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**Small-Scale Fishermen's Psychocultural Characteristics
and Cooperative Formation**

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Introduction

A fundamental assumption of the human ecology paradigm is that psychocultural characteristics may often be explained as adaptations to the contingencies faced by individuals in their total environments. Recent empirical studies applying this paradigm to small-scale fishermen have been quite productive in generating a middle-range theory of maritime adaptations. The areas of psychocultural life among small-scale fishermen where this paradigm has been productively applied are quite varied. They range from perception (Pollnac 1977b); to ritual behavior (Poggie, Pollnac and Gersuny 1976; Poggie and Gersuny 1974; Poggie n.d.); to gratification orientation (Pollnac, Gersuny and Poggie, 1975; Pollnac 1977a; Pollnac and Poggie 1978, Poggie 1978); to level of psychological functioning (Aronoff 1967, Pollnac and Poggie, 1979); to kinship (Poggie and Gersuny n.d., Pollnac 1978, Poggie, Pollnac and Gersuny 1976); and to other aspects of social organization such as cooperatives and work organization (Robbins, Robbins and Pollnac 1977; Poggie and Gersuny 1974; Bort 1978).

This paper will deal with a single psychocultural characteristic of small-scale fishermen which appears to be adaptive and extremely important in understanding cooperative formation. The characteristic is that of independence, which is an extremely widespread feature of small-scale fishermen around the world. By independence I mean the propensity to think and behavior free of the influence of others. This characteristic is assumed to be associated with a

need for independence.

One does not have to look long in the descriptive literature on small-scale fishermen to encounter references to the feature of independence among practitioners of this art. Several examples from the literature are as follows: from the Caribbean island of St. Kitts, Aronoff (1967) reports that fishermen there emphasize independence and self-reliance in giving reasons why they chose to fish; Harrison (1970) reporting on the Malay of South West Sarawak, notes that fishing seems to develop independent discipline of mind; Fraser's (1960) study of the Malay of South Thailand stresses individualism in the economic orientation of these fishermen; Kottak (1966) reports that successful fishing at Arembepe, Brazil is related to individualism; Poggie and Gersuny's (1974) study of small-scale fishermen in southern Rhode Island shows the importance of independence in self-perception; Pollnac and Ruiz-Stout (1977) note that Panamanian fishermen frequently cite independence as an important characteristic of their work; and finally Leighton et al. (1963) cite independence as one of the most cherished qualities of the small-scale Nova Scotia fishermen they studied.

Independence as An Adaptive Characteristic

I wish to hypothesize that independence is a psychoculturally adaptive characteristic for small-scale fishermen. There are a number of reasons why independence may be adaptive for fishermen. These reasons have to do with the special contingencies of working on a small boat in an aqueous environment in search of often unseen prey.

Small-scale fishermen around the world are faced with similar conditions. They are physically removed from support and help of the land-based society.

They carry out their work alone or in small groups with considerable "division of labor." (There is simply not enough room for redundant workers on small fishing boats). Decisions in the face of considerable uncertainty must be made on an individual basis, and these decisions have immediate effects on the success of fishing, on the well-being of gear, vessel, crew and self. Decisive and rapid decisions are required because of the often rapidly changing nature of the ocean and the illusive prey. When I first did participant observation fieldwork among small-scale fishermen in southern New England, one of the things I underscored in my field notes concerned how the work was carried out by the two man crew independently of each other and with virtually no verbal communication between them. Each crew member did his work and made his decisions independently. There appeared to be an egalitarian ethos that went along with the self-perceived independence of the actors in this fishery (cf. Poggie and Gersuny 1974). This initial observation proved to be a common feature of work in other small-scale fishing operations that I have observed.

Other researchers have pointed out the egalitarian nature of small-scale fishing crews (e.g. Kottak 1966, Burrows and Spiro 1953, Diamond 1969). Norr and Norr (1974) have emphasized the need for interdependence as the basis of this ethos. I wish to emphasize that egalitarianism is the only noncoercive way that individuals with high need for independence can be organized into a crew.

