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Community-Based Fisheries Management Institutions in Indonesia

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ABSTRACT Problems and prospects associated with community-based management of tropical fisheries resources are examined through a comparative case study based on field research conducted in Indonesia during 1990 and 1991. The argument is made that the central government lacks both the detailed knowledge of local ecosystems and the enforcement capability necessary to effectively manage highly diverse fisheries resources in this large archipelagic nation.

Community-based fisheries management systems have a long history in Indonesia and under certain conditions have proven effective not only in managing fishery resources on a sustainable basis, but also in fairly allocating access to these resources among local users. The dynamics of such systems are illustrated by comparing community-based management of a freshwater fishery in West Kalimantan Province with systems used for managing marine fisheries in Maluku Province.¹ In both cases, long-standing management systems are shown to be based on detailed local knowledge and consensus among community members. These systems are shown to be dynamic and adaptive, but whether they can adapt to new pressures, created by rapidly changing market conditions and the efforts of local government authorities to gain control over resource allocation as a means of increasing tax revenues, is left as an open question. The case study materials are followed by a critical examination of the opportunities and problems associated with community-based fisheries management. The paper concludes with a set of specific policy recommendations that would encourage recognition of local rights to resources, decentralization of responsibility for fisheries management, and a recapitulation of the reasons for doing so.

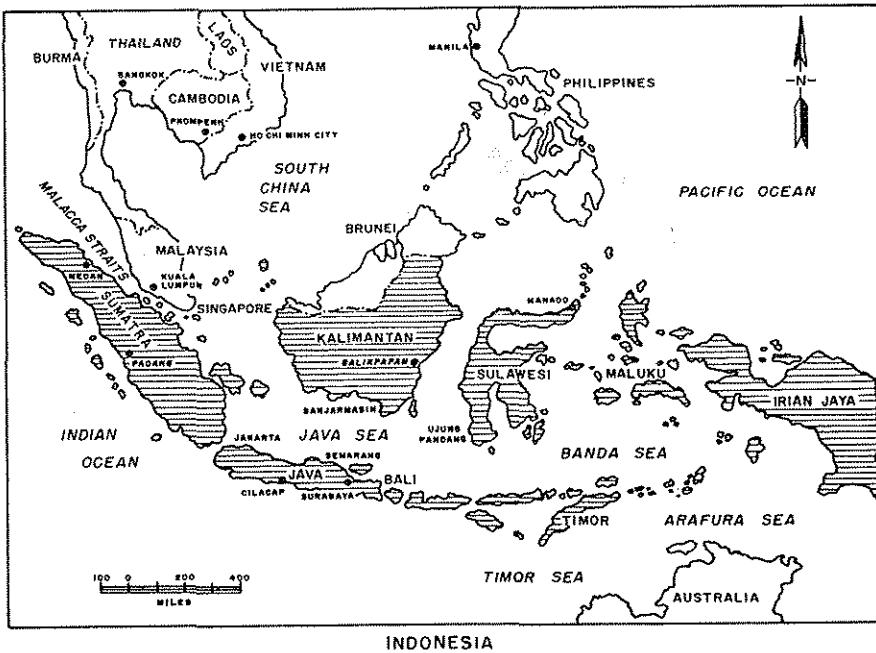
Introduction

Indonesia's marine fisheries sector is characterized by rapid adoption of new production technologies in a context of finite resource availability (Bailey et al. 1987). Opportunities for expanded harvests from the sea exist, but most important fishing grounds are heavily exploited and in some cases overexploited. During the next 25 years, resource management will become the key to fisheries development.

Fisheries management often is assumed to be a governmental responsibility (Gordon 1954). However, the effective capacity of government agencies to regulate what goes on in widely scattered fishing grounds is distinctly limited. This is particularly true in Indonesia, which has 81,000 kilometers of coastline and more than one million fishers. Compared to the scope of the problem facing government agencies attempting to control fishing activities, administrative and technical capacities are relatively weak (Bailey 1988b; Marlessy 1991a, 1991b; Zerner 1991b). Under these conditions, devolution of major resource management and allocation decisions to the local level may be more effective than management efforts which distant and understaffed government agencies can provide.

Community-based management systems offer the opportunity to allocate resource rights and benefits in a more sustainable and effective manner. Compared to these systems, government attempts to manage fisheries resources based on available scientific data are recent in origin and unproven in effectiveness. Results of our research indicate that the Indonesian government should resist the temptation to extend bureaucratic control over fisheries resources. Instead, the government should work in partnership with local management systems where they exist, and foster their extension into new areas wherever possible.

Throughout this paper we emphasize the dynamic, historically conditioned nature of community management institutions and their embeddedness in the larger context of political and economic forces. Community management institutions in Indonesia, like those elsewhere in Southeast Asia and the Pacific, exhibit great variation in their social-distributive designs, environmental consequences, and reliance on indigenous environmental knowledge. They also differ greatly in their cultural construction of



ideas of nature, resources, and habitat dynamics. These institutions should not be understood as if they were outside of time and place. They must be understood as human creations, situated in, made of, and shaped by the historical contexts in which they are embedded.

In this paper, the positive prospects as well as problems of local resource management in Indonesia are presented through recent case studies in Kalimantan and the Maluku Islands. These case studies are preceded by a general discussion which lays out the rationale for local management of common property fisheries resources. Following the case studies, the paper concludes with a discussion of the opportunities and limitations associated with local fisheries management and with specific legal and policy recommendations for encouraging effective local management of fisheries resources in Indonesia.

Community-Based Fisheries Management Institutions

The advantages of local management of fisheries resources has been well documented in various parts of the world, including the United States (Acheson 1975), Japan (Commitini 1966; Ruddle 1985, 1989), the South Pacific (Iwakiri 1983; Johannes 1981; Ruddle and Johannes 1985); and Indonesia (Zerner in press). A growing literature on local common property resource management systems dealing with forestry, graze lands, and other biologically renewable resource systems also is available (e.g. Agarwal 1991; Berkes 1989; Bromley and Cernea 1989; McCay and Acheson 1987; National Research Council 1987; Poffenburger 1990; Runge 1986).

Recent research in Eastern Indonesia (Abrahamsz 1991; Khouuw and Simatauw 1991; Zerner 1989a, 1989b, 1991a, 1991c) as well as historical surveys throughout the archipelago (Polunin 1984) suggest that local resource management systems may serve to effectively manage and allocate inshore fisheries resources. The efficacy of coastal community management institutions appears to depend on a number of factors, including relatively low population density, homogeneity of kin- or territorially-based communities, and the use of relatively simple extractive technologies.

However, many of these conditions are changing. Indeed, the viability of local management institutions is under assault by a variety of forces including the rapid expansion of global markets for marine products, the expansion of state control over local resource systems, the often misguided efforts of international agencies to promote fisheries development, and the increasing efforts of private sector investors to gain control over coastal and marine resource systems (Bailey 1988a, 1992). The cumulative effects of this tide of forces have undermined many community management institutions, economically and spatially marginalized local coastal communities, and led to overexploitation and degradation of coastal fisheries resources (Zerner, in press).

At the core of local management is the issue of property rights. Property rights are rights to a secure stream of benefits from the territory or the particular resource in question. The existence or absence of property or control rights is a matter of fundamental importance in conceptualizing fishery management policy issues. In fisheries, problems of over-exploitation generally are attributed to the lack of clear property rights and the consequent efforts of individual fishers, in an open access

situation, to maximize benefits even at the expense of resource sustainability and long-term societal good (Gordon 1954). In open access systems, there are no effective boundaries around the resource, no limits are placed to the entry of individuals who wish to share in exploitation of the resource, and no restrictions on how the resource is to be exploited. In the absence of clear and enforceable property rights, resource competition becomes a mad scramble that often leads to resource depletion and local impoverishment. Governmental regulations to control levels of fishing effort are imposed to forestall the 'tragedy of the commons' (Hardin 1968).

Part of the problem has been conceptual: governments frequently fail to conceive of or recognize the existence of local community management institutions which may effectively manage access to local resources. The 'tragedy of the commons' may not simply result from the fishers' inability or lack of desire to restrain themselves from overexploitation. The 'tragedy' outcome may also result from a governmental failure to recognize local community institutions, rules, and intentions to successfully manage resources.

In Indonesia, government fisheries policy is based on the assertion of total state management authority over marine resources and waters. Indonesian fisheries laws and regulations, moreover, do not explicitly recognize local community tenures or property rights, although this does not amount to the proposition that such rights do not exist. Lack of explicit government recognition of community tenures in inshore territories and resources continues despite mounting evidence that local fisher communities will fiercely defend their economic interests and territorial rights against economic injustice and outsider access (Bailey 1988b; Zerner 1991b). The contrast with landholders' rights could not be more striking. On land, the Basic Agrarian Law of 1960, which governs terrestrial environments, recognizes customary law (*hukum adat*) and community territorial rights (*hak ulayat*), allowing customary land owners and/or historic users the basis for legal claims.

The potential advantages of local management institutions include effectiveness and equity. They may be effective because local fishers are knowledgeable regarding the resource. Local fishers are likely to be motivated to protect their resource from overexploitation. In operation, these systems may be based on broadly accepted local notions of social justice, ensuring the legitimacy of the management system in the eyes of local residents. Local communities are in the best position to monitor compliance with regulations. In most rural fishing communities, informal social sanctions can be imposed on individuals who transgress collectively established restrictions.

The combination of physical presence and the application of informal means of social control is far more efficient than dependence on government agencies to enforce regulation. The cost of enforcing regulations along thousands of kilometers of coastline is prohibitive and in practice rarely occurs. In practice, government attempts to centralize fisheries management authority have resulted in *de facto* open access conditions throughout much of Indonesia. This is so due to the limited capacity of the central government to enforce fisheries regulations. The failure to recognize local community resource rights and responsibilities undermines community capacity to manage local resources and local incentives to comply with fisheries laws. Empowering fishermen to manage local resources is no panacea for the increasingly complex problems of coastal resource management. It is difficult to visualize achieving the goal of effective resource management, however, without the active involvement of those who will be most affected.

Case Studies from Kalimantan and the Maluku Islands

In this section we discuss the functioning of local fisheries management systems in a lake and river system of West Kalimantan Province, and management systems found to operate in the Maluku Islands. Both Moluccan and Kalimantan cases demonstrate the flexibility of community management institutions responding to rapid changes in the values of locally available resources. While the Kalimantan case demonstrates an attempt to wisely manage resources in the context of increasing market-generated pressures for exploitation, the Moluccan case demonstrates the relative weakness of community management structures and the potential for 'take-overs' by non-local, private sector or local government elites. The two case studies demonstrate that local management systems are dynamic and under significant commercial and political pressure. The case studies also demonstrate that such systems are both dynamic and variable.

Kapuas Hulu

The Kapuas River of West Kalimantan Province is the longest in Indonesia. The Kapuas River fishery is one of the most important freshwater capture fisheries in Indonesia. The fishery can be characterized as multi-species, multi-gear, and highly seasonal. Giesen (1987:133-134) reports 112 fish species associated with the upriver lake system. He notes that 19 of these species were present in at least 20% of the 25 catches (from three different gear types) he examined in 1986. Fishing activity takes place along the entire length but approximately 70% of the catch comes from the upper reaches of the River and is associated with a series of lakes of varying sizes connected to the River and each other by a series of waterways. Giesen (1987:26-27) counted a total of 83 distinct lakes, 14 of which were over 600 ha in size. During peak flood season, however, boundaries often become meaningless as the area resembles an inland sea.

Peak fishing seasons are associated with rainfall patterns. The highest catch occurs at the start of the rainy season (October-November) when the lakes begin to flood. At this time, many species of fish migrate into the lake district. A second peak in catch occurs during the months of lowest rainfall (June-July), when fish migrate from the lakes. As they migrate, fish are concentrated into known channels. At this time, they are vulnerable to being caught by fishers intimately familiar with the behavior of local species.

The lake district appears to be a key to management of the Kapuas River fishery due to its role as spawning and nursery ground for numerous fish species that inhabit the river. Giesen (1987) reports that since the early 19th century, local restrictions on fishing activities have been enforced to protect the resource from overexploitation. Subsequent field work during 1989 and 1990 showed that fishers in this area continued to control their own fishing activities as a means of ensuring sustainable harvests from the river and lake system (Bailey et al. 1990; Pollnac and Malvestuto 1992). Approximately 65 communities of fishers are located in the upper Kapuas River and lake district. The fishers themselves are organized along residential units associated with a particular body of water. Each of these groups is led by a head fisher (*ketua nelayan*). Each community has effective control over a particular area. Fishers from each community have exclusive use rights to operate within a particular area in the lake district. Fishers from one community can ask to operate in the area of another community, but must first receive permission from the local head fisher. The head fisher

generally grants permission to use a specified type of fishing gear. Outsiders must adhere to any local restrictions that are in force regarding mesh size or gear type which may be used. Permission generally is granted, but the head fisher may refuse permission during the off season when his own people are having problems fishing.

Head fishers play an important role in fisheries management. In one community, the head fisher banned the use of a type of stationary fish trap (*jermal*) during low water because the gear was too effective and harvests could not be divided in an equitable manner among all fishers in the village. In another community, *jermal* were banned during low water because they represented a hazard to boat transportation. Local prohibitions also have been established against fishing under or destruction of floating aquatic grass. Local fishers have observed that this grass serves as a nursery area for important species and have acted to protect these areas. Head fishers also play a role in setting fisheries management policy outside of their own immediate area of responsibility. In one area of the lake region, head fishers from several villages agreed to ban all fishing gear except gill nets. Additionally, gill nets could only be used in one half of the lake. A universal ban has been established on the use of *tuba* (a locally available source of rotenone) or other poisons.

The existence of an effective local system for fisheries management provides local fishers with the organizational capacity to deal with problems caused by recent overexploitation of the red Asian arawana (*Sclerophages formosus*) stocks. Prior to 1979, the arawana had no special value. During the 1980s, however, and especially since 1984, demand and price have escalated, resulting in heavy fishing pressure on the arawana. In 1989 and 1990, fishers in this remote corner of Kalimantan were paid up to Rp 2.8-3.0 million (US\$ 1,700) for individual fish. Gold and yellow arawana also are locally present. Their value is only one-quarter that of the red arawana. At over US\$ 400 per fish, however, these fish also are extraordinarily valuable. The directed fishery is highly effective due to local knowledge of the species and its migratory habits. In particular, the seasonal movements of the arawana from river to lake and back again are well understood by local fishers.

The combination of local knowledge of fish behavior and high price has resulted in devastation of the local arawana stock. Giesen (1987:144) reported that between 1981 and 1986 exports of arawana from West Kalimantan declined from 30,000 to 7,000 fish.² In response to rapid decline in the arawana population, local fishers and the 65 head fishers in the lake district decided on a common plan of action designed to protect the breeding stock. Beginning in 1989, local fishers were not allowed to capture or hold arawana of a length greater than 25 cm (roughly 10 inches). Larger individuals were considered to be a part of the breeding population and were to be protected. Local fishers agreed to release any mature arawana caught in their nets and traps. As they were unable to differentiate between male and female, all mature arawana were covered. Smaller juvenile arawana could be taken without restriction. Any fisher found with a mature arawana was subject to a Rp 5 million (roughly US\$ 2,900) fine.

It is too early to tell whether the local management scheme to protect mature arawana will be successful. The agreement to ban sale of mature arawana is too recently established to report on the success of this approach. However, at least two potential problems can be identified. The first of these is the entry of new fishers drawn into the area by the hope of striking it rich through the arawana fishery. Newcomers may be

less inclined than established local fishers to abide by the local agreement to release mature arawana. Secondly, fish buyers may be inclined to buy and sell anything that offers opportunity for profit. These buyers are not bound by the prohibition against taking or selling large arawana which the fishers have imposed upon themselves. Thus, a ready avenue exists for an individual fisher to ignore local restrictions. The incentive for an individual fisher to secretly sell a prohibited specimen to a local or traveling buyer may be greater than the risk of being caught and fined. Nonetheless, an attempt is being made under local initiative to accomplish a management goal. Moreover, this attempt builds on well-established local organization and practice that appears to have a high degree of local legitimacy.

