selected because it was the most frequently mentioned alternative occupation in response to a question concerning what a fisherman would do if he could no longer fish in the Gulf of Nicoya.

SAMPLE Data for this report are based on interviews with 80 small-scale fishermen from the Gulf of Nicoya, Costa Rica. Part of the sample (50) was drawn from Barrio el Carmen, Puntarenas. Puntarenas, the major Pacific port of Costa Rica, is located on a thin finger of land jutting westward into the Gulf of Nicoya approximately 110 kilometers west of San Jose. Barrio el Carmen is at the extreme western end of Puntarenas and is inhabited primarily by small-scale fishermen. A sample of 30 small-scale fishermen were interviewed at Costa de Pajaros, a concentration of fishermen in a rural region approximately 21 air-kilometers northwest of Puntarenas on the coast of the Gulf of Nicoya. In both areas most small-scale fishermen fish from motorized wooden plank or dugout vessels from 15 to 30 feet in length using handlines and/or nets. Some still use sail or oars.

TESTS The technique used here to investigate variability in perceptions of the occupations farmer and fisherman is the semantic differential. The semantic differential is based on the assumption that an individual's life experiences affect the connotative meaning of concepts (Osgood, Suci & Tannenbaum 1957). In this paper we compare the connotative meaning of the concepts "fisherman" and "farmer" by having individual fishermen rank each concept on a set of six bipolar attributes (see Table 1).

Table 1. Bipolar Attributes Used to Differentiate Farmers and Fishermen

1. GOOD - BAD	BUENO - MALO
2. HAPPY - SAD	FELIZ - TRISTE
3. INTELLIGENT - STUPID	INTELIGENTE - ESTUPIDO
4. STRONG - WEAK	FUERTE - DEBIL
5. FAST - SLOW	RAPIDO - LENTO
6. BRAVE - COWARDLY	VALIENTE - COBARDE

Three of the bipolar attributes (GOOD - BAD, HAPPY - SAD, INTELLIGENT - STUPID) form an evaluative dimension, and the other three (STRONG - WEAK, FAST - SLOW, BRAVE - COWARDLY) a dynamism (potency-activity) dimension (cf. Osgood, Suci, & Tannenbaum 1957; Osgood 1964). Each bipolar attribute was ranked on a seven-step scale with the emotively positive pole (e.g. GOOD) receiving a value of seven, and the negative (e.g. BAD) a value of one.

The four independent variables (age, education, years fishing, and rural/urban residence) were determined with the use of direct questions.

ANALYSIS The mean values on each bipolar attribute and the dynamism and evaluative dimensions can be found in Table 2.

Table 2. Mean Values on Bipolar Attributes and Semantic Differential Dimensions for the Concepts Fisherman and Farmer.

<u>Attribute or Dimension</u>	<u>Fisherman</u>	<u>Farmer</u>
STRONG-WEAK	5.23	5.23
GOOD-BAD	5.39	5.40
HAPPY-SAD	4.93	4.44
INTELLIGENT-STUPID	5.36	5.04
FAST-SLOW	5.58	5.00
BRAVE-COWARD	6.20	6.00
EVALUATIVE DIMENSION	15.68	14.88
DYNAMISM DIMENSION	17.00	16.22

Overall, Table 2 indicates that small-scale fishermen tend to characterise farmer more negatively than fisherman. In figure 1, the mean values for fisherman and farmer are plotted on the evaluative and dynamism connotative meaning dimensions. This figure makes it clear that the vector leading from fisherman to farmer in connotative meaning space is almost equally emotively negative on both dimensions.

The next step in the analysis was to determine if differences in conceptualization of farmer and fisherman are related to other sociocultural variables. Distance between fisherman and farmer (FFD) was calculated for each connotative meaning dimension by summing the value for fisherman minus the value for farmer on each attribute within each dimension. This resulted in an FFD on both the dynamism and evaluative dimensions for each individual within the sample. Dynamism and evaluative FFD's were intercorrelated with age, education, years fishing experience, and area of residence (dummy variable; rural = 1, urban =2). The results of this analysis can be found in Table 3.

Table 3. Correlations between Independent Variables and FFD on Evaluative and Dynamism Dimensions.