Independence and Formation of Cooperatives

If we accept the view that independence is an adaptive characteristic for a wide range of small-scale fishermen as the evidence would suggest, then it follows that cooperative behavior among small-scale fishermen will be realized under special conditions. Individuals who have been selected by the

conditions of the work environment for high need for independence, will be individuals who can only be organized into social groups in very special ways. This would be true for small crews as argued above and even more so for fishermen's cooperatives where a larger number of individuals must cooperate.

The Development of the Point Judith Fishermen Coop and Independence

The formation of the Point Judith (Rhode Island, U.S.A.) Fishermen Cooperative is an interesting case in point. Research has shown that independence is the most salient feature of self-perception in this population of fishermen (Poggie and Gersuny 1974). It is also widely acknowledged that the Point Judith Fishermen's Cooperative is one of the most successful fishermen's coop in the United States. The formation and organization of this coop appear to have nicely accommodated the high need for independence of its members with a cooperative organization that serves the collectivity.

The Point Judith Fishermen's Cooperative was formed in 1948 in response to a very disadvantageous local marketing situation faced by the unorganized fishermen. The coop came into being because of the work of several younger fishermen recently back from military service in World War II. (One can speculate that the cosmopolitan experience of being in the service had something to do with this bold move). There had been talk of a coop before this time, but it did not materialize because of the antipathy of local middlemen, insufficient information, and fear of failure. The important point to note here is that the coop was formed by the fishermen themselves with the intent of correcting a deleterious marketing situation and providing gear and supplies at a favorable price. Thus the coop was a marketing and supply one. These were both functions that individual fishermen by themselves could not improve.

They were functions that could clearly be improved by cooperative action with-
out impinging on the independence of individuals where independence served as
an adaptive characteristic. That is, out of the water away from the land.
Fishermen retained individual ownership of their boats and the right to fish
when, where, and for what they thought best.

The coop is organized in a way that fishermen feel that it is theirs.
Officers in the coop are elected by the members, meetings are held where indiv-
iduals may air their feelings; owner and non-owner members own shares and
receive patronage refunds each year. The board of directors includes fishermen
of various types, so that diverse interests are represented. The coop manager
and president recognize the need for members to feel that they control their
piece of the coop and go out of their way to project an egalitarian ethos in
their dealings as officers of the coop. They are also aware of the limits
of their authority. The current manager tells the story of how an earlier
manager tried to tell the fishermen what days to bring in fish by posting a
sign to that effect. The response of the fishermen was to tear down the sign.
The manager is emphatic about the fact that he cannot direct the type of fish-
ing and when boats should land fish even if he wanted to. These are areas
that fall into the domain of individual decision making. This arrangement
has persisted with the thriving coop for 31 years.

Today (1978) when a sample of 30 fishermen who are coop members were ask-
ed what the disadvantages of the coop are; their responses, indicate no per-
ceived basic flaw in the organization but only some concern with several oper-
ational questions such as improving unloading facilities, maintaining quality
of fish and whether price could be better at times. There was some dissatis-
faction expressed about the management of the coop and about lack of flexibil-

ity when one was a member, but these appear not to be serious widespread complaints. In fact, the highest frequency answer to the question was that there are no disadvantages.

Coopepes

I would like to turn to the case of Coopepes (the recently formed small-scale fishermen's coop of Puntarenas, Costa Rica). This cooperative was mandated by a development program initiated in 1970 by the Presidential Office of Planning of Costa Rica. This office solicited assistance from the Interamerican Development Bank which assigned the project to the Cooperative FAO/BID Program for design.

The basic objectives of the program in the artisanal (small-scale) sector were to enhance the productivity and distribution of fin fish by organizing a cooperative in Puntarenas and operating a fish terminal to give general services to the fleet and to sell fish. The cooperative was to receive forty-seven 31-foot 3-ton capacity fiberglass boats fully equipped with navigational and safety technology. They were to be used on the Pacific coast in the Gulf of Nicoya and over the continental shelf.

