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This study examines certain changes taking place within the occupational world of commercial fishermen in the United States. An ethnographic description of fishing in Bristol Bay, Alaska, is provided. This fishery is regarded as an exemplar of "modern" fishing and is shown to contrast sharply with "traditional" fishing. Some of the more critical social and economic features of fishing as an occupation are translated into analytic variables for comparative purposes. Finally, some consequences of observed variations within the occupation are discussed with attention directed to the prospective future faced by fishermen.

An Occupation in Transition

TRADITIONAL AND MODERN FORMS OF COMMERCIAL FISHING

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Fishing as an occupation is treated ordinarily as a "traditional" hunting and gathering activity marked by uncertainty, danger, fraternity, low levels of bureaucratization, high levels of task interdependency, and a distinct local and familial character (e.g., Firth, 1966; Tunstall, 1969; Andersen and Wadel, 1972; Salaman et al., 1974, 1976; Firestone, 1978). By and large, the sociology of fishing represents little more than a

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subset of the sociology of fishing communities or societies.[1] The limitations of such an approach loom rather large, however, when one turns instead toward contemporary industrialized societies where fishing is but one economic activity among many. In general, most studies of fishing settlements emphasize the stable and routine aspects of fishing and fail to reflect (or anticipate) the diversity found among fishermen within or across communities and the historical or comparative character of the occupation as practiced in specific settings on specific occasions. It is to the issues of social variation and occupational change in fishing that the following analysis is directed.

When attempting to both describe and account for current patterns of commercial fishing in the United States, three relatively recent social and technological trends are obvious and significant. First, fishing ports are growing far more diverse in almost all respects than in times past. Fishing strategies are changing, ethnic domination of ports is declining, boat designs are varying, new fishermen (and women) are being recruited into the occupation, and so forth. This is as true for large complex ports as it is for small simple ones (Miller, 1979). Second, fishermen are increasingly subject to government regulation. The essentially laissez-faire market mechanisms associated with fishing as an economic activity in the United States is giving way to quotas, licensing, closures, optimal yield calculations, and various other governmental social control practices designed, in part, to insure the conservation of scarce natural resources and, in part, to promote the financial interests of the industry if not the nation (Johnston, 1976; Terry, 1972; Miller and Van Maanen, 1979). Third, relatively recent technological innovations have altered certain taken-for-

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culled the ethnographic materials but also several useful concepts emerged as well. Partial support for the research presented here was provided by Chief of Naval Research, Psychological Sciences Division (code 452), Organizational Effectiveness Research Programs, Office of Naval Research, Arlington, VA 22217 under Contract Number N00014-80-C-0905; NR 170-911 and by the Northwest and Alaska Fisheries Research Center, University of Washington.

granted features of the occupation. Modern fishing vessels are typically expensive, electronically and mechanically sophisticated, and far more versatile than their predecessors. Technologically influenced alterations in the various systems of transportation for fish (and fishermen) have greatly expanded the markets (international and domestic) for both fresh and processed fish. Moreover, fisheries and fish movements are receiving considerable scientific attention, with the result of improving the various predictive models applicable to locating and estimating the amounts of certain species of fish (e.g., Alverson, 1972). While it is not obvious how and in what ways these changes have altered fishing practices and organization, it is the case that among fishermen, such changes have not gone unnoticed.

A CASE IN POINT

In this article, we explore some of the social and economic consequences of the above changes upon fishermen. Specifically, we argue that the prevalent view of fishing in the United States as shaped by local, tightly organized, and custom-bound occupational communities of fishermen (i.e., "traditional" forms of fishing) is a misleading one. To be sure, there are many traditional fishing communities in the United States, but a growing number of fishermen, responding to what they believe are promising economic opportunities, are working outside these communities in some striking new ways. The social and economic patterns that are emerging beyond the traditional context are labelled "modern" forms of fishing. This transition is just beginning to occur and, as a consequence, we have the chance to observe not only the situational conditions and short-term outcomes associated with such changes but also the opportunity to add modestly to the general understanding of occupational, organizational, and social change.