<u>Independent Variable</u>	<u>Dynamism FFD</u>	<u>Evaluative FFD</u>
1. Age	.06	.06
2. Education	-.06	-.06
3. Years Fishing	.22*	.22*
4. Area of Residence	.03	-.23*

N = 80 *p < .05

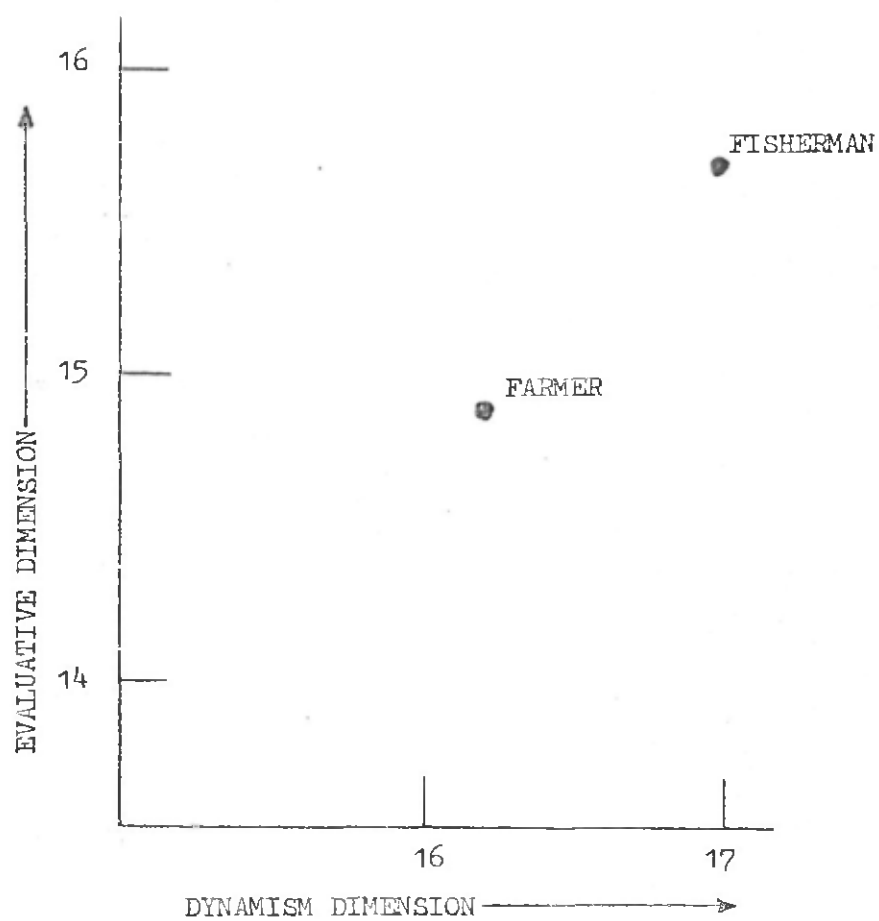


Figure 1. Location of FISHERMAN and FARMER in Connotative Meaning Space.

Table 3 indicates that both years fishing experience and area of residence are related to FFD. It appears that the longer one has been fishing, the greater the FFD on both dimensions. Area of residence is significantly related only to the evaluative dimension. Here the data suggest that evaluative dimension FFD is greater for the urban than the rural fishermen. Table 4 provides mean values for the rural and urban samples on both dimensions, and Table 5 provides these values for the sample dichotomized at modal years fishing experience (mode=13 years). Figures 2 and 3 graphically display the relationship between these two independent variables and perceptions of farmer and fisherman.

Table 4. Rural/Urban Differences in Mean Values on Semantic Differential Dimensions for Farmer and Fisherman.

<u>Concept/Dimension</u>	<u>Urban</u>	<u>Rural</u>	<u>F Ratio</u>	<u>p</u>
Fisherman/Dynamism	17.7	15.8	17.68	<.001
Fisherman/Evaluative	16.0	15.1	4.05	<.05
Farmer/Dynamism	17.0	14.9	10.88	<.01
Farmer/Evaluative	14.7	15.1	0.33	>.05
N	50	30		

Table 5. The Effects of Years Fishing on Evaluation of Fisherman and Farmer on Semantic Differential Dimensions.