In 1976 government officials and the BID adviser carried out a campaign to sign up members to a cooperative as one of the preconditions for obtaining the loan necessary to carry out the full development program. It was important for government planners to show progress in the formation of a cooperative as the first step in the development plan, and a relatively large number of individuals (approximately 500 in the Gulf of Nicoya region) were signed up. It was clear to the officials that many individuals signing up were not full-time fishermen, had only a vague notion of what the cooperative was about, except

that they were promised advantages; and, most importantly for our purposes here, that the vast majority of successful fishermen did not join. The coop was attracting many marginal fishermen to its ranks.

When I began to study the coop in 1978, it was struggling to continue its existence. Only fifty widely dispersed fishermen were selling to the coop. Trucking costs relative to production were very high. The new boats had not arrived. My intent was to try to understand why the coop had not attracted mainline artisanal fishermen into the organization. My ideas about coopepes came from adaptational theory as related to small-scale fishermen and from what I had learned about the success of the Point Judith coop. It is argued that the way the Puntarenas coop was organized impinged on the need for independence of successful artisanal fishermen; and for this reason, it was primarily attracting marginal fishermen to its ranks.

The Test

In order to measure self-perception of independence in this population, a seven step semantic differential test was administered to a sample of 50 non-coop artisanal fishermen from Puntarenas.¹ In this test respondents were asked to rate fishermen and administrators along the dimension of intelligent-stupid, independent-dependent, rich-poor, generous-stingy, honest-dishonest, caring about others-egocentric, and good-bad. Although the prime concern was with the independent-dependent dimension, by including several other dimensions in the test, it was possible to assess validity by seeing if fishermen were portraying themselves only in a socially desirable light. As seen on Figure I, this proved not to be the case. For example, fishermen rank themselves as less intelligent than administrators. The rationale for selecting administrators as the compar-

ison group was that it is general knowledge that they earn more than fishermen, thus allowing a further check on validity as well as providing the needed comparison group. As seen in Figure I administrators are ranked higher than fishermen on the rich-poor dimension. Thus the instrument appears to be eliciting valid responses.

In order to test the proposition that fishermen perceive themselves differently from administrators on these dimensions, the difference in the rating between fishermen and administrators each respondent gave for each of the dimensions were entered into t tests of significance.² As seen in Figure I fishermen perceive themselves as less intelligent, more independent, poorer, more generous, more honest but neither more concerned about others nor more "good" than administrators. As seen from the t values, the strongest perceived differences are in wealth and independence. It is important to note also that in addition to perceiving themselves differently from administration, fishermen perceive themselves to be significantly above the midpoint of the scale on independence ($\chi^2=26, p < .001$).

Discussion

These data support the argument concerning the relative independence of successful fishermen presented above. If these fishermen behave according to their perceived independence, then it follows that a cooperative organization that is incompatible with this hypothesized adaptive characteristic will be resisted by successful fishermen. Coopepes' organization is indeed incompatible with this psychocultural characteristic.

We may list several specific reasons where it is incompatible:

1. It was set up by non-fishermen to meet a need felt by the federal government officials and not by local fishermen.

2. It required fishermen to sell to one buyer, the coop, without guarantee of being provided some of the price and non-marketing advantages provided by competing local middlemen (cf. Pollnac 1978).

3. It would impose gear and boats selected by others.

4. It would impose fishing locations selected by others (some of the new boats are meant for offshore work which is unfamiliar to local fishermen).

5. Despite provisions to the contrary in the charter of the coop, in the eyes of the fishermen and perhaps in reality it would organize fishermen into a hierarchical organization run by non-fishermen with potentially little sense of individual control for fishermen.