Maluku Province

Community-based management systems for both terrestrial and marine resources are common throughout the central and southeast Maluku Islands (Abrahamsz 1991; Khouow and Simatauw 1991; Marlessy 1991a, 1991b; Volker 1921; see also Zerner 1991a, 1991b, 1991c). Collectively, these systems are known as *sasi*, a word of Makassar Malay origins meaning to witness.³ In the Maluku Islands, to *sasi* means to place prohibitions on the harvest, capture, or theft of particular resources of economic or subsistence value to the community. To perform a *sasi* ritual and to place *sasi* into effect means that access to particular areas -- a garden, a group of farms, or a fishing ground -- is restricted until further notice. The act of placing an area under *sasi* is accompanied by the installation of prohibitory signs (*salele*). When a mango tree is *salele*, for example, a physical sign of the prohibition against taking any mangoes is attached to that tree (e.g., a ring of sago palm leaves is tied around the tree). To local inhabitants, this would be immediately readable as a prohibition against picking the mangoes. Many Malukan farmers and fishers believe that the 'closing' and 'opening' of *sasi* prohibitions is witnessed by invisible spirits. Violators are believed to be seen by these spirit-witnesses and punished through the infliction of illness or even death.

Sasi rules, institutions, and sanctions vary from locality to locality but generally are based upon customary law (*hukum adat*) and community territorial rights (*hak ulayat*). Historically, these local systems have promoted security of community rights over important natural resources. *Sasi* systems may also have promoted the equitable distribution of benefits from these resources among members of the community, but the historical picture is not yet clear.

Although *sasi* practices on land and shallow seas may share a common cultural substratum of religious beliefs concerning relationships between spirits, resources, and the human community, terrestrial (agricultural) *sasi* may also have developed in response to the historical presence of outsider clove traders who sought to secure stable supplies through contracts (Zerner 1991c). Coastal or inshore *sasi*, in contrast, may have initially regulated community access to schools of pelagic fish, and only recently become a means of regulating access to commercially valuable reef resources.

On many Moluccan islands, in coves and bays, local fishers have devised a variety of regulations which include restrictions on the timing of fishing seasons, the types of gear and techniques that may be used, which species may be taken, and where fishing is permitted to take place. Local fishers also have developed boundary concepts and devised physical markers to define and publicize the edges of community property

under particular or general restrictions. Most customary marine law regulations apply from the edge of the low tide mark on the shore to a region just beyond the outer edge of the shallow shelf surrounding many Moluccan islands. Generally, waters of more than 20 meters of depth are outside of *sasi* regulations. Most marine resources of local importance to the population occur in these relatively sunlit, shallow waters. From the standpoint of surveillance, waters more than a few miles from the coast would be hard to monitor and *sasi* restrictions would be hard to enforce.

Until recently, *sasi* restrictions in the sea were imposed primarily for reasons of hunting success and equity. Gear that only a few individuals can afford to purchase may be prohibited to insure that the gains of the hunt are distributed equitably. This includes seine nets and scuba gear which most cannot afford. *Sasi* often is declared to increase the likelihood of success in fishing for easily frightened schooling fish. If a school of fish is observed moving into a bay or inlet, *sasi* will be declared until the fish have settled down in the area. Only then is *sasi* lifted and fishing permitted so as not to alarm the fish during their migration.

The most basic means through which access to marine stocks is regulated is through seasonal opening and closing of *sasi* within specified, bounded community management areas. When *sasi* is open, local inhabitants may harvest a particular resource within the community management area, subject to regulations binding on all community members. When *sasi* is closed, no one in the community may harvest that resource. Persons or groups outside the immediate community must negotiate for rights to enter, travel through, harvest, hunt or trap within community territory. Although temporal and spatial restrictions are the basic control mechanisms applied under most *sasi* systems, control over market rights also are important and problematic (Abrahamsz 1991; Khouw and Simatauw 1991; Zerner 1991b).

Many Moluccan coastal communities have a well-defined sense of their particular marine territory. These territories are known as *petuanan* in the central Maluku Islands and as *bati* in the northern Maluku Islands. Boundaries frequently are associated with natural features in the coastal landscape, especially promontories or points. Thus, in Halmahera, Saparua and Hatta Islands of the Maluku group, the outermost lateral extent of a marine *petuanan* was recognized as the tip of two proximate points. On Halmahera, an imaginary line between these two promontories on opposite sides of a deep cove, about 15 kilometers deep and 40 kilometers wide, constituted the boundary of one well-administered *petuanan*. Several island communities claim use and control rights over submerged atolls and underwater reefs known in Indonesian as *negeri tengelam* (literally 'submerged countries') which may be several miles from the island on which the community is located.

Marine and terrestrial rituals, performed on a yearly basis, make the boundaries of a community's territory socially visible. As *sasi* ritual practitioners make a pilgrimage to sacred spots (*kramat*) on the tips of points or marine promontories, they are simultaneously articulating boundary lines. Sometimes these lines are linked to trees, promontories, submerged rocks or other natural topographic features that serve as guides to the seaward boundaries of the *petuanan*. Fishers from other islands in the area recognize and respect these claims as much as they obey the regulation of the inshore island-linked *petuanan*.

Responsibility for the performance of seasonal *sasi* rituals, for monitoring compliance, and for apprehension of violators rests with customary officials known as *kewan*.

Violators of *sasi* regulations are brought before village councils, and sanctions are issued. The system of sanctions formerly included public shaming (binding the violator with the physical sign of *sasi*). In recent years, such sanctions have become increasingly imposed in the form of monetary fines.

Prior to the 1950s or 1960s, marine *sasi* systems focused on resources used for subsistence purposes. These included schooling finfish as well as shellfish. During the 1960s, a commercial market developed for mother of pearl from the shell of a mollusk known as *trochus* (*Trochus niloticus*), which is used to make a variety of ornamental items including buttons and paint pigments. Until this time, *trochus* had been harvested as a minor subsistence food; the animal in the shell was eaten and the shells themselves were thrown away. In recent years, however, the *trochus* shell has become a valuable export commodity. The total volume of shell exports from Maluku Province tripled in one year, from less than 80,000 kg in 1987 to over 256,000 kg in 1988. From the shallow shelf and reefs of Kei Besar, a single island in southeast Maluku Province, a total of 7.5 tons of *trochus* shell, with an approximate value of US\$ 65,000 was harvested in 1989 (Abrahamsz 1991). By 1991, *trochus* shell was selling for Rp 16,750 (over US\$ 8.00) per kilogram.

Emergence of a new market in *trochus* resulted in new pressures on *sasi* community management systems throughout the Maluku Islands. Local governments and private exporters have begun competing with local communities and families for rights to control inshore fisheries resources. In some areas, local government officials have asserted government dominion over *sasi* rights, claiming that societal needs for 'development' override the rights of kin groups or communities which historically claimed local rights to resources. In some cases, outsiders have been hired by the local government to harvest the resource, meaning that local residents lost not only income but employment as well. A detailed case study of this process in Desa Nolloth is presented in Zerner (1991a).

In the southeastern Maluku Islands (Aru and Kei), Indonesian entrepreneurs have succeeded in acquiring rights to community-owned fishing grounds through the advancement of loans to individual families during the monsoon season. The *petuanan* itself, or rights to harvest it, was the security for these loans. Once indebted, many families transferred their rights to these entrepreneurs. In some communities, outsiders have acquired sole rights to harvest local marine resources, resulting in loss of local control over the community's resource base. Recent studies in Aru and Kei islands document significant losses in income by local residents as a result of this transferral (Abrahamsz 1991; Khouw and Simatauw 1991).

Equally disturbing has been the rapid depletion of *trochus* resources. In the inshore waters of many Moluccan islands, *trochus* and other reef-resident species are being overexploited and depleted (Abrahamsz 1991; Zerner 1991a, 1991b, 1991c). Until the 1960s, *sasi* prohibitions against harvest of *trochus* lasted from three to five years, a period sufficient to allow populations to mature and reproduce at least once. Depending on the area, local government officials, private sector agents, as well as local villagers are encouraging annual harvests from the reefs, with the result that the resources are overexploited. On Saparua Island, for example, annual harvests are yielding only 800 kg, where previous harvests on a three year cycle were 3,000-4,000 kg.

The causes of this overexploitation include pressures from local government officials for increased revenue, rapidly rising consumer aspirations of local villagers,

and the short-term profit orientation of private entrepreneurs. In some areas, local officials claim they have attempted to resist villagers' desires to shorten the interval between harvests. Whether the result of governmental or entrepreneurial encroachment, these external pressures are diverting economic benefits from villagers to other parties. These processes have disturbing implications for village economic development. Further loss of control removes the incentive local fishers have had to restrain their level of resource extraction, undermining a potentially effective and adaptive system of resource management.

Limitations and Problems

The argument has been made that local resource management systems can be effective, efficient and equitable in their distributional effects. Yet, as one observes marine fisheries resources in Indonesia, it is obvious that such systems are the exception rather than the rule. Local control over fisheries resources has been documented in parts of Sumatra, Kalimantan, Sulawesi, and the Maluku Islands. No such systems have been documented for Java or any of the Lesser Sunda Islands. Only a small minority of Indonesia's million-plus fishers have any say in the management of the resource base upon which they depend. This does not mean that such systems are inconsequential. Overexploitation of fisheries resources is a serious problem in many parts of Indonesia (Bailey et al. 1987). Self-regulation by those who exploit the resource may prove to be a crucial element in achieving sustainable fisheries harvests. Lessons learned from existing local management systems may prove valuable in achieving this goal. Among these lessons is recognition of the dynamic quality of these systems and the presence of pressures that tend to undermine such systems.

The centralizing tendency of Indonesia's government policies is a major factor tending to undermine the authority of local institutions responsible for resource management. Other factors tending to erode local abilities to manage fisheries resources include expanding human populations and the emergence of national and international markets for newly valuable marine resources. Indonesia's growing population has generated increased demand for fish while international markets for trochus, spiny lobster, sea cucumber and other marine species have increased the economic stake associated with control over local inshore fishing grounds. The resulting commercialization of marine fisheries not only has created new economic opportunities for local fishers, it often has led to loss of community control over local resources. While some local individuals have benefited from this transformation, these benefits frequently have been won at the expense of resource depletion and the erosion of resource allocation systems based on local standards of distributional equity.

In addition to demographic, economic, and political factors tending to limit the operation of local management systems, physical limitations also pose serious constraints to the spread of such systems. Christy (1982) notes that community management systems are most easily established and maintained where clear natural boundaries exist (e.g., an estuary, a reef) or where the resource is relatively immobile (e.g., shellfish). Our case study materials tend to support this view. Highly migratory species (e.g., tunas and other pelagics) generally are not manageable by a single

community. Clear, defensible boundaries may not be easily established where fishing takes place offshore of open coastlines. However, even on the high seas, marine property rights systems have been enforced (Pastoral 1987; Zerner 1989a, 1989b). Community-based fisheries resource management systems also may be difficult to establish or maintain in settings where social, political or ethnic divisions occur within the community. Operation of these systems depends on their acceptance by local fishers, who jointly enforce compliance. Where communities are internally divided (e.g., between rich and poor, political factions, etc.) or where demographic patterns are rapidly changing (e.g., through the migration of outsiders into an area), systems based on consensus will not be effective. Again, our case study materials tend to confirm the importance of internal community cohesion as a factor in establishing and maintaining effective management systems.

Local communities, like states, are polities increasingly driven by the same interests which motivate contemporary governmental and commercial elites. The emergence of regional and global markets for tropical fisheries resources, as well as consumer products, have created new sets of incentives that are affecting local actors' cultural and economic interests and institutions. Therefore, in advocating community rights to manage and allocate access to local resources, we must be careful not to romanticize the distributive consequences of local institutions or the environmental consequences of local cultural conceptions of the natural world. Community management institutions should not be considered to be timeless, unchanging cultural inventions. Rather, they should be understood as dynamic institutions that are social inventions, shaped by local experience and influenced by external forces. Further, we do not advance a simplistic image of local communities living in harmony with their environment or intrinsically equitable in their distributive arrangements. To the contrary, contemporary actors and institutions on the local village scene are increasingly driven by the same market incentives and economic imperatives that drive governmental officers and private sector entrepreneurs. Attempts to create or strengthen contemporary community management institutions must be based upon a realistic assessment of the motives, ethics, interests, and cultural conceptions which drive local actors.

Having noted the above limitations, we believe that local resource management systems should be a key component of Indonesia's fisheries management program. Fishers and their communities cannot be ignored if realistic resource management programs are to be implemented. If fishers do not have a recognized stake in resource management, they will have no incentive to protect the resource. Local property rights over fishing grounds and resources provide an important incentive for fishers to restrain their individual greed for the collective long-term good. In contrast, erosion of local resource management systems increases the probability that local actors will become local despilers of the coastal commons.

Social scientists are just beginning to explore the range of possible social designs which would encourage effective local-level resource management. There is an urgent need to increase our knowledge of community organization among fishers to better appreciate the potential role of local communities in resource management. Studies are needed to document the contents of customary law and local territorial rights, types of institutional structures, and problems of implementation and enforcement. Additionally, such studies need to document success or failure in resource management and

equitable distribution of resource flows. Case study analysis of existing systems will provide a basis for understanding the larger economic, political, and ideological contexts within which such systems operate. From these particular, historical narratives of changing institutions we may glean valuable principles of institutional and legal design. What we do know is that, in certain conditions, they represent low-cost and socially sound alternatives to centralized and sectorally segregated governmental control. Co-management designs, based upon formal and *de facto* recognition of community rights and delegation of some resource management authority to local institutions, suggests itself as an appropriate embarkation point.

Recommended Legal and Policy Initiatives in Indonesia

In Indonesia, legal issues are among the obstacles to the maintenance and development of effective community management institutions. Customary law (*hukum adat*) and community territorial rights (*hak ulayat*) are not mentioned in the Indonesian fisheries statutes dealing with fisheries management. Similarly, the law which authorizes the structure of village level government (statute No. 5 of 1979) does not recognize community level institutions and leadership roles other than formal government structures (Abrahamsz 1991; Marlessy 1991a, 1991b). Locally fashioned institutions and common law customs reflecting accepted standards of social and economic justice have been ignored in shaping national and regional resource management institutions and laws. In the absence of governmental support, coastal fishing communities lack the ability to manage their fishing grounds or defend their interests against powerful outsiders.

Government recognition and support of local resource management in coastal fisheries should be formalized through amendment of the National Fisheries Law No. 9/1985. In particular, explicit legal recognition needs to be given to the concepts of customary law (*hukum adat*) and local territorial rights (*hak ulayat*). Legal procedures for recognition of these rights need to be spelled out clearly. According to current law, all Indonesian citizens have the right to fish anywhere (though certain vessel size and gear restrictions apply). A revised national fisheries law would include recognition of local rights to manage and allocate access to particular resources and territories. This would provide the legal basis for communities of fishers to regulate exploitation of inland waters, reefs, coves, inlets and estuaries. Provision should be made for enabling communities of fishers to incorporate as rights-holding corporate bodies (*badan hukum*), encouraging the expansion of local fisheries management systems and local, autonomous economic entities.

In addition, the National Administrative Law No. 5/1979 needs to be revised to recognize the authority of local legislative institutions. As currently written, this law does not recognize any source of legal authority other than nationally appointed or elected officials. Recognition of community management institutions would constitute an important initial step in establishing the legal standing of local management systems. Once this is done, provincial and regency level regulations (*peraturan daerah*) should be issued which formally recognize the status of existing community ownership and/or use rights over coastal and marine resources.