Our method is to examine changes in the fishing occupation as they appear within the context of the salmon fishery in Bristol Bay, Alaska—a fishery particularly responsive to the three trends described above and a fishery many fishermen regard as novel, chaotic, and downright frantic. What this look at an atypical and, in most respects, "extreme" fishery documents is the need to alter present conceptions of fishing in order to account for contrasting patterns of occupational practice and organization. Most studies of fishing concern fisher men who are, for example, part of a single fishery based in a permanent home port. On these grounds alone, Bristol Bay fishermen stand out, for they are involved in at least two fisheries and do not, in any way, consider Bristol Bay their home. By examining what we label a modern form of fishing, we seek to suggest empirically that what many observers of fishing regard as occupational constants are, in fact, occupational variables.

FISHING IN BRISTOL BAY[2]

The Bristol Bay salmon season in southwestern Alaska is a breathtaking ecological event, an extremely profitable economic phenomenon (e.g., some fishermen report making up to $10,000 per day), and a charged social scene. Contributing to this annual drama are: (1) a stark and remote setting in tundra Alaska, (2) the world's largest runs of sockeye salmon, and (3) a huge seasonal influx of commercial fishermen and processors. The great majority of fishing efforts occur during a six-week summer period. The remaining 46 weeks of the year, most Bristol Bay salmon fishermen are engaged in a wide variety of fishing and nonfishing activities thousands of miles away. Much of what contributes to the uniqueness of the Bristol Bay fishery, is, then, its geographical, temporal, and social isola tion.

Fishing in Bristol Bay is concentrated at the mouths of the Kvichak and Naknek Rivers. During the salmon season, the

towns of Naknek (pop. 318), South Naknek (pop. 154), and King Salmon (pop. 202) boom. More important than these towns to the fishermen, however, are the seven canneries which dot the banks of the Naknek, the large airstrip 17 miles from the fishing waters, and the recently completed highway connecting the two. Fresh fish can now be transported easily along the new road to the airstrip and then shipped to destinations around the world.

PARTICIPANTS

Fifteen hundred drift gillnet vessels, with an average of two persons aboard, annually compete for salmon in Bristol Bay. Additionally, the 650 set net operations along the shoreline involve another 1000 or so persons. These fishermen represent a diverse assembly of people hailing from all the western states and far beyond.

Participation in this migratory stream is both historically and ethnically specific. The present ethnic composition of fishermen reflects successive migratory waves of various ethnic groups since the turn of the century. For example, prior to World War II, a large percentage of Bristol Bay fishermen were Scandinavians from Seattle. The years following World War II saw an influx of Italian fishermen, many of whom had fished previously in both California and Italy. This period also brought Slavic fishermen to Bristol Bay. The 1960s marked the penetration of Croatian fishermen whose numbers grew steadily throughout the decade. The entrance of the "ethnically unaffiliated" fishermen took place in the 1970s. Fishermen falling into this category are referred to by other fishermen in a variety of ways, not all of which are complimentary (e.g., "newcomers," "part-timers," "greenhorns," "professionals," and so on). Finally, there have always been "local fishermen" in Bristol Bay. Within the categorical lexicon of the area, this group is subdivided (though not without ambiguity) into Native American (Eskimos, Aleuts, and Athabascans) and Caucasians or "whites." Fishermen familiar with Bristol Bay's

past contend that "local fishermen" used to be thought of merely as residents of Alaska, but this is now changing and becoming denotatively more narrow and connotatively more nuanced.

Of critical importance, however, is the fact that these groups have not replaced one another over time in a serial fashion but have added to one another in an accumulative fashion. All of the above groupings are to be found at work during the salmon season in Bristol Bay. Moreover, each group represents a contrasting occupational community of fishermen—with different standards, strategies, and social relations. There are virtually no overlapping crews. Members of an ethnic group, for example, fish only with other members of their group (in many cases, only with kin). Most, if not all, arrangements for crew composition are then made before fishermen arrive in Alaska. Bristol Bay is not a place to find a position on a fishing boat.

Fishermen arrive by air or boat in Bristol Bay and fit into the local order or scene in several ways beyond that preestablished by crew composition. One method is to reestablish ethnic or home-port ties. Fishermen from as far away as Sicily and Norway, for example, are reunited annually in Bristol Bay with relatives and past fishing partners. Other fishermen, particularly those without strong ethnic or home-port ties, constitute an "oldtimers" network based upon the shared experiences of having fished Bristol Bay for many years. One growing but problematic participant in Bristol Bay is the "newcomer" who does not quite fit into any of the recognized groupings. These fishermen, though perhaps quite experienced elsewhere, are uninitiated into the vagaries of Bristol Bay and are unfamiliar with the cultural understandings different groups of fishermen use to regulate their fishing activities (Miller and Van Maanen, 1979). Their reliance on other fishermen for fishing-related information is substantial and to provide (or to be asked to provide) such information is annoying to many fishermen. Though newcomers may have rules of their own as to how one

is to fish, they have not yet been exposed to Bristol Bay and have difficulty making sense out of the bewildering variety of cultural rules, practices, and styles at play in the fishery. It is in this sense that the Bristol Bay fishery cannot be seen as a single occupational community; it is better viewed as an assembly (something like a convention) of contrasting occupational communities of fishermen.[3]