It is my interpretation that it is this incompatibility that is most important in understanding why Coopepes did not attract successful fishermen to it ranks and, in fact, why it has not been successful. However, there is a secondary issue that has emerged since its formation that should be mentioned, as it might be misunderstood as the "cause" of the "problem" of Coopepes. There is the general feeling that the coop has been badly managed and that the first three managers have been dishonest. When my 1978 sample of 50 fishermen was asked what the problems of coopepes are, they emphasized poor management in their responses. Forty percent of the responses concerned this issue while only six percent mentioned "poor members."

While it is true that there is a widespread view even among fishermen that the main problem of the coop is that it has been poorly run, current attempts to improve the situation of the coop by upgrading leadership will probably not work. The coop has the wrong constituency, and this appears to be due to the incompatibility problem at its onset, and not to bad administration after the coop was formed.

There are several recommendations that an applied anthropologist could make to help decision makers reach desired goals. It is possible to learn what successful fishermen expect a coop to do for its members and to structure the coop in light of these expectations. Respondents were asked to indicate "What is a coop supposed to do for its members." Fishermen emphasized that a coop should provide equipment and supplies and other necessities at a good price. Sixty percent of the answers were concerned with this function. Thus the majority of fishermen appear to have a supply coop in mind.

One Costa Rican government official has suggested that perhaps a two stage coop would help correct the coop situation in Puntarenas. Under this plan, successful fishermen who already have boats would be organized into a service coop designed to help them with problems of icing their fish and keeping boats operating. The second coop would be a financial coop designed for fishermen without boats, who would be organized into a government managed coop for the purposes of utilizing the new boats.

These solutions are probably somewhat better than the first attempt in that a service coop is exactly what the majority of already successful fishermen appear to expect from a coop. However, there remains the difficult problem of organizing the service coop in a way that it does not impinge significantly on successful fishermen's need for independence.

The second coop, the government managed one, would appear to have a high probability of failure for several reasons. First we might assume that many of the potential members of this coop will be marginal fishermen, that is those who have been relatively unsuccessful under current conditions. Placing the new higher level technology in the hands of these individuals without careful screening and training could invite serious difficulties. Secondly, a govern-

ment managed coop will probably lead to the inefficiency that is common in company owned fishing boats in other parts of the world because, as noted by Stokes (1978), worker ownership reduces employee-related drags on economic performance. These include absenteeism, poor workmanship, high turnover, and strikes. A scheme where coop members could earn a share of their boat earnings and qualified skippers could work for ownership of his craft would seem to be in order in this situation.

Although this analysis does not deal with all of the psychocultural variables that might impinge on the question of who will join fishermen's coops and how they can be organized to function effectively, it does illustrate the utility of applying the adaptational theory developed by anthropologists. The formation of small-scale fishermen's coops in development situations has considerable obvious utility for government officials and financial institutions working from above, but the organization of fishermen's coops that work, requires the kinds of insights and awareness of psychocultural differences that can be provided only by the type of local level analysis discussed in this paper. These analyses, of course, can be most effective for planning purposes when they are conducted before fishermen's cooperatives are actually formed.

Notes

¹Because of the unavailability of a list of fishermen and temporal constraints, it was not possible to draw a truly random sample. Interviews were conducted with all fishermen who could be contacted at selling points and other spots where fishermen gathered, no fishermen refused to be interviewed. It is estimated that the sample here represents about ten percent of the population of non-coop small-scale fishermen in Puntarenas.

²This is a one sample test of difference in means in which the null hypothesis is that there are no differences between the groups. Thus in the formula $t = \frac{\bar{x} - u}{S/\sqrt{N-1}}$ \bar{x} = mean differences between fishermen and administrator on the dimensions, S is the standard deviation on the dimensions, while u the expected difference would equal zero because of the null hypothesis that there is no differences between the groups (cf. Blalock 1969:148).

³Because some readers might object to the use of a t-test with what may be considered quasi-interval or even non-interval data, a one sample chi-square test was run on the data. In terms of significance the results were equal to those of the t-test.

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