Indonesian non-government organizations, including the Indonesian Environmental Forum (*Wahana Alam Lingkungan Hidup*), should be invited to participate in drafting proposals for legal reform and institutional innovation. These NGOs are ideally placed to work with coastal communities in encouraging community resource management (Korten 1986, 1990).

As the value of coastal resources rises, pressures on local institutions and leaders also increases. If equitable and effective community management is deemed a priority policy goal, then alternative marketing schemes and institutional arrangements must be designed to support community interests. Care must be taken in implementation of such legal changes so that local elites do not capture control over fisheries resources and exclude those who have enjoyed historic traditional use rights over local resources and territories. Local NGOs can play an important function in monitoring implementation and identifying problems.

Conclusion

The Indonesian government's ability to effectively manage the nation's far-flung and extraordinarily diverse fisheries resources is extremely limited. Under what amounts to open access conditions, many important fisheries resources in Indonesia are being overexploited. There is no reasonable prospect for this condition to improve in the short term without a wholesale rethinking of the government's approach to fisheries management. In this paper, we have argued that local resource management should be an important part of the resource management equation. Such systems offer the possibility of effective stewardship based on clear articulation of community rights and responsibilities, effective indigenous institutions, and intimate knowledge of local ecosystems. The record in Indonesia and elsewhere shows that such systems have the potential to combine effective resource management with distributional equity. Giving local fishers a fair share simultaneously gives them a stake in the long-term sustainability of the resource. Given the potential advantages of effectiveness, efficiency and distributive equity offered by local management institutions, the key question becomes whether the Indonesian government is willing to recognize the rights as well as the responsibilities of local communities in managing and sustainably developing local resources.

Notes

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2. These export figures must be regarded with some caution. The arawana is on the CITES list of endangered species and, as such, could not legally be exported prior to 1990. In that year, this species was 'down listed' to the CITES Appendix II category, allowing Indonesia an annual quota of 1,200 specimens for export (Watson 1990). Despite these restrictions, an active trade in arawana between West Kalimantan and Singapore is known to occur. There is direct air service between the provincial capital of Pontianak and Singapore and fish can easily be carried in oxygenated bags concealed in hand luggage.

3. In the Indonesian language, the word for witness is *saksi*. James Collins of the University of Hawaii notes that *sasi* means 'witness' among Makassar Malays of South Sulawesi (personal communication), a group long engaged in inter-island trade. The same word for 'witness' is used by the Minangkabau of Sumatra (Iskandar 1970).

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The 'Moral Economy' of Resistance

Turtle Excluder Devices and Gulf of Mexico Shrimp Fishermen

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ABSTRACT This article examines how shrimp fishermen in two communities on the Gulf of Mexico have responded to federal regulations requiring the use of Turtle Excluder Devices (TEDs) on shrimp trawlers. Coming at a time of contraction in the fishery due to low producer prices and high operating costs, TED regulations have engendered intense opposition in many areas. Resistance to TEDs stems from shrimpers' perception that the regulations are an unjust threat to their livelihoods. Such beliefs are not unlike those underlying other spontaneous resistance movements, such as agrarian uprisings of the poor and dispossessed. Recommendations for alternatives are made that would provide incentives for conservation while lessening the economic hardship of shrimpers and their families.

Responding to the decline of sea turtle populations in the Gulf of Mexico and south Atlantic, the National Marine Fisheries Service (NMFS) began a research program in 1978 to reduce the mortality of turtles caught in shrimp trawls. All sea turtles that occur in U.S. waters are listed as endangered under the Endangered Species Act of 1973. The Act prohibits capture of sea turtles within the United States, U.S. territorial waters, and on the high seas, except as authorized by the Secretary of Commerce or the Secretary of the Interior.

The method that NMFS selected to protect sea turtles was the Turtle Excluder Device (TED), a gear modification to be installed in the trawls of shrimp boats. A variety of TED designs have been introduced, but all have some common features. The TED consists of an angled metal grid or mesh that allows shrimp to pass into the catch bag of the net. Should a turtle or other large object enter the trawl, however, the TED is designed to eject it through a flap. According to NMFS, a prototype TED design tested in 1981 was 97% effective in releasing turtles from shrimp trawls with no loss of shrimp (Federal Register 1987:24244). Initially promoted as 'Trawling Efficiency Devices,' TEDs were also supposed to reduce operating costs by eliminating debris and unwanted bycatch from shrimp harvests. Despite these claims and subsequent refinements of the device, many shrimp fishermen have come to vehemently resist the use of TEDs.

This article evaluates fishermens' responses to TED regulations in the shrimp communities of Bayou La Batre, Alabama, and Biloxi, Mississippi.¹ From data collected in these communities in 1989 and 1990, it is apparent that many shrimpers' assessments of TEDs contrast sharply with the claims of the federal agencies mandating their use. Shrimpers' opposition to the device reflected their view that TED regulations

unjustly impair their livelihoods. As in other settings, such perceptions of inequity become a powerful political catalyst when 'moral rights' to subsistence are compromised by involuntary economic change (Scott 1976, 1985). This article documents the status of shrimpers' livelihoods in recent years and the effects of TEDs on shrimp catch as perceived by the fishermen who use them. In so doing, this article will demonstrate that shrimpers' attitudes do not result from an aversion to innovation, as is occasionally claimed by regulatory agencies. Rather, they emerge from perceived threats to fishermens' livelihoods and the coastal traditions they represent.

The TED Controversy

The controversy and legal background concerning TED use have been thoroughly examined elsewhere (cf. Durrenberger 1989, 1990; White 1990). In the popular media the TED issue is usually depicted as a choice between two exclusive options. These alternatives pit the societal goal of sea turtle conservation against the economic disruption that the shrimp industry predicts from turtle conservation plans. The prevalent view among many government regulators and sectors of the environmental movement is that resistance to TEDs by shrimp fishermen is unjustified. This perspective is based upon a number of assumptions challenged by Gulf of Mexico shrimpers. The most critical of these is that shrimp trawling constitutes the greatest source of marine turtle mortality, with estimates of sea turtle drownings in shrimp nets ranging up to 55,000 per year in U.S. waters (NAS 1990:3).² Policymakers say that they selected the TED as an optimal solution to the threatened extinction of several turtle species, one that would conserve endangered turtles with minimal economic losses for fishermen.

These claims founded on the skepticism, then outright hostility, of many shrimp fishermen to TEDs. Fishermen resisted the devices despite NMFS' claims to have reduced their weight and eliminated the catch losses of early designs. At a NMFS select committee hearing attended by one of the authors in 1991, federal officials even presented data indicating a 3.8% increase in shrimp catch (ostensibly from bycatch elimination) on vessels employed in experimental TED trials in the Gulf of Mexico. Some policymakers attribute fishermen's rejection of these inducements to their resistance to change, or less politely, ignorance. Elsewhere, White (1989) has demonstrated that modern shrimp fishing practices are the result of generations of gear innovation and experimentation. Nonetheless, many regulators and environmentalists continue to argue that shrimp fishermen resist any technology that differs from past practices.³

When shrimpers complain that TED use in practice does not replicate the low catch losses realized in government-sponsored TED trials, regulators commonly attribute such problems to fishermens' unfamiliarity with the devices. At the NMFS hearing mentioned above, the director of South Carolina's Fish and Wildlife Department answered shrimpers' concerns with the statement, 'If these guys can't get a TED to work, maybe the problem isn't a bad TED; maybe its that they're bad shrimpers.' More provocatively, resistance to TEDs is sometimes explained with the assertion that shrimpers are hostile to environmental concerns and have little desire to comply with conservation plans for any endangered species. To a large extent, this research was

undertaken to evaluate the claims and counter-claims about fishermen and their experiences with the new technology.

Given the highly charged attitudes concerning TED use among fishermen, the authors decided to meet with a local organization of shrimpers prior to undertaking research. The major research goals discussed with the fishermen were to evaluate the effects of TEDs on shrimpers' livelihoods, determine the present socioeconomic status of fishermen, and compare this status with data collected among the same informants three and five years prior to the present study.

The initial reaction to our request for cooperation in the research was one of considerable caution. The shrimpers felt that they had been misrepresented to the public by environmental organizations and government agencies. In one instance, a representative of an environmental group visited Bayou La Batre to gather information about shrimp fishing. After spending several days with a shrimping family, the visitor returned to his Washington office to declare that shrimpers were responsible for considerable turtle mortality. According to his former hosts in Bayou La Batre, this conclusion was derived from a single fishing trip in the Gulf that did not involve the capture of any turtles. While the incident would probably not affect the legal status of TED regulations, shrimpers were angered by their depiction as ignorant foes of conservation. The skepticism that greeted our research reflected this confrontational relationship with outsiders. We did not negotiate the goals of the research with shrimpers, but such meetings established some rapport with fishermen, who suggested questions that were relevant to their concerns. In examining these issues, we were schooled in the causes of their resistance to TEDs.

Socioeconomic Conditions in Shrimping Communities

Bayou La Batre, Alabama, and Biloxi, Mississippi, are two of the largest shrimping ports along the northern coast of the Gulf of Mexico. Each port is frequented by several hundred shrimp vessels that generate employment for local seafood processors and fleet maintenance industries. Yet Bayou La Batre and Biloxi also differ in the degree of their relative economic dependence on shrimping. Biloxi is a coastal city of over 40,000 permanent residents and at least as many seasonal visitors. In Biloxi, commercial fishing is distinctly secondary to tourism and revenues from a local air force base. In contrast, Bayou La Batre is a town of 8,000 residents, most of whom are directly or indirectly dependent upon the shrimp industry. Despite its small size, Bayou La Batre's heavy reliance on shrimp fishing makes it the seventh ranked U.S. port in the value of seafood landings (Graham, Brown and Rees 1988:5).

Table 1 provides demographic data on the sample of shrimp boat captains surveyed in Bayou La Batre and Biloxi. Substantial investments in both livelihood and capital provide shrimp captains little opportunity for occupational change. The average age of surveyed shrimp captains is approximately 46 years. With an average of nearly 23 years of shrimping experience each, most captains started fishing commercially in their teens or early twenties. The fact that shrimpers remain in their region of birth also indicates their commitment to a maritime occupation. A large majority (75%) of the fishermen surveyed in Bayou La Batre were born in the community or surrounding region and

most (80.4%) were raised in families involved in fishing for at least one previous generation. Typically, captains in both ports had completed less than a high school education. The knowledge that fishermen exhibit of the marine environment is considerable, but their age, limited formal education, specialized skills, and capital commitments to shrimping make it extremely difficult for them to change professions. This fact also makes it likely that they would vehemently resist perceived threats to livelihood.

Table 1. Demographic Profile of Shrimp Captains in Bayou La Batre and Biloxi (n=108)

	Mean	Median	Range
Age	45.7 yrs.	44.5 yrs.	24-84 yrs.
Household size	3.4	3	1-7
Formal education	10.8 yrs.	12 yrs.	0-16 yrs.
Amount of fishing experience	22.6 yrs.	20 yrs.	1-66 yrs.

Large numbers of bankruptcies in recent years attest to a worsening economic crisis in the Gulf of Mexico shrimp fishery. Incomes from shrimping have always been cyclical, reflecting year-to-year variations in catch, but long-term trends in fleet activity and incomes since the early 1980s suggest an irreversible contraction in the industry. Although no precise data exist on active fleet size, declining license applications indicate deepening attrition in the fishery. In 1991, 503 Alabama commercial licenses were applied for by owners of offshore shrimp boats, less than one half the 1987 level of 1,076 (see table 2). By 1992, 37.5% (27 out of 72) of the Bayou La Batre shrimpers previously surveyed in 1985 had left the fishing industry, most due to foreclosure. According to one key informant, the owner of a local vessel repair shop, only 38 offshore boats continued to operate from Bayou La Batre in early 1992. For Bayou La Batre offshore shrimpers, mean annual income fell steadily from \$23,750 in 1984 to \$22,187 in 1989. Controlling for inflation, 1989 incomes from shrimping represent 22% lower real earnings than five years earlier.

Table 2. Distribution of Shrimp Fishing Craft Licenses Issued by Alabama for 1988-1991

Year	< 30 ft.	> 30 ft.	total
1988	2,141	1,076	3,217
1989	1,784	613	2,397
1990	1,264	517	1,781
1991	985	503	1,488

Source: Alabama Department of Conservation and Natural Resources

The economic profile of Biloxi and Bayou La Batre shrimpers (table 3) indicates sources of income and expenditures in fishing activities. While 72% of Bayou La Batre fishermen are engaged solely in shrimp fishing, the remainder seasonally supplemented their incomes with other types of fishing, as well as employment in land-based sectors

such as ship-building and construction. In Bayou La Batre, approximately 69% of the sample's average household income came from shrimping, with off-season work and wives' contributions comprising the remainder. There is considerably more specialization in shrimping in Bayou La Batre than in Biloxi, where fin-fishing, oystering, and crab fishing are alternate seasonal activities for shrimp fishermen.

Table 3. *Economic Profile of Shrimp Captains in Bayou La Batre and Biloxi (n=108)*

	Mean	Median	Range
Shrimping income	\$19,717	\$19,500	\$0-65,000
Est. boat value	\$211,063	\$242,500	\$16,000-750,000
Est. sale value	\$125,953	\$148,500	\$0-400,000
Operating costs			
per trip	\$3,315	\$4,000	\$45-7,500
per year	\$60,217	\$75,000	\$3,200-144,000
Best years income*	\$39,559	\$38,000	\$2,000-100,000
Worst years income**	\$11,819	\$13,000	\$0-70,000

* Best year's mode

** Worst year's mode

Crisis in the Gulf Shrimp Fishery

Previous research (Durrenberger 1988, 1990; White 1989) has documented shrimpers' attitudes toward TEDs, but does not address the current status of the Gulf shrimp fishery, which in large part is responsible for the intensity of their resistance. The current economic crisis facing many shrimpers can be attributed to two trends originating in the past two decades. Escalating fuel prices since the early 1970s greatly increased production costs, particularly for the large offshore boats that had come to dominate the local fleet since the 1950s. A loan program of the Department of Commerce facilitated the purchase and upgrading of shrimp boats in the 1970s, much as agricultural policies encouraged land and equipment acquisition among farmers. Government loan programs permitted fleet expansion despite increasing fuel and other operating costs. Initially, climbing operating costs could be offset by increased retail prices for shrimp. By the mid 1980s, however, the price of Gulf of Mexico shrimp was no longer determined by the operating costs of the U.S. shrimp fleet, but by imports into the American market. From 31% of the fresh shrimp sold in the U.S. in 1980, imported shrimp made up 72% of U.S. sales by 1989 (Roberts 1990:9).

Most imported shrimp is produced under aquaculture in mainland China, Indonesia, Taiwan, and Ecuador (*ibid.*) Aquaculture shrimp is heavily subsidized by national governments, which have been encouraged by international lending agencies to promote shrimp as an export commodity. State agencies generally provide energy, inputs, and technical assistance to aquaculture operations at below market cost and shrimp farms take advantage of labor costs as low as .25 per hour (Bailey 1988:39). In addition to its extremely competitive prices, aquaculture shrimp are produced in large

standardized sizes that are convenient for American processors and restaurant suppliers. Standardization greatly reduces the amount of manual sorting required for repackaging and processing, permitting work force reductions and payroll savings. Several shrimp processors in Bayou La Batre that originally serviced the local fleet now deal exclusively with imported shrimp.

Largely due to shrimp importation, prices for shrimp caught by U.S. trawlers have fallen to lower absolute levels than a decade ago. In 1989 Gulf of Mexico shrimpers received on average \$1.29 per pound of shrimp, compared to \$1.37 per pound in 1980 (Anonymous 1990b:9). During the same period, operating costs continued to climb due to fuel and insurance price increases. Between 1985 and 1989, reported fuel and supply costs for Bayou La Batre offshore shrimp trawlers increased from an average of \$82,800 per year to \$92,905.