To many fishermen in Bristol Bay, working alongside strange groupings of fishermen who fish and behave in vastly different ways is unsettling. Fishermen have thus far adapted to the situation by developing stereotypic models for one another. Functionally, this serves to reduce uncertainty and perhaps minimize intergroup conflict by allowing fishermen to categorize "odd" occupational conduct in terms of attributed ethnic or social differences.

> Italian fishermen, ya know, they all fish together in packs and come up from California. You can always hear 'm over the radio saying things like "Where'd Dad go?" or "Have you seen Uncle Sal?" The one's from Pittsburg (California) always fish next to each other in a tight little cluster. . . . I keep my distance.

Social distance among fishermen is also sustained by work habits. In general, there are few nonworking hours for Bristol Bay fishermen. It is common for a fisherman to work for 20 or more hours straight and then rest for 4. Other patterns exist of course, but what is consistent across fishermen are the long, consecutive, and instrumentally focused hours put in on the job. There is very little, if any, time allocated by design for leisure or informal socialization. The salmon season in Bristol Bay represents, to adjust Goffman's (1961) famous phrase, a "total work institution."

> If I'm not fishing, I'm delivering fish. I'll use an alarm and sleep for 15 minutes while I'm drifting and my net is out. It's a full month without sleep up here. . . . This is what separates the highliners (top earning boats) from the rest of them. You only

> stop to sleep when you can't take it anymore. Some guys sleep every night. Those are the guys who come up to play, not work. One guy I know is always depressed about how he does, but he always sleeps six to eight hours a night.

This emphasis on economic performance leaves little time for social interaction to develop among fishermen on different boats. In fact, most communication between fishermen who are not members of the same crew occurs over the radio instead of face to face. In this light, it is hardly surprising that stereo types of other occupational communities provide a fisherman with his greatest source of information about the social composition and working styles of others in the fishery.

FISHERY ORGANIZATION

Several institutional mechanisms restrict and limit the migratory participation of fishermen in Bristol Bay. The first mechanism is recent, more or less public, and consists of various legal statutes and enforcement practices. The second mechanism is historical, private, and concerns the notion of "cannery affiliation." We consider the regulatory rule of government first.

Efforts to officially manage fish stocks, fisheries, and fisher men in the United States have taken four forms: limited entry, restricted capacity of efficiency, limited seasons, and the establishment of quotas. In many respects, Bristol Bay represents one of the most heavily regulated U.S. fisheries. For example, the Alaska Department of Fish and Game (ADF&G) excludes from Bristol Bay all other forms of salmon fishing except the use of set or drift gillnets. Boat lengths are limited to 32 feet. Catches must be processed within certain deadlines. There are closed waters and strictly bounded fishing periods. Of the four governmental strategies of fishery management, all are utilized in Bristol Bay. Policing is also stringent and violations, if discovered, are dealt with severely. While all fisheries in the country are subject to increasing regulation, few compare with

Bristol Bay in terms of the effectiveness with which such regulations can be enforced, so congregated, restricted, and easily monitored are the areas of fishing and landing.

Such regulations do more, of course, than simply manage the fishery in anticipated and steady ways. Consider, for instance, the influential role the policy of "limited entry" has had in shaping the fishery. Instituted in the early 1970s, entry permits were given to captains of Bristol Bay boats fishing during those years. Subsequently, permits could be obtained only if purchased on the open market. In March of 1977, with an uncertain season ahead, the price of a permit was roughly $5,000; in November of 1980, with a banner year predicted, the price of a permit is minimally $100,000 and rising. Since there are buyers, the range of capital investment represented by the boat owners involved in the fishery is, by comparison to other fisheries, enormous.