<u>Concept/Dimension</u>	<u>Years Fishing*</u>		<u>F Ratio</u>	<u>p</u>
	<u>≤13</u>	<u>≥13</u>		
Fisherman/Dynamism	16.8	17.2	0.67	>.05
Fisherman/Evaluative	15.9	15.4	1.58	>.05
Farmer/Dynamism	16.4	16.0	0.34	>.05
Farmer/Evaluative	15.6	14.1	6.43	<.05
N	42	38	*Mode = 13	

Figures 2 and 3 clearly indicate the relationship between the independent variables and FFD on both dimensions. In Figure 2, the distance between farmer and fisherman on the evaluative dimension is clearly greater for the urban fishermen than the rural fishermen. Differences between the concepts on the dynamism dimension are approximately the same for both samples. Nevertheless, we can see that the urban sample, in contrast to the rural sample, consistently ranks both farmer and fisherman higher on the dynamism dimension while ranking farmer lower and fisherman higher on the evaluative dimension. In Figure 3 we find that individuals who fished less than the modal number of years (13 years) tend to characterise fisherman and farmer closer together on both dimensions than those who have fished 13 years or more. Further, Figure 3 indicates that those who have fished longest have the most negative perception of farmers.

Finally, since both years fishing and area of residence were significantly related to evaluative FFD, the combined effects of these two variables were examined. The multiple correlation between these two variables and evaluative FFD is 0.30 ($p < .05$) indicating that together they explain nine percent of the variance in the dependent variable, a modest but respectable sum.

DISCUSSION AND CONCLUSIONS Part of a person's self-identity is obtained from membership and roles in groups. Some is ascribed (e.g. sexual identity), and some is achieved. According to some authors, occupation forms a significant aspect of achieved identity (McKee 1974), and participation in low-status occupations can result in disesteemed self-identities. Our findings indicate that small-scale fishermen in the Gulf of Nicoya perceive farmers (their primary alternative occupation) more negatively than fishermen. This suggests that they will perceive a shift from fishing to farming as possibly resulting in a loss of self-esteem. It is therefore predicted that if access to the fishery is

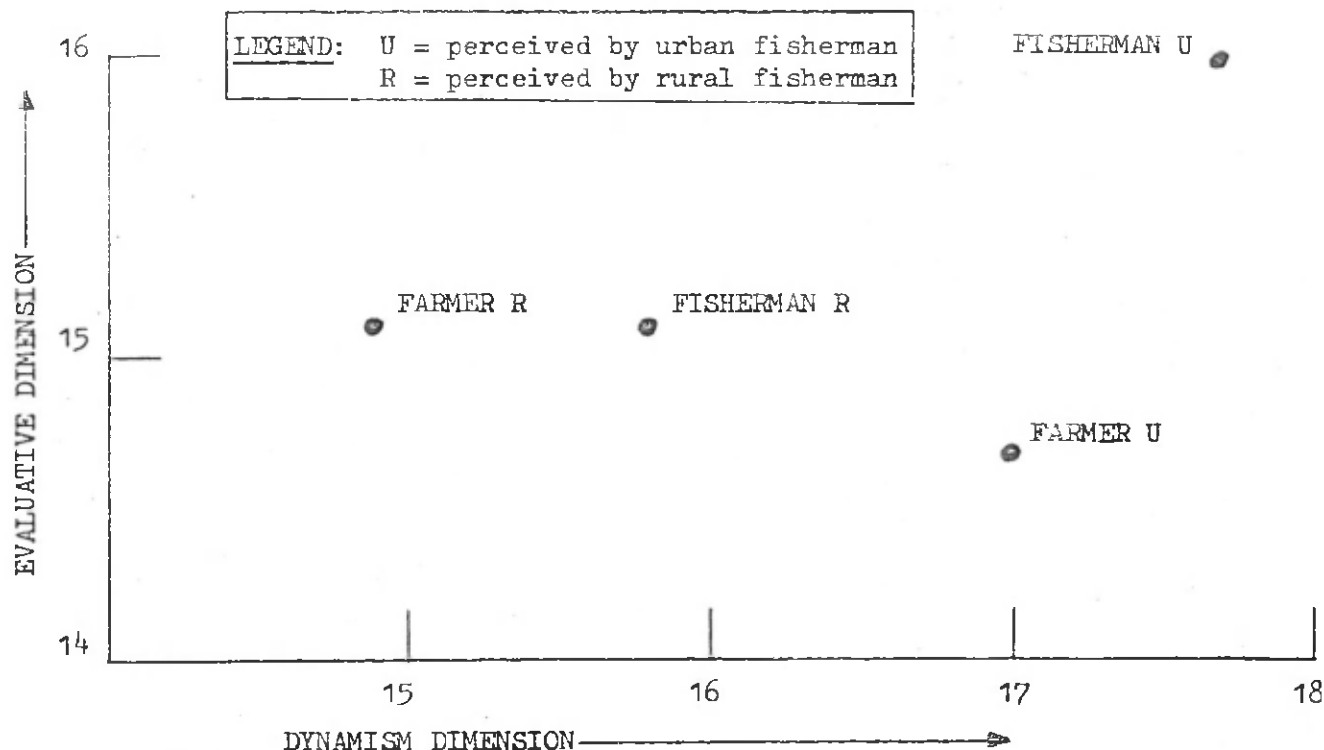


Figure 2. Rural-Urban Differences in Location of FARMER and FISHERMAN in Connotative Meaning Space.