Because shrimping constitutes the largest share of the household income of Bayou La Batre fishermen, diminished earnings have reduced standards of living and forced fishermen to make severe economic adjustments. At present, slightly over 49% of the wives of shrimpers work outside the home to supplement their husbands' earnings. Wives' earnings now account for 31% of the total income of shrimping households. The worsening economic status of fishing households is indicated by the fact that most (67.6%) working wives entered the labor market within the last five years, and 32% began working outside the home in the last year alone. While a pattern of two wage earning heads of household is common among middle class Americans, it is not easily reconcilable with the demands of many fishing households (cf. Stiles 1972; Acheson 1989).

Traditionally, shrimpers' wives provided essential support roles for captains and crews. Wives usually managed the financial aspects of the shrimping operation and arranged for repairs when the fishing crew was at sea or in nonlocal ports. In order to keep their husbands' fishing boats in operation, women often traveled hundreds of miles on short notice to deliver spare parts and supplies to ports along the Gulf of Mexico. With their entry into the labor market, wives' ability to provide these support roles has been diminished. Changes in the household economy also exact psychological costs. As one Bayou La Batre informant noted of her shrimper husband:

He's worried about things at home that he shouldn't have to worry about. He should [only] have to worry about his time in the Gulf...He needs to know that his wife is taking care of everything else, and that when he goes in port for a repair, no matter where he goes, if it's Galveston or Key West, that she's gonna be there when he gets in, that she'll catch his line when he throws it to the dock. And if she can't do that it's gonna affect his work, and he's not gonna produce (Thomas 1990:52).

Cost-cutting measures may permit the survival of a fishing operation in the short-term, but they also contribute to long-term risk and loss of viability. Sixty percent of the fishermen surveyed in Bayou La Batre have changed crew composition or pay rates since 1987 to reduce expenses. Some 23.1% laid off crewmembers, reduced pay to half shares, or rely on unpaid family members. Crew reduction and use of inexperienced labor imply more intensive work effort and greater risk of injury. Approximately 35% of the offshore vessels operating from Bayou La Batre now do so with no insurance coverage, compared to less than 5% in 1985. Eliminating insurance coverage reduces operating costs by an average of \$13,000 per year, but it can also result in the loss of a boat due to personal liability in the event of a crewmember's accident. Similarly,

while second home mortgages may raise needed cash for boat repairs, in several instances in Bayou La Batre they have resulted in homelessness when a family's fishing operation was forced out of business.

In Bayou La Batre, 81.2% of all shrimpers report that they have made major austerity adjustments to the current economic crisis of the fishery. These responses range from deferring major purchases and educational expenses for children to taking out second home mortgages. Despite such sacrifices, many shrimpers continue to face the prospect of bankruptcy. This fact contributes to a measurable sense of despair among many fishermen.⁴ Among the 68 shrimpers interviewed in Bayou La Batre in 1990, two suicides were reported in the following year. In both cases, captains shot themselves after their boats were foreclosed.

Given such discouraging trends, the economically rational course of action would be to abandon the fishery altogether. Yet few shrimpers can do so without crushing losses or the prospect of prolonged unemployment. Substantial investments in shrimp boats severely limit the occupational mobility of boat owners. The declining economic status of the fishery, combined with the prospect of stricter federal regulation, have greatly reduced the market value of shrimp boats. The few shrimp boat transactions in Bayou La Batre take place almost exclusively with buyers from Central America or west Africa, who hope to take advantage of low vessel prices in the U.S. In Bayou La Batre, the average reported capital investment in shrimp boats is \$261,000, while their average market value is only \$163,000. Hence, sale without bankruptcy is a remote prospect for most fishermen wishing to leave the industry. Similar data exist for the Biloxi fleet, where the average capital investment in a shrimp boat (\$125,000) is more than double its present market value.

Shrimpers state that they can only respond to their imperiled economic status with intensified work effort and austerity at home. While informants' average number of fishing trips per year declined slightly in the late 1980s (from 24.9 in 1985 to 21.7 in 1989), their total time at sea increased from approximately 180 to 189 days. Fishermen state that they are taking longer trips to compensate for high operating costs and low producer prices. White (1989) reveals how the stress of work routines in the fishery has increased in recent years. Merely to remain in business under current conditions, fishermen report working an average of nearly 100 hours per week during fishing trips (*ibid.*:75). This represents a substantial increase over work effort just a decade ago (*ibid.*).

The decline of the fishery was evident by the late 1980s, when TED regulations were introduced. From the perspective of fishermen, the device poses a decisive threat to their livelihood because of its reduction in shrimp yields (cf. Mialjevich 1987). Fishermen contend that TEDs easily become clogged with debris and bycatch, causing shrimp to be deflected out of the turtle exit flap in the net. Bayou La Batre fishermen estimate their catch losses when using TEDs at 33.8% on average, although their perceptions of catch reduction vary widely (table 4). Nearly 42% of those interviewed (45 out of 108) reported shrimp losses of between 25% and 35%. Given the narrow profit margins of most fishermen in recent years, such severe losses may prove fatal to many shrimping operations. Direct shrimp losses do not fully indicate the lost cash value of fishing trips made while using TEDs. Fishermen report major losses from weakened and torn nets, hang-ups on underwater obstructions, and increased downtime due to the need to check and clean nets of debris more frequently.

Table 4. Percent Catch Loss Estimated by Bayou La Batre and Biloxi Shrimpers (n=108)

Percent Loss	Frequency	Percent of Shrimpers
10 - < 15	4	3.7
15 - < 20	4	3.7
20 - < 25	9	8.4
25 - < 30	16	14.8
30 - < 35	29	26.8
35 - < 40	6	5.6
40 - < 45	12	11.1
45 - < 50	4	3.7
55 - < 60	17	15.7
60 - < 65	4	3.7
65 - < 70	2	1.8
70 - < 75	1	.9

Note: These reports were not all gathered on the basis of systematic trawl trials. Only 78% of those shrimpers interviewed based their responses on personal experience with TED use, while the remainder relied either on the experiences or estimates of others. None of the 108 shrimpers interviewed reported catch losses as low as those recorded in NMFS TED trials.

Shrimpers' experiences stand in sharp contrast to TEDs data collected in NMFS testing programs. Federal regulators assert that actual shrimp losses when TEDs are used properly do not exceed 4% of total catch. Most shrimpers reject such claims, asserting that official TED trials were conducted under ideal circumstances of short trawls and clean ocean bottoms. At least one federal official has privately acknowledged the former criticism, indicating that trawling times were shortened under testing procedures to provide a statistically significant number of trials (Durrenburger 1990:78). Many regulatory officials assert that shrimpers' problems with TED use do not represent an intrinsic design flaw. Rather, they contend that catch losses result from inexperience and a failure to 'fine tune' the device in ways that would improve its performance. While shrimpers' and NMFS' records of catch loss are widely at variance, trawl tests sponsored by the Mexican government tend to more closely support the former: under 'ideal condition' tests using side-by-side TED-equipped and unmodified nets, Mexican trawlers recorded a 17% loss in shrimp catch (Vidal 1988).

Opposition to TED Regulations

Shrimpers' decidedly negative response to Turtle Excluder Devices was unanticipated by many federal officials. Beginning in 1980, the National Oceanic and Atmospheric Administration (NOAA) organized meetings between representatives of government, environmental groups, and the shrimp industry to solve the problem of turtle capture in shrimp nets. During these meetings, industry representatives agreed to implement a voluntary TED use program. By 1985, it was apparent that few shrimpers remained in the voluntary plan. After environmental groups sued the federal government to require shrimpers to use TEDs, the government announced a gradual phase-in of mandatory TED regulations in 1987. Until 1989, enforcement agents would only issue warnings to shrimpers who did not use TEDs in required areas.

Industry members who negotiated these measures were unable to secure the agreement of the shrimpers they ostensibly represented. Some shrimpers openly declared that they would surrender their boats and go to prison before submitting to TED regulations. Public hearings mandated under the proposed regulations were held in Washington D.C. and in sixteen sites throughout the Southeast. Government officials noted that they had never seen more people turn out to comment on any previous fisheries regulation (Conner 1987:14). At a public hearing in Thibodaux, Louisiana, 5,600 people filled the civic auditorium to capacity, forcing deployment of state police to maintain order. At meetings in Mississippi and Alabama, fishermen were turned away at the door for lack of space. From such meetings, and dissatisfaction with their appointed representatives, fishermen formed the Concerned Shrimpers of America in 1987 as a movement to overturn TED regulations.

Following the public hearing process and formation of CSA, shrimpers' organized opposition became so intense that the federal government repeatedly postponed its planned imposition of the regulations. Mail to congressional representatives from the southeastern states reportedly ran against the mandatory use of TEDs by a factor of ten-to-one (Connor 1987:14). Congressional delegations from these states introduced legislation that would delay TED regulations until the shrimp loss problem associated with the devices was reduced. Under pressure from constituents, state authorities in Louisiana instructed local fish and game officials not to cooperate with the federal government in TED enforcement. Federal authorities charged with TED enforcement also vacillated in the face of such pressure. Following the imposition of mandatory TED regulations in May, 1989, the U.S. Secretary of Commerce instructed enforcement agents to only issue warnings for TED violations until July.

During that summer shrimpers complained that seagrasses were clogging all approved TED designs in the Gulf, resulting in high shrimp losses. Despite shrimpers' warnings that frustration with the devices had reached a volatile level, the Secretary of Commerce ordered the Coast Guard to proceed with TED enforcement on July 22, 1989. This announcement provoked mass civil disobedience the following day, as shrimpers along the Gulf coast formed blockades at ship channels in Texas and Louisiana. At Aransas Pass, Texas, over 150 shrimp boats trapped Coast Guard cutters in a blockade, prompting them to request assistance from the National Guard. Despite the use of water cannon against shrimpers and attempts to cut their anchor chains, Coast Guard ships remained trapped for several hours. Similar confrontations were repeated in the ship channels at Galveston, Port Arthur, and Brownsville, Texas, and Cameron, Louisiana (Durrenberger 1990).

On July 24, the Secretary called for a regulatory change that would permit limited 90 minute tow times in lieu of pulling TEDs. Tow time limitations were based on the claim that turtle mortality in shrimp nets was negligible during short trawling periods. Shrimpers considered tow limits preferable to TEDs, but argued that time restrictions disrupted already stressed work and sleep routines. Environmentalists contended that tow limitations could not be enforced. The Secretary's decision was intended to prevent further outbreaks of civil disobedience, but it caused the National Wildlife Foundation and other environmental groups to file suit against him for failing to enforce the Endangered Species Act. With the Secretary's direction, TED enforcement by the Coast Guard finally went into effect on October 15, 1989.

In the end, organized resistance among shrimpers failed to stem the tide of TED regulations. Yet the fact that federal authorities were repeatedly forced to postpone enforcement indicates that collective resistance had some political effect. The coalescing of shrimp fishermen in a resistance movement was unprecedented in the Gulf of Mexico in recent times. Shrimpers themselves were surprised at the growth of their movement, for they often describe themselves as fiercely independent.⁵ Such perceptions notwithstanding, few fishermen could be considered individualistic by the nature of their work. Most shrimpers have informal fishing partnerships with other captains that in some cases are sustained over decades. Partners typically fish in close proximity with one another in order to exchange information about shrimp availability and provide emergency assistance if needed. Social networks link captains to crewmembers and to each other through fishermens' wives, who often depend on one another for support and childcare. While fishermen stress an ideal of autonomy and independence, then, in practice the risks of a fishing livelihood make them heavily interdependent.

Interestingly, the movement against TEDs encompassed both native white and Vietnamese fishermen. Until recently, many white fishermen viewed Vietnamese immigrants as competitors for limited shrimp stocks. In some communities, Indochinese arrivals were persecuted by racial hate groups during the 1970s. By the late 1980s, however, interethnic cooperation had grown noticeably in places like Biloxi (Campany 1990:28) and Bayou La Batre. In part greater acceptance of southeast Asians has developed from the multiethnic composition of the CSA and the broader movement against TEDs. Among white Bayou La Batre shrimpers, 47.4 percent stated that relations between American and Vietnamese fishermen had improved as a result of the TED issue. Some fishermen confessed that their opinions of Vietnamese were changed by their involvement in the Port Aransas blockade, which made them realize, in the words of one informant, 'that we're all in the same boat now.'

The Genesis of Resistance

Shrimpers and their foes alike were surprised by the tenacity of their opposition to TED regulations. The growth of collective resistance is in part due to the 'moral economy' foundation of their movement. As historians and anthropologists have noted in a variety of contexts (Thompson 1966; Wolf 1969; Scott 1976), the most compelling motive behind popular uprisings of the dispossessed have not usually been radical egalitarian or utopian beliefs; however much these are articulated by the leaders of such movements. Rather, it is an implicit belief in a moral 'right to subsistence' (Scott 1976:33) that has informed poor peoples' movements throughout history. From this 'moral economy' viewpoint, any claim by the powerful that diminishes the ability of the poor to meet their subsistence needs is considered unjust. Under colonialism, imposed changes in land tenure and taxation often violated peasants' perceived right to a livelihood and provoked vehement resistance. Such sentiments culminated in revolutions that transformed the contemporary world (Wolf 1969).

Resistance movements based on a 'moral economy' ethic have not been limited to rural peasantries nor to nonmarket economies in which 'subsistence' is measured solely according to biological and caloric minima. In industrialized societies, perceptions of

injustice arise when living standards decline and the chance of upward mobility is foreclosed for significant sectors of the population (Piven and Cloward 1979). Fishermen, too, have repeatedly organized collective defense against outside intrusion on traditional fishing practices (Taylor 1987; Durrenberger and Pálsson 1988). Where technological changes or alterations in resource access and management are seen to threaten the subsistence rights of community members, fishermen have joined together in formidable movements of self-defense (Byron 1980).

A comparable 'moral economy' dimension may be discerned in the resistance movement against TEDs. Faced with spiraling operating costs and declining prices for their products, many shrimp fishermen were already operating at a break-even point by the mid-1980s. Shrimpers initially sought individual solutions to their economic problems. Many responded to rising costs and declining prices by leaving the industry when possible; otherwise, they reduced operating costs, intensified work effort, and ultimately accepted reduced living standards.

With such strategies already in place at the time of TED regulations, most shrimpers had little additional ability to absorb the losses associated with TEDs. With the exhaustion of individual responses, the growth of collective opposition became the final recourse open to shrimpers. The few options available to shrimpers faced with a crisis of livelihood also account for the acts of desperation that have characterized the movement, such as spontaneous civil disobedience, vows to defy the law, and the public burning of TEDs. Under the circumstances, many shrimpers have felt that they have little left to lose. Fishermen and their families express a nearly palpable frustration at their inability to remain in business despite such sacrifices. The comments of the wife of one fishermen with 23 years of experience were typical in this respect:

It seems like its something that being forced on us because if it wasn't for the imports and those TEDs they could go out there and make a living...I mean its not like they've robbed the Gulf of shrimp. The shrimp are there, but they have to let half of them go in their nets and then when they bring what do get they don't get any price because [processors] can buy imported shrimp so cheap (Thomas 1990:31)

In other fisheries, resistance is often directed against regulatory policies perceived to be unfair (Gale 1991). Fishermen do not consider external management of resources to be unjust in itself, but policies that do not equitably share the burdens of management are often deeply resented (Schweri and Van Willigen 1984). Such perceptions of injustice underlie much of the opposition to TEDs, for shrimpers believe that they are being forced to assume exclusive responsibility for turtle conservation. Fishermen conclude that it is only their comparative political powerlessness that accounts for the government's imposition of TED regulations while it fails to regulate beachfront real estate development, offshore oil drilling, and ocean waste disposal. Given such perceptions of unfairness, it is not surprising that many shrimpers attribute a conspiratorial intent to TED regulations. Many shrimpers believe that the regulations are a convenient pretext for excluding them from coastal areas highly desired by more influential groups, such as developers, recreational fishermen, oil companies, and waste disposal firms. As evidence, they point to the close, if paradoxical, relationship existing between some environmental organizations and corporate donors, which include some of the largest polluters in the Gulf of Mexico (cf. Pell 1990).