Aside from governmental control practices, the canneries of the region also play a central role in regulating fishing in Bristol Bay. As one fishermen remarked: "Just because you have a permit doesn't mean you have a market." The notion of "cannery affiliation" is particularly important in this regard. Affiliation with a cannery is significant to fishermen because canneries supply them with a guaranteed buyer, with seasonal stores, with parts, services, and fishing equipment, with occasional (or seasonal) room and board, and, in many cases, with off-season boat storage.

Historically, the geographic isolation of Bristol Bay has limited the number and kind of fish processing firms. Because of the large capital investment required to operate in the region, the canneries that emerged and survived were few in number but particularly powerful (Crutchfield and Pontecorvo, 1969). This power was most visible in terms of the asymmetric relationship existing between cannery and fishermen. Prior to World War II, the canneries controlled all the factors of production in the area and fishermen were paid on a percentage-of-catch basis. In brief, the fishermen were

employees of the canneries who owned the boats, the equipment, the supplies, and, some would say, the captains.

There are now few cannery-owned boats in Bristol Bay and cannery ownership of production factors has, in general, declined. Accounts for this shift vary, but four reasons are given most credence by fishermen: the increased cost of maintaining power (as opposed to sail) fishing boats, particularly as cannery boats aged; the decreased isolation of the area, a result of improved methods of transportation; the organization of fishermen into strong cooperative bargaining units; and the entry of "cash buyers" (fish dealers without processing capacity) into the area.

These are relative changes, however, and while the relationship among canneries and fishermen have become more reciprocal of late, the canneries still shape and control a great deal of the fishing activity in Bristol Bay. For example, canneries put restrictions on the number of pounds of fish a boat can deliver to tenders. Canneries also set and restrict the length of fishing periods beyond that of state law by virtue of their decisions about when to open and shut down operations. Moreover, canneries can and do use their "affiliation" leverage with fishermen to increase production. A year-by-year account of a captain's mean catch is filled with various company records relating to specific fishermen. Any significant decrease in terms of the previous year's catch may well mean the captain's expulsion from the cannery. To the cannery, a decrease without obvious explanation (e.g., engine trouble, sickness, and so on) can mean only that the captain is unproductive or is dealing with a cash buyer and is therefore not honoring the affiliation contract which requires exclusive exchange.

Canneries also control the primary social institution of Bristol Bay, the fish camp. In addition to handling the catch, boars, and processing associated with fishing, fish camps provide room and board for some fishermen during the season and, of equal importance because of the transportation costs involved in getting a boat to and from Bristol Bay, provide storage for

boats during the off-season. Fishermen who do not live aboard their boats while in Bristol Bay live in bunkhouses supplied by the canneries. Rooms are assigned to boats with captain and crew sharing rooms. This further reinforces the crew as a social unit and, through the practice of assigning certain "types" of fishermen to specific bunkhouses, canneries also promote the segregation of fishermen into larger identifiable networks based primarily upon ethnicity.

In most respects, canneries (and the fish camps associated with them) are self-sufficient micro-communities within the local area. They are supplied with goods shipped in from outside the region and deal with few, if any, local businesses. Correspondingly, fishermen themselves have little interaction with or interest in the Bristol Bay community. Only an occasional visit to one of three local bars or the one irregular movie house may interrupt what is otherwise an encompassing schedule organized by fishermen primarily around their work and only secondarily around whatever social life is immediately available in the fish camp (e.g., mess hall meals, talk, card playing, drinking in the bunkhouse, reading, and sleeping).

Though the canneries are of undeniable importance to the social and economic life of Bristol Bay, the successful organization of a fishermen's collective bargaining group (the AIFMA, Alaskan Independent Fishermen's Marketing Association) has enabled fishermen to challenge the economic dominance enjoyed by the canneries of the region. This association, in essence a local fishermen's union, has brought together owner-captains of the majority of boats in Bristol Bay (and indirectly the crew members of boats since crew members are all paid on a share-of-earnings basis) to negotiate with the canneries, prior to the start of the season, the price to be paid for the salmon catch.

The strength of this association is unique compared to other U.S. fisheries where contracts between fish processors (buyers) and fishermen are typically negotiated individually and are therefore highly variable across specific relations and encoun-

ters. Some indication of the AIFMA's influence is reflected by the five-day "strike" called by the association at the beginning of the 1979 season—a comparatively rare event throughout the history of American fishing. Without an agreed upon price settlement in hand, individual fishermen were forbidden by the association to fish, and those few who did were forced to leave the association. One fisherman remarked:

> They were mostly newcomer's working for one cannery. We called them scabs. . . . Some fishermen threw firecrackers and eggs and some wanted to shoot them. But the association didn't condone that kind of action.