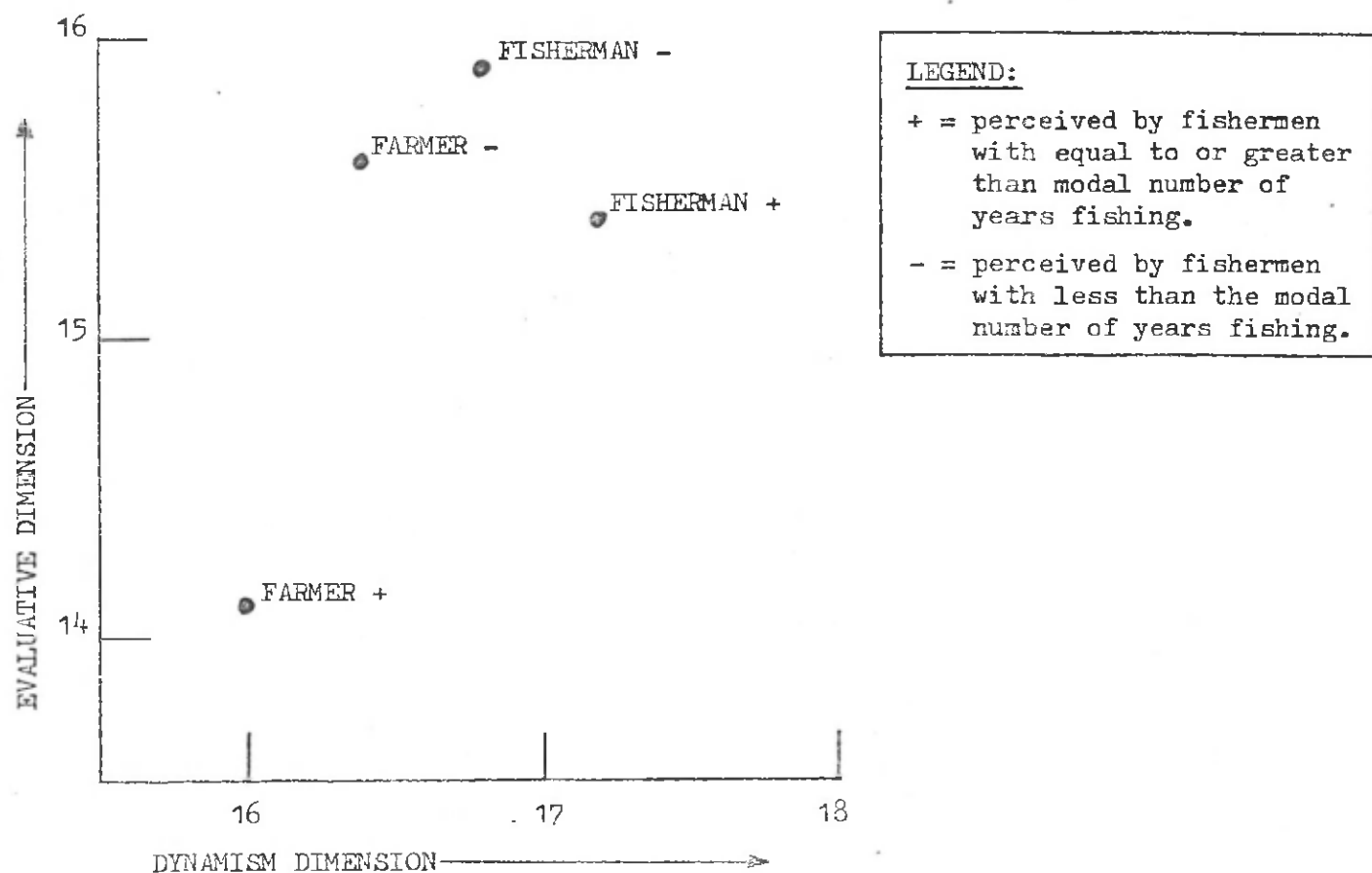


Figure 3. Effects of Years Fishing on Location of Fisherman and Farmer in Connotative Meaning Space.