Pollnac (1981) has noted that rules perceived as unfair can cause reactions that undermine resource management itself. Fishermen in Gloucester, Massachusetts, defied many of the provisions of the Groundfish Management Plan for New England fisheries, which supplanted earlier informal management practices developed by fishermen themselves (Miller and Pollnac 1978, Miller and Van Maanen 1979). Among the effects of opposition to outside management were surreptitious violations of regulations and falsification of landings records (Appolonio 1978).

Here, too, the literature on peasant resistance illuminates fishermens' behavior and attitudes on the TED issue. In many agrarian settings, collective rebellion may be a dramatic form of resistance, but it is also the most easily repressed. Having learned this fact from painful experience, the powerless usually resist authority with surreptitious actions of noncompliance. In the aggregate, individual acts of disguised insubordination often accomplish at least as much as collective resistance, without the risks of detection and repression. Foot dragging, dissembling, 'defensive ignorance,' and artful sabotage have 'nibbled to extinction' (Scott 1985:31) countless policies that the poor perceive as injurious to their interests. Such forms of 'everyday resistance' characterize peasant responses to all varieties of inequitable land tenure and political domination (cf. Colburn 1989). Far from being solely an agrarian or Third World phenomenon, surreptitious noncompliance may be the last resort of those who find themselves otherwise politically powerless. Among the acts of North American fishermen, blockades and civil disobedience are the most visible forms of resistance to TEDs, but they hardly exhaust all possibilities. Rather than ending fishermens' resistance to TEDs, the decision to enforce the regulations merely shifted opposition to less easily detected forms.

Violation of TED laws by shrimp trawlers is punishable by an \$8,000 fine on the first offense as well as seizure of nets and shrimp catch. Subsequent offenses are punished with uncompensated seizure of boats and equipment. Coast Guard enforcement is reportedly stringent in some areas, some shrimpers claiming that their boats have been boarded and inspected at gunpoint. Fishermen nonetheless continue to violate the law as they earlier vowed. Nearly ten percent of the offshore shrimpers in Bayou La Batre admit that they do not use TEDs while shrimp as legally required. Given the legal consequences of such behavior, actual rates of noncompliance are undoubtedly higher than self-reports would indicate.

Shrimpers often disrupt enforcement by warning other fishermen via radio of the location of Coast Guard inspection parties. Others nominally comply with the regulation but circumvent it in discrete ways. Due to the severe penalties for trawling without TEDs, 10.3% of the fishermen in Bayou La Batre resort to the less easily detected strategy of sewing shut the turtle exits on TEDs. These acts are not intended to trap turtles, but to prevent a complete loss of shrimp when TEDs begin to clog. While TEDs are visible in shrimp nets from some distance, the practice of sewing them shut can be detected only upon close inspection. Coast Guard teams have to board such vessels to determine that they are in violation of the law. Although this occasionally happens, more often compliance is monitored at a distance, where illegal modifications cannot be seen. Despite the penalties of TED violations, nearly 20 percent of those fishermen required to use TEDs admit to defying the law either openly or clandestinely.

A more disturbing possibility is that some will direct their frustration with TED regulations toward sea turtles themselves. Noncompliance and evasion usually result

from unpopular forms of material domination, e.g. taxation, rent, and forced deliveries of crops (Scott 1989:27). The powerless respond in more aggressive fashion to denial of status and humiliation by the powerful. Here is the 'hidden transcript of anger' by which the poor answer indignities suffered at the hands of elites (*ibid.*). From symbolic rebellion in ritual and folk tales to actual arson, destruction of machinery, and murder through poisoning or ambush, the powerless retaliate against those who would deny them self-respect. Beneath the public veneer of deference expected of the poor, then, there is often frustrated aggression that cannot be permanently contained. Such frustration is evident among fishermen who feel powerless before distant officials and an unsympathetic press, neither of which seem to acknowledge their concerns.

Despite their objections to TEDs, shrimpers argue that they were sympathetic to sea turtles in the past, stating that they, too, have a right to a healthy marine environment. Shrimpers contend that they formerly resuscitated unconscious sea turtles caught in their nets, while noting that the Endangered Species Act prevents them from doing so at present.⁶ Despite shrimpers' denials, the media occasionally suggest that shrimp fishermen intentionally kill sea turtles stranded in their nets (cf. Williams 1989). In one highly publicized case in Florida, a shrimp captain was led to jail in handcuffs after a former deckhand claimed that he was fired for refusing to slit the throats of captured turtles. It was subsequently learned that the deckhand had fabricated the accusation after being fired for drug use while working (Anonymous 1990a:2). Nonetheless, there occur sporadic reports of mutilated sea turtles washing up on beaches along the Atlantic coast. While the perpetrators of these acts have not been identified, it is possible that they represent a form of protest against TED regulations. However drastic, the killing of turtles does not surprise coastal residents familiar with the desperation of fishermen in the current economic and regulatory climate. If these actions are the 'weapons of the weak' that Scott discerns in the acts of the powerless, then the intent of TED regulations threatens to be quietly subverted by the tide of frustration and resentment they have engendered.

Conclusions

Shrimp fishing, particularly as represented in communities like Bayou La Batre, is not only the basis of livelihoods along the Gulf of Mexico, but comprises a distinctive American subculture. Since the late nineteenth century, when local commercial fisheries were established, Bayou La Batre has developed a unique set of economic activities and social relationships based upon the natural, technological, and social cycles of shrimp fishing. The distinctive character of the community derives in large part from this occupational specialization and the relationships of mutual dependence between captains, crews, families, and firms that develop from it (Thomas and Formicella 1987). While cities such as Biloxi generate considerable employment outside the shrimp fishery, in Bayou La Batre the economic well-being of at least 75% of all local employment sources are directly linked to the shrimp industry (*ibid.*). When that fishery is threatened with extinction, so is a coastal subculture. It is not coincidental that when asked in an open-ended question what they feared the most from TED regulations, approximately 70 percent of Bayou La Batre shrimpers volunteered 'losing our way of life.'

While the high catch losses associated with TED use do threaten this way of life, TED regulations are only the most visible symbol of the industry's troubles. Even if the regulations were rescinded, fishermen would still have to contend with producer prices that barely meet their operating costs. The 'moral economy' perspective suggests that the industry's economic and regulatory problems are intertwined. This view not only elucidates the sources of shrimpers' resistance, but also suggests a resolution of the apparently conflicting goals of conservation and livelihood. Given their perilous economic status, any easing of the crisis facing shrimpers would also diminish their resistance to TED regulations. Shrimpers readily acknowledge this when stating that they would comply with TED regulations if they were able to continue to make a living when using the devices. At public hearings, fishermen both challenge and plead with federal officials to show them how to obtain the three to four percent shrimp losses of official TED trials so that they may legally continue to make a living.

The survival of the domestic shrimp industry, at least as a legal entity, is doubtful as long as producer prices remain depressed by unregulated shrimp importation. The federal government has repeatedly enacted 'anti-dumping' legislation to protect the domestic computer industry, garment manufacturing, and farmers of certain crops. Yet it has not considered similar provisions against imported aquaculture shrimp, despite the fact that cultured shrimp is heavily subsidized by national governments and lending agencies. Policies that would prohibit shrimp imports from countries lacking TED laws and impose tariffs on imported shrimp sold below market value admittedly entail consumer costs. In distributing the costs of turtle conservation across all sectors of society, however, such initiatives would also greatly lessen the perceived unfairness of TED regulations.

With the development of a resistance movement shrimpers assert the claim that if turtle conservation is to be a societal goal, then it must be a societal cost as well. Fishermen consider it inherently unfair to impose such costs exclusively upon a small sector of the population that is already struggling to earn a living. In the absence of incentives for TED use, shrimpers' probable response to TED regulations will be continued open and covert defiance. Besides inevitably raising government enforcement costs, the silent evasion and sabotage practiced by thousands of shrimpers may undermine the goal of conservation policies. Alternately, policies that provide far greater incentives for TED use and development hold out the only genuine possibility of preserving both marine turtles and coastal communities that follow a way of life based on shrimp fishing.

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Notes

1. Research in Bayou La Batre was begun by J. Stephen Thomas in 1985. Thomas' research entailed 261 interviews with shrimp captains in 1985 and 1987, followed by our interviews with 68 shrimpers in 1990. Because 40 of Thomas' original informants were reinterviewed in 1990, the research affords documentation of the same individuals prior to and following the introduction of TED regulations. As part of a cross-sectional comparison, the research was extended to Biloxi in 1990, where an additional 40 shrimpers were interviewed. The original sampling procedure entailed dockside encounters with fishermen as they boarded or disembarked from their boats. This procedure was nonrandom but resulted in interviews with virtually all native fishermen based in Bayou La Batre. Due to the absence of trained interpreters, only two bilingual Vietnamese captains could be interviewed, out of an estimated 15 Vietnamese offshore fishing operations in the Bayou.

2. Shrimpers greet these claims with incredulity. Many Gulf of Mexico shrimpers contend that individually they have captured only a few turtles in many years of fishing. Fishermen claim that the turtle capture estimates presented in the National Academy of Sciences report represent faulty extrapolations. Areas of dense turtle populations (such as Cape Canaveral) provided the basis of turtle capture estimates for the south Atlantic and Gulf of Mexico, where shrimpers contend that they encounter few sea turtles. In direct observations of 540 trawls during the 1970s, White (1989:70) recorded six turtles captured in offshore waters of the Gulf of Mexico. Extrapolations from Cape Canaveral data, however, would predict the capture of 9,681 turtles during this number of trawls (*ibid.*). NMFS data presented in a 1991 committee hearing tend to corroborate these findings: on observer vessels operating between 1978 and 1990, turtle capture rates per 1,000 hours of trawling averaged 38.7 in the south Atlantic but only 2.8 in the Gulf of Mexico.

3. At public hearings in Louisiana and at subcommittee hearings in Washington, NMFS officials in 1990 and 1991 presented data indicating that TEDs have no statistically significant effect on shrimp catches. Failure to adopt recent TED designs was publicly attributed by one such official to 'a certain reluctance to innovate among many shrimpers.' Similarly, a prominent environmental magazine noted that shrimpers resisted TEDs despite the improvements made since the first designs were introduced in the early 1980s. The reason for such 'stubbornness,' according to the account, was that 'shrimp captains like to fish the way their daddies fished' (Wille 1987:2).

4. In contrast, our research indicates that shrimpers have engaged in extensive experimentation with TEDs on their own. Only 17.9% of the fishermen surveyed in Bayou La Batre reported that they did not try out or modify different TED designs before adopting one to comply with the law. At a cost of \$300 or more per TED (not to mention the costs of shrimp loss during unsuccessful trials and down-time during installation), such experimentation represents a substantial expenditure of time and money. Several Bayou La Batre shrimpers report spending up to \$3000 in conducting trials with different TED designs.

5. Informants were asked to evaluate their life satisfaction at the time of interview on a ten point scale known as Cantril's 'Ladder of Life.' This provides a widely-employed measure of optimism and psychological well-being (Miller 1983). In 1985, the average Ladder of Life ranking was 6.7, but among the same informants in 1990, the rank fell to 5.2. When asked to anticipate their life status in five years' time, informants in 1985 exhibited some optimism, predicting a slight improvement to 6.8. A similar question in 1990 elicited highly pessimistic assessments of the future, shrimpers on average predicting a decline in life status to a level of 4.1. 43.9% of the shrimpers interviewed in 1990 accounted for their present life status in terms of financial losses and declining incomes from fishing.

6. As Durrenberger (1991) notes, the absence of collective movements among Gulf of Mexico fishermen in recent years is a consequence of legal intervention in the shrimp fishery, rather than the psychological attributes of shrimpers. In the late 1940s, area fishermen joined the Gulf Coast Shrimpers and Oysterman's Association, which collectively negotiated seafood producer prices with processors (Durrenberger 1991:4). The union was dissolved under the Sherman Antitrust Act in 1955.

7. The National Marine Fisheries Service provided instruction on turtle revival techniques to shrimpers in the 1970s. White's observations suggest that such techniques were formerly used to resuscitate comatose turtles (White 1989:70). With the subsequent extension of the Endangered Species Act to marine turtles,

fishermen are in violation of federal law and subject to a \$20,000 fine if they retain an animal on deck long enough to revive it. Unconscious turtles must now be returned to the water immediately upon capture if fishermen are to avoid the fines enforced by the Coast Guard. Ironically, animals that would have once been saved are now condemned to a greatly reduced chance of survival.

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Father and Clown

On the Nomenclature of Norwegian Pleasure Craft

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ABSTRACT The Norwegian pleasure craft fleet has had a remarkable growth during the last decades. A popular but perhaps too malicious comment to this development is: too much money, lack of seamanship, and peculiar boat names. This paper discusses certain aspects of the naming of modern pleasure boats. The point of departure is the boat as a personal possession (it may even be regarded as a part of the owner's extended self), and the boat's name is seen as a key to a better understanding of the relationship between people and their material possessions. The analysis concentrates upon the expressive aspects of the names, of which emotions, humour and protest are important categories. Central to this discussion is the name as text, the name in a cultural context, and the social role of the name donor – which will often be the role of the loving family father, and sometimes that of the fool.

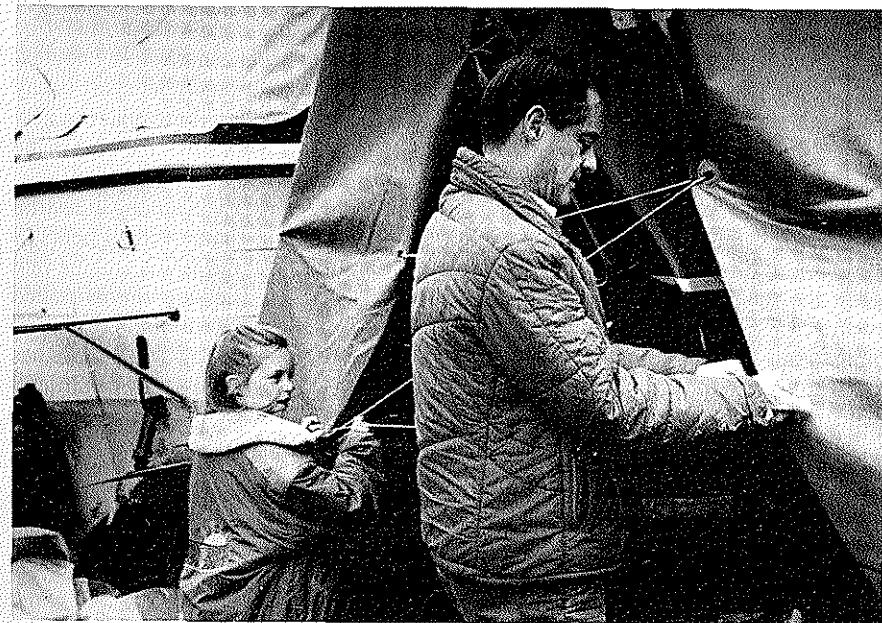
An Armada of Pleasure Craft

The consumer goods on which the consumer lavishes time, attention and income are charged with cultural meaning. Consumers use this meaning to entirely cultural purposes. They use the meaning of consumer goods to express cultural categories and principles, cultivate ideals, create and sustain lifestyles, construct notions of the self, and create (and survive) cultural change (McCracken 1988:xi).

The coastal line of Norway is rugged and irregular. With all its bays and fjords and myriads of small islands, this coast lends itself to a leisure activity like boating. The islands and peninsulas provide countless inlets and natural harbours, the winds seldom refuse you the opportunity of setting your sails, and the waters are fairly rich on fish. The swimming season is rather short, even on the southern coast, but the boating season normally extends from May until September or even October. Local residents along the coast who have fishing as a pastime activity may keep their small craft on water the year through, but for the owners of pleasure boats winter is a dead season when their cherished objects hibernate on dry land. Around Easter starts the often time-consuming and rather feverish activity of getting the boats ready for the new season – an activity that normally provides occupation for the whole family in all spare hours during a couple of weeks – and in May or early June they are afloat again.