Complicating the contractual relations between association members and the canneries is the previously mentioned presence of the cash buyer. Relations between the fishermen and cash buyers tend to be informal, specific to a given transaction, and expressed in terms of verbal negotiation and agreement—though cash buyers on occasion do publicly advertise their offers. The principal advantage for fishermen of dealing with cash buyers is price—cash buyers pay more. Yet, disadvantages are numerous, so numerous in fact that cash buyers have not seriously disrupted cannery arrangements with fishermen in Bristol Bay. Specifically, cash buyers are seen by fishermen as less reliable than canneries. Several cash buyers, for example, went bankrupt in 1979, leaving fishermen with worthless checks. Nor do cash buyers provide extra services for fishermen such as year-round storage of boats, repair facilities, mechanical expertise, supply stores, and so forth. More to the point, cash buyers do not, as canneries do, guarantee a fisherman a market for his fish.

PATTERNS OF ACTION

By all accounts, the last several seasons in Bristol Bay have been among the most unusual on record. Never have new entrants paid so much to become involved, never have prices

been so high, rarely have the sockeye runs been so bountiful. Although these features in isolation do not qualify Bristol Bay as unique, together they do. The kinds of events that now recur with some regularity in the course of a season and the interpretation given to these situations by the fishermen themselves signal a subtle departure from conventional professional commitments to commercial fishing. The novelty of Bristol Bay fishing is apparent in the following examination.

Three interrelated phenomena stand out when describing the 1979 season. These have to do with the (re)definition of workplace activities and allocation of time, the reality of a harvesting effort far out of proportion to processing abilities, and the occupational orientation of fishermen. First, as one observer on the scene put it:

> The season was marked by good fishing and poor processing. It was fun to watch the fish hit the net and explode out the other side. But it was depressing seeing the obstacles coming in.

In the height of the season it took less than one half hour to fill a boat with fish, 4 to 6 hours to separate salmon from the gillnet, and 10 to 20 or more hours to unload the catch as a result of exceedingly congested tender lines. Fishermen would, as one journalist suggested, make a frantic Le Mans start when going out to fish, quickly fill their holds, and then literally race to the tenders only to face a long tedious, and thoroughly disliked period of making constant minor adjustments in the lines binding a boat in the unloading queue.

The image of hunt, pursue, and trap which accurately surrounds the uncertainties involved in most fishing ventures simply does not fit the reality of Bristol Bay. The Bristol Bay fishery is based on an ecological regularity—the annual return of a more or less predictable number of salmon. Though the last two years have been extreme cases, it is generally true that in Bristol Bay, fish do not have to be located, only harvested. In fact, during the heaviest part of the runs, the greatest danger fishermen face is that their gillnets will become so over-

loaded with intercepted fish that their boats will capsize and be pulled under by bloated nets.

The fact that processors could not keep pace with the fishermen who could not keep pace with the sockeye led to the second phenomenon of interest associated with the 1979 season, waste. Fishermen unable to unload their catch within the state- and cannery-instituted time restrictions which operationally define the concept of marketable (fresh) fish were compelled to jettison their entire catch. The scene was described painfully by one fisherman:

> I saw tide rips 10 to 15 miles long full of salmon floating on their sides. We called them grey ghosts and sidestokers.

In some cases, however, fish were landed, processed, and exported to Japan and Europe only to be rejected by buyers as spoiled. As a result, the international reputation of Bristol Bay fish fell as did demand. Moreover, the domestic reputation of Bristol Bay salmon was damaged when the U.S. Food and Drug Administration withdrew a substantial portion of Alaskan salmon available for public consumption. While there exists no one agreed upon cause for this lack of quality control, both fishermen and processors alike have been faulted. Consider one view:

> There has always been a lot of sloppy practices. I mean, my God, man, they put a lot of those salmon on dry scows and no ice out there in the bright sun and let them sit for a day or two before they start to process them. What's the good for me to deliver to the scows when it just sits there for two days and bakes in the sun [fisherman].

And another view:

> There was absolutely no respect for the fish. It was treated horribly because everybody knew it didn't make any difference. Who gives a shit whether the scales are off. It's going to go into a can and get cooked [processor].