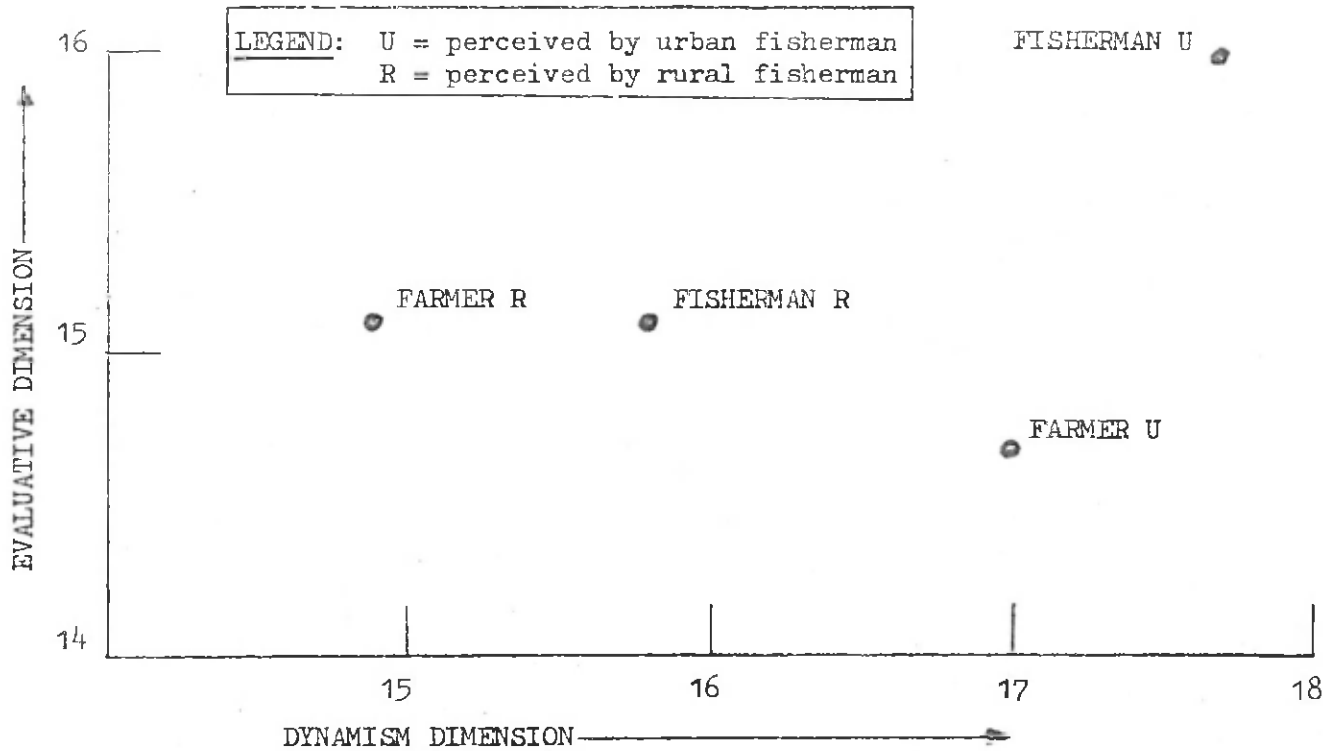


Figure 2. Rural-Urban Differences in Location of FARMER and FISHERMAN in Connotative Meaning Space.