The Norwegian armada of pleasure craft comprises a rich variety of boat types. Amateurs of a steadily diminishing fleet of wooden boats talk disparagingly about the owners of the growing polyester or 'tupper ware' fleet. Devotees of sail nod condescendingly to those who travel by means of gazoline or diesel oil, and supporters of inboard motors turn their backs to noisy outboard'ers. Proud owners of painstakingly

restored veteran vessels, who skilfully exploit even a feeble breeze for their maneuvering, look with disgust at clumsy and spectacular maneuvers from wealthy but inexperienced 'captains' of sumptuous, three-storey flybridge monsters (presumably



A family event. Easter time and the unveiling of the boat after hibernation on land (Photo Arthur Sand).

acquired with money too quickly earned or too easily borrowed). And finally, adherents of classic and solemn boat names give an incredulous stare at flippy or even vulgar names in the stern of some of the newcomers. Or as a reporter recently put it in a newspaper heading : 'Is everything permitted for a boat's name these days?'¹

For the owner of a wooden yacht, a sailboat or a veteran craft, the boat may become an all-embracing hobby. But even a modern polyester cruiser requires much attention from its owner, and the owner's pride in his² treasured boat may be much stronger than the pride in his car. 'When you look around in this place, you'll see that the boats, they are people's babies,' an old watchman commented when I was observing the renovation work on Easter Sunday in a marina just outside Oslo. One should be careful with joking about a person's boat or his seamanship, even if he signals a certain self-irony (for instance through the name), because the boat may function as a part of his extended self. What may be true for a man and his car is all the more true for a man and his boat. And not less important for understanding his concern about his possession: the boat may have cost him much money, often more than his car – the cost of which is far from negligible in Norway. The boat itself may represent a solid investment, and there will be all the fees for anchorage or harbour place in summer and for laying-up during winter, the hoisting and launching every season, membership in yachting or sailing

clubs, radio licences, public taxes, motor services etc. Not to mention all the new and tempting technical equipment that is constantly advertised – from advanced communication and satellite navigation systems, auto pilots, radars and echo sounders, to galley equipment, gas stoves and refrigerators.

For buyers of second-hand boats, and for coastal inhabitants who still stick to their older, traditional types of wooden boats, the investment and costs will normally be reasonable. But for some people, boating has turned out to be a leisure activity beyond their means. The sum of unavoidable expenses – luxurious equipment let apart – may be quite daunting for an average wage earner and family provider, if the boat is a new and costly one and obtained by means of a bank loan, as was very often the case in the unbridled eighties. Some boat names reflect this problem.

Yachting is a century-old pastime for well-to-do Norwegians. Even among industrial workers, the keeping of a simple wooden boat – for fishing in spare evening hours or sailing or motoring on Sundays – has been quite common. But the 1970s and the first half of the 1980s saw a boom in the pleasure boat market. The sale curves soared upwards for comfortable family touring boats and expensive cruisers, yachts and sailing boats. The reasons were manifold. It is a well established fact that Nature has always held a core position in the Norwegian mentality, to a degree that may be difficult to understand for continental Europeans. In our century, the coast has attracted a great part of the population, as a way of getting out in nature. But during the 1960s and 1970s, cabins and summer houses along the coast became extremely expensive and difficult to get hold of, and in most places legislation in the late 1960s had put a stop to the construction of holiday houses within a belt of two hundred meters from the sea. With an expansive national economy, a high rate of inflation and easy access to bank loans, together with a rising standard of living and more spare time, many people chose a boat as an alternative to the unattainable dream of a place of one's own by the seaside; a boat big and comfortable enough to roam the coastal waters and for the whole family to live in during weekends and holidays.

Obviously, the boat was not a summer house substitute for all new boat buyers; there have always been many Norwegians who prefer the freedom of a boat to the more sedentary life in holiday houses. But for all the reasons mentioned above, boating became more popular than ever from the latter half of the 1970s and through the first half of the 1980s. During these years, the boat traffic in the Oslo fjord and along the southern coast was jammed in summer weekends and during the holiday month of July, and near the towns there were long waiting-lists to obtain places for harbouring and laying-up – unless you were willing to pay your way in the 'grey market.' The end of the 1980s saw, however, a decrease in traffic and in other problems related to the boating boom, partly due to economic stagnation, unemployment and restrictions in the financial market. But an obvious reason is also that many novices in seamanship came to realize that life at sea was more demanding and less comfortable than they had imagined beforehand.

All this to say that boating has been, and still is, a very popular sport in Norway, and that boats are regarded as valuable and often cherished objects of possession. But the rapid growth of boating activities and the notable increase in economic investment in pleasure boats have drawn my attention to a very spectacular feature, viz. the naming of the boats. The preceding introduction will serve as a necessary context for the following discussion of motives for the naming of boats.

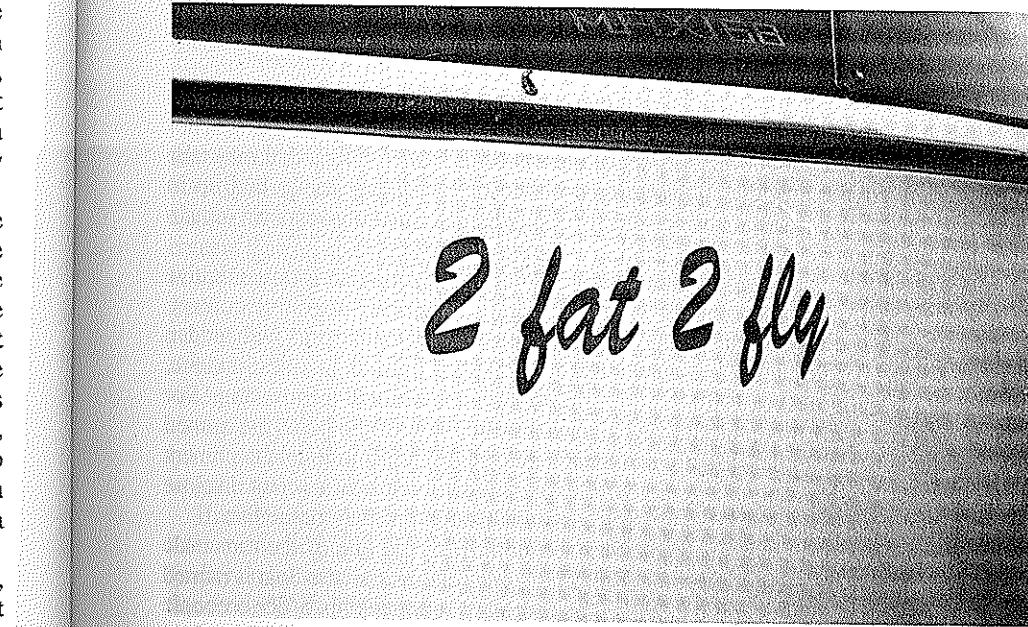
The Nomenclature – A Brief Account of an Investigation

In 1991 I made an investigation of contemporary and traditional pleasure boat names, based on registers from yachting clubs, maritime radio communication lists, etc.³ Some of the main findings can briefly be summed up as follows (Rogan 1992a):

Around the turn of the century, when leisure was a privilege for a social elite and pleasure yachting was still in its infancy, the sailing boats bore names that did not differ very much from the names of the ordinary working boats along the coast. Moreover, most of these 'yachts' were cutters and half-deckers of the same type as the small traditional working boats.

Around 1890, about half of the pleasure boats bore genuine proper names (male, female, mythological and literary), and the other half appellatives or compounds (noun groups, imperatives, etc.). Female proper nouns were the largest single group, with 23% of all the names. Male proper names were also quite common, with 13%, and mythological names with 11%. Literary names lagged behind, with 3%. Almost without exception, all the proper names were Norwegian names.

The appellatives can be systematized in several small groups, to be skipped here. Descriptive nouns or nouns expressing desired qualities formed one big group of nearly



2 fat 2 fly. A humorous name for a sailing boat, but what is the meaning? The Maxi is a heavy and solid family sailing boat, not a quick and streamlined ragatta boat – so 'Too fat to fly' gives some sense. Or perhaps the owner is a retired pilot? Only the owner can tell. But such a name certainly gives rise to a chat with other boaters when anchored in the evening (Photo Arthur Sand).

40%. Among these, the great majority were Norwegian words or expressions, and only a very few in foreign languages (mainly English and French).

When we turn to our own decade, the 1980s, we must distinguish between sailing boats and motor boats, the percentages in brackets referring to motor boats. The number of proper nouns falls considerably, from 50% to 25% (21%). Female proper nouns hold their position for the sailing boats, with 22%, but not for the motor boats (13%). There is an important decrease in male proper nouns, from 13% to 1% (2,5%). A pleasure boat is clearly perceived as a female being, in contrast to the fishing- and working-boat tradition. (For an interesting discussion of femininity and female aspects of boat nomenclature, see Rodgers 1984 and Verrips 1990.) Pet names appear as a new category, mainly for motor boats (4,5%). Mythological names are reduced considerably, from 11% to 2% (1%), whereas literary names, including names from comic strips and television series, hold their feeble position with 3% (2,5%).

Another notable tendency is the rise of foreign names, mainly English ones. Their relative proportion – proper names and appellative expressions seen together – increases from 5% to nearly 30%. One of the most spectacular developments, then, is the internationalization of boat names during the 20th century. This tendency, being a well-known general feature of Norwegian after-war popular culture, hardly calls for lengthy explanations.

As will be seen from the above, there have been certain changes in naming practices in our century. Continuity is a less spectacular phenomenon, but for the sake of balance it should be mentioned that several features show little or no change; people still have a predilection for seabird names, and they still avoid botanical names, etc.

However interesting the above findings may be from a certain point of view, they do not in themselves offer any explanation of motives behind the act of naming boats, nor do they tell us anything about the transfer of ideas, norms and emotions that may take place between people and their possessions. Name research may easily end up in taxonomies based on semantic and lexical criteria, whereas functional aspects remain in the shadow.

Name lists of the types used above, however suitable they may be for quantitative analyses, have serious shortcomings when it comes to exploring cognitive content. Several names, especially among the modern ones, are difficult to interpret, with hidden meanings that only interviews and questionnaires can shed light on. A questionnaire, distributed to boat owners in 1990-91, brought important additional information.⁴ For example, a scrutiny of this material revealed that up to 30% of the boats are named after family members, either directly or through acronyms etc. Emotional attachment is one of several interesting categories, and explanations from boat owners disclose motives behind names that will never be accessible through ordinary name lists.

A couple of examples will justify this contention. *Albert* is one of the rare male proper names in my contemporary material. The owner claims that the boat is named after the former lord mayor of Oslo, who was forced to renounce his office a couple of years ago, partly due to the economical impasse he and his cronies had led the town of Oslo into. And the alledged reason for the naming is the following: 'The state of the boat is just as bad as the economy of the town of Oslo.' Boat names like *Nora* and *Irma* are not simply female proper names. They are also acronyms for members of the

owners' families. The names *Grunnen [Aground]*⁵ and *Søkken [The Sinker]* are explained with reference to their owners' previous experiences. Hidden meaning, humour and emotions lurk behind many names, and the examples illustrate the communicative intention. For quite a few boaters, part of the pleasure of boating life is getting into contact with co-boaters, and communication often starts with small talk about the boats – and their names.

The Boat as Possession, Communication and Ritual. Some Analytical Concepts

... there are few people in contemporary consumer societies who are not the possessors of at least some goods which are seen as extraordinary, mysterious, and emotion-evoking. These goods are not mere commodities. They are invested with special meanings that remove them and set them apart from the everyday items thought to typify marketplace exchanges (Beik 1991:35).

To analyze the symbolic functions of names and naming, a set of technical terms is needed. For some time I have been looking for an analytical approach to this problem (Rogan 1990, 1991). In a recent article (Rogan 1992b) I have proposed a set of three concepts to capture central aspects of the naming of inanimate possessions (boats, houses, cars etc.). Three different aspects are clearly present in any artefact's name, each engaging the owners in a different direction. Firstly, names may be seen as an expression of people's relationship to their material possessions (the singularizing aspect), and secondly to their social surroundings (the expressive or communicative aspect). Thirdly, names and naming may also be understood as a way of relating to forces outside one's control, whether customary practice or metaphysical forces (the ritual aspect).

The first aspect stresses the superiority of the possession compared to other objects of the same class, in its owner's experience. A proper name for your boat marks it out as distinguished and singular – hence the term *singularisation* by naming. When you choose a name for it, you give it a qualitative and evaluative description, with a much richer semantic content than an apersonal and quantitative number for identification purposes. The owner of the boat *Min [Mine]* explains the name in this way: 'He was mine among the boats of many other people.' Names like *Egen [My own]*, *Båten* or *Baaden [The Boat]*, *Båten Vår [Our Boat]*, *She's mine* etc. tell the same story. Other names: *Vito [The Two Of Us]*, *Feeling*, *Empathy*, *Second Dream*, *Second Love*, *Second Union*, *Second Wife*, *Brura [The Bride]*, *Amor*, *Cher Ami*, *Godnok [Good Enough]*, *Godvenn [Best Friend]*, *Kammeraten [The Comrade]*, *Kompis [Chum]*, *Guttedrømmen [A Boy's Dream]*, *Catharsis*, *Endelig [Finally]*, *Freedom*, *Free Life*, *Happy Days* and many, many more. In these examples, the singularity of the object is broadcasted to the whole world.

But it is important to note that any named object – compared to unnamed ones or objects that are marked only by a quantitative identification – carries this additional element of quality and distinction. And if you give an object a name that recalls good memories, or that reminds you of persons dear to you, you transfer these feelings to the object.

In one way or other, more than half of the boat owners related the names of their boats to their own lives and experiences (memories of childhood, of travels abroad, etc.). The most important single group is names after family members, with as much as 30%. Among these, 12% are proper names (male or female), and the other 18% are

acronyms, anagrams or free constructions based on the names of children, parents or the whole family. A long series of 'impossible' names like *Stetamulik*, *Pjallah*, *Bipho*, etc. combine the initial one or two letters of the names of family members. Also, 'classical' names like *Paros*, *Astrea*, *Empire*, *Bess*, etc. are explained as acronyms for family members. But what if the family expands? In one case, the owner gave the dinghy the name of his newborn son! Another family named the dinghy after their cherished dog. In both cases, the 'family' were together again, on sea as well as on dry land. When we consider all the proper (human) names, male and female, for our respondents' boats, we find that nearly two thirds of all boats with such names (*Ann*, *Anita*, *Cecilie*, *Eva*, *Maria*, etc.) are named after a family member, mostly a wife or a daughter. This is a traditional way of naming boats. What seems to be new, however, compared to our material from the turn of the century, is the use of acronyms and other constructions.

To conclude about the singularity aspect: A favourite possession is marked out as distinguished and singular through a name with which positive sentiments are associated. The dearest among possessions is often given an emotionally tinged name. By materializing your good memories in an object, it becomes an extended part of your self. Not every sort of object is worthy of such an honour, but boats and houses may be.