In spite of these peculiarities, the 1979 season was, in almost every respect, an extremely lucrative one for all Bristol Bay fishermen. This prompts our third observation: The discomforting problems associated with the 1979 season were viewed by fishermen as unfortunate to be sure, but, overall, these problems were taken rather lightly and viewed as merely slight inconveniences or minor operational issues. In light of the potential (and realized) economic rewards, fishermen demonstrated that they were able to tolerate great ethnic and working style diversity, to band together and negotiate with canneries as a collective unit, to manage without disruption the presence of cash buyers (some with dubious reputations), to embrace a stern work-only existence governed by contract, to live in not-so-splendid isolation thousands of miles from home for an extended period of time, and to more or less overlook poor processing, considerable waste, and a great deal of external regulation. The point to be made here is simply that, individually and collectively, these working conditions would be regarded as loathsome if not inconceivable by most fishermen unfamiliar with Bristol Bay.

The general character of Bristol Bay in 1980 mirrored 1979 with one notable exception, a fisherman's boycott which delayed the start of the fishing season for several weeks. The reactions of Bristol Bay fishermen throughout this period were remarkably similar to those displayed by members of modern industrial labor unions. Demonstrating a talent historically uncharacteristic of others in their occupation, fishermen solidified behind their association and appeared to be prepared to forego the entire fishing season if necessary. Their demands were eventually met, and, if any lessons were learned by the boycott, they were of the sort that suggested the viability of collective tactics. Significantly, fishermen now discussing future seasons in Bristol Bay place considerable emphasis on bargaining tactics and off-season negotiation.

In sum, Bristol Bay seems in no immediate danger of either vanishing or becoming a "traditional" fishery worked only by resident (or near-resident) fishermen. What it will become is

less certain, although it does seem assured that fishermen, like the salmon they intend to catch, will continue to migrate seasonally and, in the process, continue to refine and create new forms of fishing organization. It is in this sense that Bristol Bay can be seen as transforming the occupation in particular ways and can therefore be regarded, for the moment at least, as a "modern" fishery.

THE TRADITIONAL AND MODERN IN FISHING

Table 1 makes explicit and formal certain dimensions of contrast which discriminate between two contemporary forms of commercial fishing, the traditional and the modern.[4] The contrasts we draw are idealized ones and are presented not only as distinct but also as if traditional and modern forms of fishing were mutually exclusive. This is, of course, a distortion, for the distinctions made inTable 1 are not only interrelated empirically to one another but also, in any given fishery, mixed in various ways across the two idealized types. By choosing an extreme form of modern fishing for comparison to the traditional form, however, the variables are patterned in maximally divergent ways, thus serving to make visible what might otherwise be unseen.

The dimensions of contrast between traditional and modern fisheries are organized with respect to the social and economic categories of interest highlighted in the previous section. As can be seen, on these dimensions, whatever modern fishing is, traditional fishing is not. In essence, Table 1 represents what we believe to be the most important distinctions to be made across fisheries in the United States. When interpreting Table 1, however, several qualifications must be kept in mind. First, the contrasts are meant to be illustrative and primarily suggestive, not absolute; it remains an open empirical question as to the extent to which the variables used here represent an

TABLE 1
Contemporary Forms of Commercial Fishing

	Traditional Fishing (e.g., Gloucester, MA)	Modern Fishing (e.g., Bristol Bay, AK)
Social Organization		
Backgrounds of fishermen	Homogeneous	Heterogeneous
Ties among fishermen	Multiple	Single
Boundaries to entry	Social	Economic
Number of Participants	Stable	Variable
Social Uncertainty	Low	High
Relations with competitors	Collegial & Individualistic	Antagonistic & Categorical
Relations to port	Permanent with ties to community	Temporary with no local ties
Mobility	Low	High
Relation to fishing	Expressive (fishing as lifestyle)	Instrumental (fishing as a job)
Orientation to work	Long-term, optimizing (survival)	Short-term, maximizing (seasonal)
Tolerance for diversity	Low	High
Nature of disputes	Intra-occupational	Trans-occupational
Economic Organization		
Relations of boats to buyers	Personalized (long-term, informal)	Contractual (short-term, formal)
Information exchange	Restrictive & Private	Open & Public
Economic uncertainty	Low (long-term)	High (long-term)
Capital investment range	Small	Large
Profit margins	Low	High
Rate of innovation	Low	High
Specialization	Low	High
Regulatory mechanixms	Informal & Few	Formal & Many
Stance toward authority	Combatative	Compliant