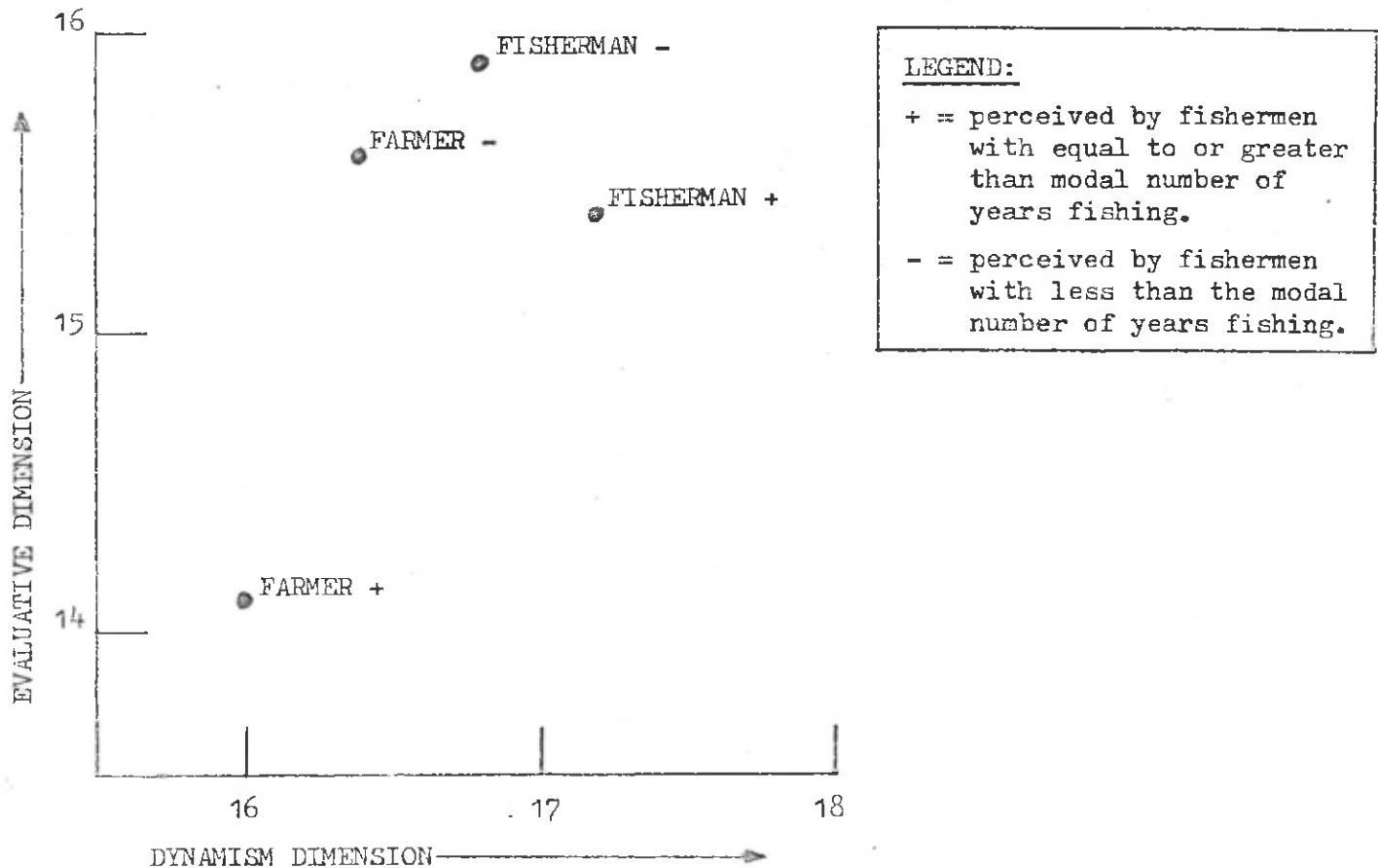


Figure 3. Effects of Years Fishing on Location of Fisherman and Farmer in Connotative Meaning Space.

restricted, fishermen who will be forced into farming will resist primarily because they conceptualize farmers more negatively than fishermen in connotative meaning space. Further, if they go into farming, it is possible that loss of self-esteem will result in social problems until the system stabilizes through means such as formation of alternative social groupings to enhance achieved identity and self-esteem. Although this generalization holds for all fishermen, it is especially true for urban fishermen and those who have fished longer. Urban fishermen, however, have more alternative occupational opportunities than rural fishermen; thus, suggesting that the impact will be less in the urban area. This, however, is an empirical question which depends on the fishermen's perceptions of other alternative occupations relative to fishing.

If access to the fishery is to be restricted, resulting in some fishermen being dislocated, it is suggested that programs be implemented in advance to either improve conceptualization of alternative occupations or increase occupational opportunity in desirable occupations. This presupposes a research program structured to determine the relative desirability of various occupations. Further, formation or support of community groups as a means of providing alternative sources for achieved identity may also help reduce the impact of such a change.

In sum, we have seen that, in general, small-scale fishermen in the Gulf of Nicoya perceive farmers more negatively than they perceive fishermen. Further, the degree of this negative perception is positively related to both urban residence and years fishing experience. Finally, suggestions were made concerning programs to reduce impact of any changes which would result in the occupational dislocation of fishermen.

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