Secondly, the relationship between the owner and his social surroundings may be studied through the *expressive* aspect of names. Names are communication, and a boat's name is a person's visiting card at sea. A name is a way of telling the world our preferences, sentiments and opinions. For humorous names, the communicative intention is self-evident. You don't tell jokes to yourself! You hardly give your boat names like *Mors Skrekk* [Mother's Fright] or *Fars Vilje* [Father's Will], *Sexpress* or *Call Girl*, *Ad Undas II* [Go To Pot II], *Svigermors trøst* [Mother-in-law's Consolation], *Holder Kanskje* [Will Perhaps Keep Afloat], *Sea-U-Later*, *Caramba* [Sp. for Damn it all], etc., if you shun contact with your fellow boaters. There is a long series of such names, ranging from the funny to the rather vulgar. A select object for funny names are the dinghys. Names like *Baksmellen* [Smack behind], *Rævedilten* [Arse Toddler], *Den Fordømte Jolla* [The Damn Dinghy], etc. tell how difficult it is to maneuver with a jolly boat in tow. Also, owners frequently make puns that combine the names of the boat and the dinghy, like *White Horse* and *Folungen* [The Colt], *Fant* and *Fantungen* [The Tramp and The Tramp's Kid], *Belåna* and *Kontant* [Mortgaged and Paid Cash], *Rus* and *Bakrus* [Drunkenness and Hangover], etc.

The expressive aspect is not restricted to humour. Another important group contains names communicating emotions, like the family names. Naming the boat after family members is a loud and spectacular message that you love them. And a name that ties together the names of all the children or the whole family, is a strong symbol of family unity. So is also boat names like *Familien* [The Family], *Family Four* and *Family Five*.

The third aspect, called the *ritual* aspect, involves ritual behaviour on several levels, from simply complying with the social custom of naming boats, houses, etc., via the formal and spectacular act of baptizing boats and even houses and guns, to the belief that the name is a way of securing protection or good luck. The term ritual is to be taken in its broad acceptation, comprising both everyday praxis that has no immediate practical purposes, and religious ceremonies and superstition.

Very many boat names have a normative element: a wish or hope for a safe voyage, for benevolent winds, etc. The name may thus be seen as a sort of insurance that may

be qualified as ritual behaviour. The family names discussed above have a ritual aspect in this particular sense. If you name your boat after the members of your family, you probably express a strong wish that the boat will be a means to keep them together and to realize a dream of a happy family life – at least during holidays.

The act of baptizing boats, and all the conventions associated with this 'rite de passage,' reveals better than anything else the ritual aspects of naming. Even if baptizing and naming traditions tend to weaken among modern pleasure boat owners, one can still observe strong opinions and rules that are not lightheartedly transgressed. A person who is satisfied with his first boat often sticks to the same name for his successive boats, by adding II, III, etc. Within families, such names may go on for generations. Among people who buy secondhand boats, there is a reluctance to change the name – quite often overtly expressed, and sometimes even explained with reference to possible ensuing accidents. My questionnaire material indicates that up to 30% of secondhand boat buyers keep the old name. It even happens that new owners keep names that are acronyms for the former owner's family. But the reverse is also true; a few owners refuse to let the name follow the boat when they sell her. They may sell the boat, but not the good memories: 'My children coined the name. And I couldn't let that name go with the boat. I made the new owner promise that he find another name for her,' one interviewee told me.

Among other traditions still extant, is the reluctance to use botanical names and names of land birds. Several of the respondents mention that a boat should have a seven-letter-name including three A's. The number 7 has been a sacred number from time immemorial, and this tradition probably explains for instance an amazing name like *Caramba* – observed on several Norwegian pleasure boats.

Sailing the seas has always been an insecure project, and traditions survive, whether they be named conventions or rituals. I have not systematically collected material on these topics. There is possibly a more 'modern attitude' among owners of polyester boats than among those who own traditional wooden boats, in addition to regional differences, but these questions remain to be studied.

These three aspects, or symbolic functions – the singularizing, the expressive and the ritual – are not mutually exclusive cultural categories. They are aspects that will be present in any name, and they will overlap. Any boat name implies much more than simply identification of the craft. The identificatory function is hardly present at all when it comes to naming inanimate things. None of the three above functions could possibly be satisfied by a number.

Possessions may transcend ordinary utilitarian status and thereby become 'special' for their owners, states Russel Belk. And he goes on: 'Special possessions have intense symbolic meanings that defy rational explanations and sober reasoning. These meanings may be inexplicable for the owners, but their behaviour involving such possessions makes clear that these are non-ordinary things' (1991:19). Pleasure boats clearly have a number of utilitarian aspects, as have cars and houses and other possessions. But they also carry all these symbolic meanings to their owners. The naming of the boats is a spectacular part of people's 'behaviour involving these possessions.' The names may serve as cues to the symbolic meanings they have invested in the boats, meanings that are perhaps sometimes hidden even to the owners themselves.

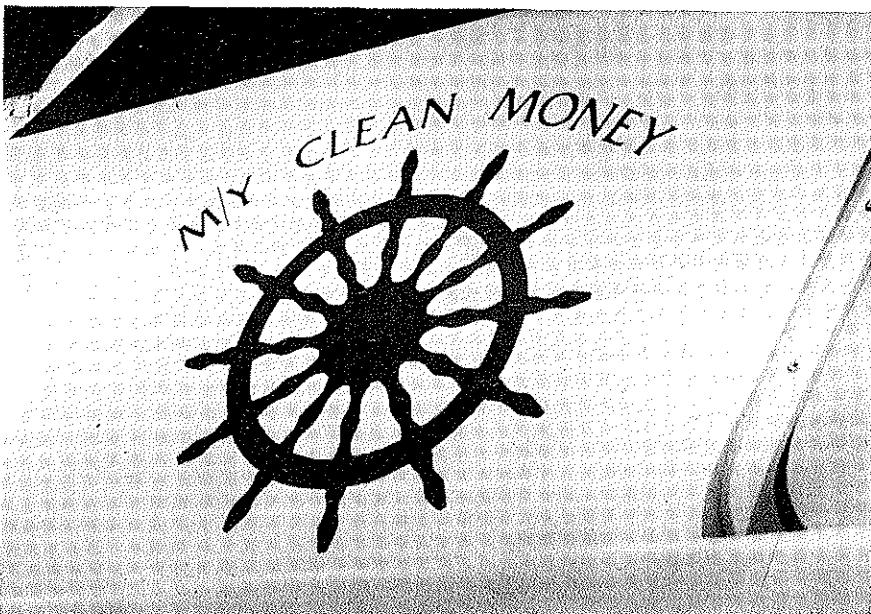
Definition of a Problem

The preceding paragraphs contain a description of the boating boom of the 1970s and 80s, as a general background, a brief survey of the findings of an investigation of ancient and modern leisure boat names, and a discussion of the main aspects or symbolic functions of naming.

Among the modern name types encountered in the 1980s, the most numerous single group is that of 'family names,' involving approximately one third of all the names. The proposed explanation was that the owners transfer their feelings for their family to the boat, thus telling everyone how much they love their closest relatives, and at the same time expressing a wish – perhaps unconscious – that the boat will be the focus of the family's happiness. Consequently, the boat may be considered an important tool for the family father, as well as an extension of his self.

The investigation also revealed another spectacular group of modern names, the humorous ones. These names must be understood against the general background of the boating boom and the much broader social recruitment during these years. One of the respondents put it this way: 'I am not much of a sailor, and I would find it ridiculous to have a boat with a solemn name. At least as long as my boat does not exceed 20 feet in length'

Such attitudes will explain all the humorous names of the prudent and innocent type. But how about the other type of humorous names, on the borderline to vulgarity and



M/Y Clean Money. The name is perhaps a reaction against names like Black Money, Profit, Credit, etc. Anyway, this motoryacht (M/Y) has been paid with (my) honestly earned money, the owner wants the world to know (Photo Bjarne Rogan).

indecency? Actually, one of the most striking features of our corpus of modern boat names is the contrast between the solemn and responsible on the one hand, and the jocular and even vulgar on the other. In short: the loving family father versus the clown.

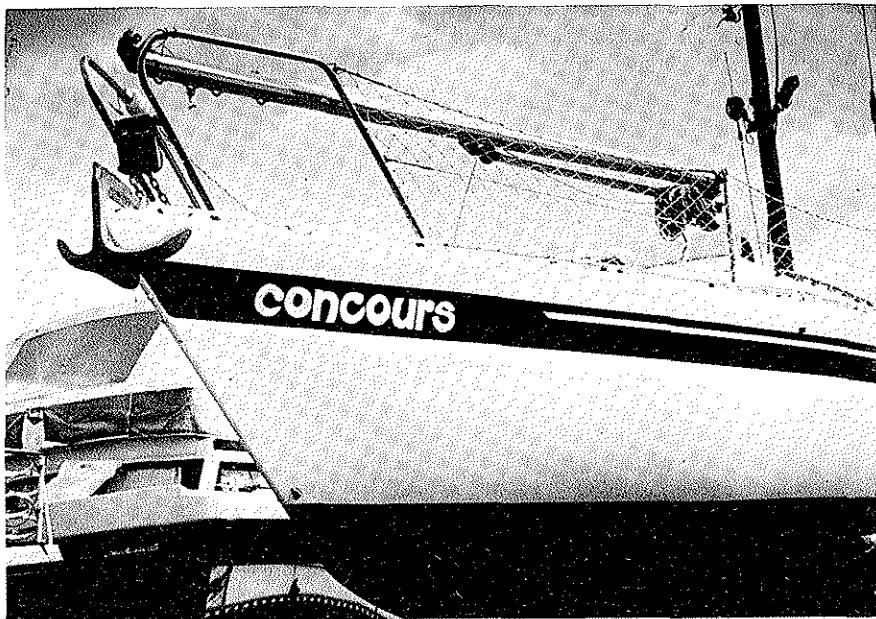
We shall approach this problem through a discussion of humour, its principles and functions. Of our three aspects, only the expressive will be pursued further in this paper.

Humour I: Reading the Text

Nothing is funny to everyone and anything seems potentially funny to someone (La Fave, Haddad and Maesen, cited after Fine 1983).

Nothing compels the owner of a pleasure craft to give her a name (conventions or other ritual aspects kept apart). A matriculation number satisfies the authorities. Actually, between 10 and 25% of the members of yachting clubs today do not have names for their boats, according to lists and questionnaires. A name is required only if you want a VHF radio licence. But even then, absolutely nothing compels you to make the name visible on the boat. From the point of view of expressivity, painting a name on the stern or on the bow means communicating with other people.

And communication seems to work very well through names. In the questionnaire survey, the respondents were asked to report 'special' boat names (defined as 'amu-



Concours, one among many humorous names with double meaning. 'Concours' is the French word for competition, but the primary reference is clearly the Norwegian word for bankrupt (Konkurs), meaning that this expensive boat has become a heavy economic burden for the owner. This is a rather common boat name in Norway, with several spelling variants (Konkurs, Kongkurs, etc.) (Photo Bjarne Rogan).

sing', 'good' or 'bad') that they had come across. Almost the totality of the reported⁶ names may be defined as humorous, whether they were approved of or deemed unseemingly or in bad taste. The VHF radio lists confirm that humorous boat-names were very popular in the 1980s.

Why do we laugh at these names, and why do we remember them? To analyze humour, ambiguity and incongruity are two central concepts. Linguists talk in terms of phonological, lexical and semantic ambiguity, and quite a few boat-names may be defined as 'funny' because they have more than one possible meaning. The sail boat *Love for sail* is one example among many. Psychologists, on the other hand, will base their analysis of humour on the notions of incongruity (which implies ambiguity) and resolution. A text or a situation is perceived as humorous if the perceiver detects an incongruity – i.e. if the text or the situation in some way violates his expectations – and he is able to resolve this incongruity, so that the text or the situation is seen to be sensible when viewed in the appropriate way. The resolution of a perplexing situation involves a decrease in arousal that is felt as pleasure (Pepicello & Weisberg 1991).

Many boat names may be analyzed as 'texts.' *Lazy Gale*, *Dronning Lars* [*Queen Lawrence*], *Dansketind* [*Danish Mountain Peak*], *Fantelady* [*Tramp Lady*] ... are more or less funny because the two elements of the names are semantically incongruent.

Very often, it is not the name in itself that is funny, but the incongruity springs from an unexpected combination of a name and its reference, i.e. the boat. Typical examples are small boats with *Titan* or *Giant* as part of the name, tiny dinghys named *Queen Elisabeth*, etc., or old wrecks named after famous passengers liners. We may perhaps speak in terms of an 'extended text,' which includes the name and the boat.

Incongruity, then, may be due to the situation. Such situational incongruity will also cover the countless examples from our modern pleasure boat fleet where people have chosen names squarely unsuitable for boats according to conventions and maritime traditions. The names may be product designations, like *Cheddar*, *Blue Bayou*, *Jogurt* [*Yoghurt*], *Cream Cracker*, *Valium* [*a sedative*], or products like *Garlic*, *Curare*, *Kokfesk* [dialect for 'Boiled Fish'], *Lutefisken* [*a very special fish dish*]. Other curious names: *Cigarettes*, *Women and Wine*, or *Sexy*, *Bonden* [*The Farmer*], *Holy Cow*, *Dagros* [*a typical cow name*], *Guess Who*, *Crazy*, *Still Crazy*, *Skrullen* [*The Fool*], *Ambivalentia*, *Stradivarius*, *Backlash*, *Behå* [*Bra*] (probably a catamaran!), *Fertility*, *Pregnancia*, *Half a Kingdom*, *Kræsj* [*Crash*], *Skilsmissen* [*The Divorce*] ... The above examples are mainly from the public VHF catalogue, and pages may be filled with such strange names.

Among the humorous names in the questionnaire material, the two largest subgroups are names telling how the boat was financed, and names referring to drinking and alcohol. Together they count grossly half of the reported names.⁶ The VHF radio lists confirm that these names became quite popular in the 1980s, even if they are less numerous than other types of humorous names. In fact, the 'finance' and 'drinking' names hardly represent more than 1%, roughly estimated, of all the boat names in the radio lists. What is important, however, is that it is these names that are observed, remembered and retold. They have a very high expressive potential.

Among the names telling how the boat was financed, we find a series of 'Costa-names,' which profit from the same homophony as in English (Norw. *koste* = Eng. *cost*). The origin is to be found in Mediterranean topographic names. The three most common

names are *Costa Nok* [*Cost Enough*], *Costa Plenty* and *Costa Meer* [*Cost More*]. As a parallel to these, we find names like *Armoden* [*Poverty*], *Arven* [*The Inheritance*], *Avdraga* [*The Installments*], *Banco*, *Banken* [*The Bank*], *Bankens* [*The Bank's*], *Bankerott* [*Bankrupt*], *Belåna* [*Mortgaged*], *Betalt* [*Paid*], *Black Money*, *Cash*, *Cash Flow*, *Conkurs* [*Bankrupt*], *Crita* [*On Credit*], *Debitor* [*Debtor*], *Dollar*, *Egenkapitalen* [*Holding Capital*], *Ekstrajobben* [*Money earned on the side*], *Forsakelsen* [*The Renunciation*], *Gevinst* [*Profit*], *Gevinsten* [*The Prize*], *Gjelda* [*The Debit*], *Heltblakk* [*Completely Broke*], *Innsatsen* [*The Stake*], *Jackpot*, *Kostelig* [*Expensive*], *Kreditt* [*On Credit*], *M/K Lån* [*M/C Loan*], *Over Evne* [*Beyond Means*], *Raka-Fant* [*Stone Broke*], *Ruin*, *Rå Dyrt* [*Exorbitant Price*], *Skatten* [*The Taxes*], *Spekulator* [*Speculator*], *Spleis* [*Gone Dutch*], *Studielånet* [*The Student Loan*], *Takk Banken* [*Thanks to the Bank*], *Tom Peng Pung* [*Empty Wallet*], *Utgiften* [*The Expenditure*] ... There seems to be no end to the row of imaginative financing names. Also, several of these names have a double meaning in Norwegian, and thus present ambiguity on the linguistic level, in addition to the situational incongruity.