exhaustive and researchable set. Second, we do not claim there are deterministic links—in any direction—between the economic and social categories. Each category represents merely an arbitrary but convenient means for organizing particular descriptive variables. Yet, we do claim an empirical and, in the reciprocal sense, causal connection among the qualitative values displayed for each variable as they appear under a common (column) heading. Third, Table 1 displays only the variables that distinguish modern from traditional fishing. Many characteristics of fishing do not contrast—fishing is physically dangerous no matter what form it takes, it is a competive enterprise in any U.S. commercial port, fishermen, regardless where they are located, greatly value autonomy and their corresponding social identity as independent and rugged individualists, relations among crew members are typically cohesive and marked by mutual regard, and so on. Yet, beneath this common and undifferentiated exterior, there are, as displayed, a number of crucial and highly variable social and economic factors, which, when firmly in place as is currently the case in Bristol Bay, alter if not invert the conventional descriptions, imagery, and sociological accounts of commercial fishing.

COMMENT: THE RATIONALIZATION OF FISHING

Fishing has been viewed almost exclusively as a close-knit occupational community of men, boats, and families dwarfed by a massive, inhospitable sea whose secrets are forever locked beneath its surface. Reconciling good and bad luck at sea, fishermen have historically preferred and emphasized folklore, tradition, loyalty, fancied associations, ritual and ceremony, and local autonomy over that offered by science, technology, official regulation, strategic calculation, collective organization, and impersonal selection and decision-making criteria.

Epitomizing the traditional perspective on fishing, a New England fisherman's remark is especially relevant in this regard: "If I was going out everyday and knew I'd fill my boat with fish, I wouldn't go."

There is mystery here, an attraction beyond the instrumental and computed. Fishing in the modern sense is, however, less a way of life than it is a rational choice of economic activity. It embodies few traditional attractions and values. In Bristol Bay, there is no Blessing of the Fleet, and a fisherman goes fishing precisely because he knows he will fill his nets; were it otherwise, he would quickly pack his gear and leave to ply his trade elsewhere. There is little to bind this fisherman to his occupation beyond the principles of economic motivation and exchange. This is not to suggest that such economic principles do not operate in traditional fishing communities. Indeed they do, though they are tempered by established normative and behavioral conventions that stem from the fact that fishermen must live with one another as well as work with one another.

Within this framework, it is important to recognize that Bristol Bay is but one configuration expressing a modern form of fishing. Other fleets and fisheries are perhaps equally (if not more) modern along certain dimensions. The Bering Sea king and tanner crab fleets and the San Diego-based tuna fleet have, for example, vessels up to 10 times the length of Bristol Bay boats. But, our point is that modern goes beyond species specialization, capital investment, or ultra-sophisticated equipment. Technological modernity does not necessarily imply a modern social organization (Orbach, 1977). Bristol Bay is modern in terms of its social and occupational variables. It is modern not because of seasonality, biological uniqueness, ease of harvesting, or size and speed of the fisherman's migration but because the combination of these and other features presents a picture so unequivocally nontraditional. There are, however, some logical possibilities that threaten the recent and still uneasy economic gains made by the new, mobile, and, as of now, independent fishermen. Three are outstanding.

First, modern fisheries, as is dramatically the case in Bristol Bay, may become even more capital intensive than current indicators suggest (Vanderpool, 1979). As a result, individual investment may give way to corporate investment. A parallel to the logic of industrial growth can be drawn here since systematic, technologically advanced, and wholly nonimpressionistic means are now available for locating, processing, and transporting fish to known markets where returns are more or less predictable. Economic rationality suggests that corporations would be quite likely to fish only on the peaks of various seasons in quite specialized ways and attempt to keep their boats (and their fishermen-employees) active the year-round. Decisions about when, where, or what to fish would be more likely to be made by nonfishing corporate managers in Houston, New York, or Los Angeles than by fishermen residing (permanently or temporarily) in any given port.

Second, the boom-or-bust orientation associated currently with modern fisheries may collapse as the long-term consequences of intensive "fishing-out" strategies become known. A number of Atlantic fisheries are already characterized as depleted and, while most Pacific fisheries are presently regarded as abundant, conservation trends can be expected to increase in virtually all regions and ports. The view that fish are a "valued national resource" has become widespread. Thus, short-term, instrumental, exploitation strategies adopted by many fishermen face increasing modification as federal, state, and local regulations become more stringent and sophisticated. Contrary to popular opinion, corporate influence on these matters might well be expected to offer support (although qualified) of such regulation as a way of protecting major investments in the harvesting and processing of fish products. Fishermen may then become more mobile and less independent as the definition of "profitable fisheries" shifts from the short term to the long term. Mobile fishermen are currently gaining skills in different kinds of fishing locales, in fishing on a variety of boats with varying gear configurations, in playing different

kinds of occupational roles (captain in one fishery, deckhand in another, engineer in still another, and so on), and in handling more than one species from season to season and year to year. What they are not gaining is the capital which would allow them to possess an individual stake in various fisheries. To participate as something more than an employee in, for instance, the salmon season in Bristol Bay, the tuna season off the coast of California, and the shrimp season in the Gulf of Mexico would require a massive financial investment. In the short run, fishermen may become richer but, in the long run, they are likely to pay a price.

Finally, by promoting heterogeneity, impersonality, mobility, and an emphasis on contract, modern fisheries may hasten the demise of traditional fishing communities. But, as the rules, practices, and priorities of modern fisheries emerge, a familiar "gold-rush syndrome" may take effect such that only the early arrivals continue to reap the full benefits of exploiting a natural resource. If such an effect occurs, recruits to modern fisheries will have neither the warmth and fellowship of traditional fisheries to support them nor the promise of rapid and unlimited return offered by the modern fisheries of today. Just what these future fishermen of America will do is, of course, anyone's guess. But, we believe, while fishing is unlikely to become fully bureaucratized in the Weberian sense, it will become far more rationalized in the corporate and industrial sense. Therefore, fishing will become far less distinct as an occupation among occupations.

NOTES

1. Much of the work on fishing societies or communities takes seriously the aims of the population ecology school as developed at the University of Chicago: to discover and explain how given populations are territorially organized and encapsulated in the soil they occupy (Park, 1963: 33; Hollingshead, 1946: (68-69). Most studies in the area have been concerned, therefore, with the social processes and structures associated with the way a given population makes use of technology and human organization to

sustain itself (e.g., Firth, 1966; Fraser, 1966; Faris, 1972; Pollnac, 1974). For a good overview of what one researcher calls "marine sociology," see Vanderpool (1979).

2. This description of Bristol Bay is based upon ethnographic fieldwork conducted by Jeffrey Johnson during the 1979-1980 season. While a working resident (ship's carpenter, tender worker, and cannery bookkeeper) in Bristol Bay, Johnson's principle data-gathering techniques were those of the cultural anthropologist: participant-observation and the extended interviewing of key informants. Additional data were gathered through archival sources—newspapers, various fishing-related publications, library materials, and interviews by Miller with Seattle fishermen.

3. In some respects, Bristol Bay salmon fishermen represent an industrial and urban society's equivalent to a pastoral and rural society's "transhumant" segments of the population. The term, in its most general sense, reflects simply the seasonal movement of a human population from one ecological zone to another (Barth, 1961; Gomez-Ibamez, 1977; Hardesty, 1977). Transhumant populations maintain permanent residences on a cyclical basis as a settlement pattern in contrast to the nomadic pattern of sequentially abandoning residences. Though there are surface similarities, Bristol Bay fishermen differ from the original anthropological classification in several rather crucial ways: They migrate singly or in small groups; they are heavily dependent upon relatively sophisticated technology (airplanes, communication systems, helicopters, forecasting models, sonar systems, and so on); they represent a very differentiated population in terms of social and ethnic characteristics; they are highly competitive internally; they do not bring with them their supportive social institutions such as the family; and, as noted in the text, they never consider the migratory site "home" (see Johnson, 1979).

4. Representative empirical materials standing behind our characterization of traditional fishing in Table 1 can be located in: Anderson (1973), Cove (1973), Farris (1972), Firth (1966), Gersuny and Poggie (1974), Goodlad (1972), Tunstall (1969), and Yngvesson (1976). More pertinent comparatively, however, are the descriptions of contemporary fishing in Gloucester, Massachusetts, a most traditional fishery (see Bartlett, 1977; Miller and Pollnac, 1978; Miller and Van Maanen, 1979, forthcoming).

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