Of names referring to wine, liquor and drinks, the following have been reported: *Aqua Vita*, *Black Label*, *Black'n White*, *Bloody Mary*, *Blue Nun*, *Brandy*, *Campari*, *Captain Morgan* [*a rhum*], *Chianti*, *Chivas Regal*, *Cocktail*, *Cognac*, *Cuty Sark*, *Double Whisky*, *Dry Martini*, *Dry Sack*, *Four Roses*, *Gammel Reserve* [*an aquavit*], *Grand Charm* [*a sparkling wine*], *Kalinka* [*a vodka*], *Koskenkorva*, *Old Smuggler*, *Pilsen* [*The Pilsner*], *Rioja*, *Sangria*, *Screwdriver*, *Sherry*, *Southern Comfort*, *Tequila*, *Upper Ten* [*a whisky blend*], *White Horse*, ... Other names in the same vein: *Alco*, *Alkoline*, *Bonski* [*Bottoms Up*], *Pilsnerfjord*, *Pilsine*, *Ølekspressen* [*The Beer Express*]



Whisky. A name that hardly needs any comment (Photo Bjarne Rogan).

press], Ølfjord, Karken [The Moonshine Booze], Pjallen [The Drink], Toddy, Long-drink, Hangover, ... It goes without saying that the attitudes to these names vary: some observers take offense or find them unseemly, the majority seem to be neutral or accepting, and many find them amusing. But they all remember them and talk about them.

Humour II: Cultural Context and Social Roles

Humor itself is a kind of bridge, a passage by incongruity from one view to another which society provides as an escape from the crushing weight of traditions or the painful anxiety developed by conflicting loyalties. In humor we travel incognito, so to speak. The serious, pious, majestic self can become merry, impious, and wise. Such transfigurations of role within the self, as well as between the self and others, are changes of identity (Duncan 1968:257).

If we consider these names in an 'extended text' perspective, we may say that they will often be perceived as funny (or offensive) because of the incongruity between the name and the object. But the incongruity aspect alone cannot tell us why many people have chosen these names for communicating.

Communication and humour will always imply a social relationship. Or, as a sociologist will put it, humour is socially situated, like all interpersonal behaviour. Humour must be appropriate to the normative properties of the more general social circumstances (Fine 1983). To better understand the choice of peculiar boat names and their popularity in the 1980s, we must look beyond the text, to the social and cultural context.

The principal goals of humour are said to be threefold: group cohesion, intergroup conflict and social control. This is certainly a fruitful way of understanding the social functions of humour. But in the case of boat names (which seldom imply ethnic jokes, subgroup identity, etc.), it will probably be more rewarding to stress another sociological approach, viz. looking at humour in terms of the social roles of the owners. As our starting point was the boat as a possession and an extension of the owner's self, the role aspect may offer a cue.

In the 1890s, the nomenclature of the pleasure boats was characterized by sober attitudes, compliant to the moral standards of the establishment, who formed the small elite of pleasure boat owners of the day. The names also conformed to boat name traditions along the coast, i.e. to the norms of a population for whom boating represented no amusement but serious business. Emotionally tinged names certainly existed, together with names expressing hope for a safe journey and perhaps also for a prosperous future. But humorous names hardly existed, and 'financial' names or flippy or vulgar names were inconceivable.

The social and cultural context of the 1980s has not changed totally. Contemporary pleasure craft milieu comprises traditional family touring activities, as well as traditional name types. The best proof is in all the names demonstrating reverence for the family, an attitude that the bourgeois fathers of the 19th century would have applauded. Emotions seem to be more overtly expressed today, through all the acronyms including the children, names stressing the word 'family,' a long series of names expressing notions like happiness, harmony, love, extacy, freedom, catharsis, etc.

But the pleasure craft milieu of today is characterized by a very broad social recruitment, and humour has come to be accepted as a normal category of boat names.

In the 1980s we also find more unbridled groups of the type 'much money and less seamanship', as described in the introduction, who seemingly try to escape from the crushing weight of traditions – at least in matters of naming – and this setting even allows 'vulgar' and 'bad taste' names. Sex entered the nomenclature of pleasure boats, and so did four-letter-words, alcohol and money – types of names that were taboo in the old bourgeois nomenclature.

Admittedly, a high percentage of contemporary boat-owners have chosen inoffensive humorous names of various kinds. But 'bad taste'-names are cited and commented upon by everyone, though only about 1% have chosen such names for their own boats. This brings us to the social roles of this minority of name donors.

Within most societies, states Fine (1983), there are roles or positions that are conducive to the display performance of humour. Some people are allowed to joke, and some even expected to joke. These persons have a long history in Europe, ranging from the fools of medieval courts to our circus clowns. According to Fine, there are four such roles commonly encountered in western culture: the fool, the clown, the joker and the comedian. These roles will often overlap, and I shall not try to distinguish between them, but only point out some characteristics that make it reasonable to consider an interpretation in this direction.



Gin and Tonic. The owner of this expensive motoryacht clearly accepts to play the role of the social fool. A name like this will be taken as an offense by some, and admired by others. As stated above, nothing is funny to everyone and anything seems potentially funny to someone (Photo Arthur Sand).

Humour III: The clown and the joker

The fool can be the embodiment of each man's wish to escape from the full burden of responsibility which he carries (Daniels and Daniels 1964:227).

The central idea is that the joker or fool have a 'licenced freedom,' and he is a tolerated deviant type. He must be willing to be the target of laughter, but in general, he is also admired for what he can say and get away with without being punished. He may do and say foolish things, for instance give his boat an idiotic name. He may name his boat *Black Money*, and thus express a more or less common discontent with our tax system. Such discontent was especially strong among the yuppies of the unbridled 1980s. This name is an overt insult to our tax authorities, but the owner will get away with it, because any tax commissioner will think it futile (and below his dignity) to start investigations about the financial transactions behind the investment. Some observers find such names far too much on the parvenu side, but very many people would laugh sympathetically and wish the owner good luck in his private war against the authorities.

Even more amusement and tacit sympathy would result from the rather coarse names *Ruin*, *Beyond Means*, *Bankrupt*, *Stone Broke*, etc., because many middle class boat owners will feel that these names mirror their own situation. A person may name his first boat *Costa Nock* and his next *Costa Mehr*, as one of my respondents did, with this explanation: 'Boats have become far too expensive ... I can mention many such names. Boat owners express their protests in this manner. Everyone thinks that prices are artificially high, hence those crazy names. None of these names is suitable for boats, nor are mine.' Actually, very few persons will disgrace their own dear possessions by ribald pecuniary names, but they appreciate the fact that some have the guts to speak out.

Boat names that allude to wine, liquor and drunkenness will normally be perceived as even more coarse and indecent, for several reasons. In the eyes of responsible seafarers, traffic at sea is incompatible with alcohol. But too much responsibility may be felt as a burden, and an outspoken enfant terrible – giving his boat a 'boozy' name – may become an object of secret admiration. Furthermore, the merry social set of the 1980s that could afford expensive pleasure boats, would normally have very liberal attitudes to alcohol and be strongly opposed to the prohibitive policy of the national authorities, and even more, to the traditional tee-totalitarianism that dominates our southern and western coasts.⁷ These boat names will normally be understood as a protest against the alcohol monopoly and price policy of the State, and as an aggressive kick below the belt for the prohibitionists. Only one in several hundred will play the clown and paint *Black Label*, *Old Smuggler* or *Koskenkorva* on his boat. But very many co-boaters appreciate his indecency and buffoonery (and social courage?). A fool or a clown may have conspicuous functions as an outlet for aggressive tension, and many Norwegians certainly become a trifling aggressive when they feel that the price of the bottle becomes exorbitant or the pub closes too early at night. In matters of alcohol policy, it is the 'cultural order' that reigns, through a series of national and local regulations. But in the harbours, it is 'natural disorder,' in the form of popular irony, that rules. That is why these boat names are so willingly reported and commented upon, even if they are far from numerous.

Institutionalized clowning is well developed in all major cultures. Every kind of society seems to find fool types useful in sublimation of aggression, relief from routine and discipline, control by ridicule, and unification through 'communion of laughter,' states the sociologist Klapp (1962:69). As he sees it, people are what they laugh at, and the fool may reveal our national character. There has seldom been uttered a truer word about Norwegians and alcohol jokes. For many Norwegians, anything that has to do with alcohol – and not least boat names referring to drinking – seems to be funny, thanks to prices and restrictions.

Between Cultural Order and Natural Disorder

The clown – to close this discussion – is mediating between cultural order and natural disorder.

The majority of our modern leisure boat names are in harmony with the ruling ideology of society. For most boat owners, conventions and cultural order determine the choice of boat names. For them, the boat is normally an important possession that deserves a select name. And a family father will often name one of his dearest possessions after his dear family. By materializing his good memories into the object, it becomes an extended part of the owner's self.

But the cultural order may also become a burden and a responsibility from which the ordinary boat owner sometimes wishes to escape. Ninety-nine percent never actually try. But perhaps one in a hundred will. In our culture he is the clown. Publicly, he will be rebuked or laughed at. But quite a few observers – family fathers included – will admire him in secret. Why else would so many respondents – themselves owners of boats bearing names reflecting cultural order – report long series of boat names characterized by natural disorder, without taking offense? And how to explain otherwise that as many as 14 pleasure boats⁸ – according to the VHF catalogue – actually bear the names of *Bajas* or *Bajazzo*, meaning *Clown*?

Notes

1. Citation from a Swedish newspaper. The situation described above is not unknown in our neighbour country.

2. Not every boat owner is a male person. But the majority of men among the owners is so overwhelming that I take the liberty of writing *he* and *his*, instead of *he/she* and *his/her*.

3. I have used membership lists from yachting clubs, radio and communication lists, etc. The comparative study is based on lists from the same yacht club around 1890 (about 120 names) and around 1980 (about 850 names). Cited names are drawn from all types of lists from the 1980s, including maritime radio lists (some 30–40,000 names), and also from questionnaires (see below). Citations with motive explanations are from the questionnaires.

4. In 1991 a questionnaire was distributed to pleasure boat owners in four different regions of Norway (south, centre, west and north). Around 340 of 1200 questionnaires were returned to us, with information about the owner's boat and its name. The most important data received in this campaign were the owners' own explanations of naming motives, their attitudes to different types of names, lists of observed names

('good' and 'bad' names, etc.), and reports on naming practices, baptism, etc. In total, some 2,000 names were reported and/or commented upon.

5. All cited boat names in *italic* style. Translations of Norwegian appellative names are rendered in square brackets [].

6. I.e. not for the respondents' own boats, but the boat names reported and/or commented upon by the respondents.

7. Also, young boat owners will probably oppose the elder generation through such names, but the material is too small to allow a further discussion of this topic.

8. The VHF radio catalogue (1988) lists 14, but there are probably several other *Bayas* without radio communication equipment.

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A Capitalist Fisheries Co-operative: A Bulgarian Innovation

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ABSTRACT Eastern Europe is now experiencing turbulent times. Old institutions are being dismantled, a pluralist political system is appearing, market mechanisms are introduced to replace centralist 'command' economies, and state firms are privatized. The future of the co-operative sector is now a political issue in several Eastern European countries. Does privatization mean the liquidation of co-ops or simply a more favourable environment for exercising co-op management? In this paper we view the new situation from the perspective of one Bulgarian fisheries co-operative. We describe how the co-op is coping with the old regime. We also detail its hopes and aspirations for the future.

Introduction¹

Privatization is now, more or less, under way in most Eastern European countries. The central state is loosening its grip on the economy. Prices are left to market forces. State enterprises are sold, the family farm is reintroduced, and confiscated land is given back to the original owners.

Many Western observers have noted that there is a tendency to go from one extreme to the other. At present, the market mechanism is seen as a panacea for most, if not all, problems of the economy. Collective institutions have been so discredited under communist rule, that they have lost all legitimacy.

If this is, in fact, the case, one wonders what is going to happen to the co-operative sector in Eastern Europe. Co-operatives were well established long before the communist take-over and have survived, to some extent, up to this day. Will the co-operatives be strengthened or transformed? Or, will they go down the drain together with the state corporate system? The role and status of the co-operative form of organization is now a matter of debate in many Eastern European countries, and the outcomes remain to be seen. In this paper we suggest that the future of co-ops in Eastern Europe depends on the answer to the question: Are co-ops by nature (mostly) public or private enterprises?

By definition, co-operatives are neither public nor private, but contain elements of both. As noted by Otnes:

They oppose capitalist firms, as co-ops are aiming for the maximization neither of profit nor of turnover. They oppose socialist enterprises, since co-ops are aiming merely for a more egalitarian distribution of profit, not for its abolition (1988:126).

Co-op property is unlike that of socialism in being shared but still private, not public; it is further unlike capitalism in being private but rejecting the remuneration of Great or Finance Capital in itself, whenever unwed to its owners' personal participation in co-operative activities (1988:128-29).

If, conceptually, the alternatives at hand are regarded as a choice between public or private, there should be no room for the co-operative under privatization. In the current situation then, co-ops in Eastern Europe find themselves in a squeeze. Their future is uncertain unless they can be classified as private or reorganized so as to fit the criteria of private enterprise.

Here, their record under the previous regime is important. For instance, to what extent are co-ops identified with the old system? Poland is an interesting case in point (cf. Jentoft and Marciniak 1991). While new co-operative legislation is now in process (January 1992), co-ops are still in operation at the local level. However, state-controlled unions of co-operatives at sectoral, regional and national levels have been abolished. In Poland privatization does not exclude co-operatives, only the 'command' structure which has surrounded them. This has led to more autonomy; but, it has also made co-ops more vulnerable, as they must now become more self-reliant and competitive. We argue that the political and popular support of co-ops in today's Poland can partly be explained by the fact that also under the old regime, and particularly during the 1980s after the rise of the Solidarity movement, co-ops were regarded as 'havens' of local initiative, participatory democracy and 'grass root' control.

This paper brings us to another Eastern European country, Bulgaria, and to a very different situation when compared to the Polish circumstances. Co-ops played a substantial role in most sectors of the Bulgarian economy, fisheries included, long before the communist government assumed power in 1945. From 1947 onwards, they met with resistance from the new government as private property became nationalized. The co-ops were not targeted directly, but new legislation made it increasingly harder to survive with the classic co-operative principles intact. In this way, Bulgarian co-operatives experienced much of the same fate as Polish co-ops. But, while Polish fisheries co-ops survived and thrived in spite of a rather hostile state bureaucracy, their Bulgarian counterparts vanished because of the many restrictions that were put on co-op activities. Thus, by 1990 there was only one Bulgarian fisheries co-operative remaining, the *Neptune Fisheries Co-operative*. In this paper we tell the story of this co-operative: how it came about, how it is organized, and how it struggles to survive in a system where much of the old bureaucratic command structure is still intact, but where privatization is taking place. These structures are viewed from the 'bottom up' as we describe how they are seen through the eyes of the members and the management.

Co-operatives in Bulgaria

According to a report published by the London-based International Co-operative Alliance (ICA 1980), Bulgarian co-ops accounted for about 33 percent of national retail goods turnover and 36 percent of the turnover in public catering. Industrial enterprises of consumer co-operatives manufactured 98 percent of non-alcoholic beverages, some 70 percent of confectioneries and 56 percent of bread and other baked goods produced in the country. Agricultural production co-ops occupied 70 percent of all cultivated

land, and were also heavily involved in agricultural raw materials processing. Co-ops could also be found in souvenir production, clothing manufacture, carpentry, and communal services. Today they form a national union of co-operatives based in Sofia, with regional subdivisions.

The first co-operatives in Bulgaria were established as early as the 1880s within commerce, finance and manufacturing industries. They were formed by people who were inspired by German experiences with this particular organizational form. The co-ops played a major role in the Bulgarian economy. They enjoyed much popular confidence and support by the end of World War II when the communist government took over.

From 1947 onwards a process of nationalization started, which gradually changed the working conditions of co-operatives. The co-ops were not targeted directly, but step by step they lost much of their autonomy, through devices such as taxation and the state monopsony with prices being decided unilaterally by the government.

In the late 1960s and early 1970s many co-operatives, particularly within agriculture, were nationalized despite, or rather because of, their relative success and competitiveness. However, they retained their name as co-operatives. This may blur the meaning of the statistics presented above. These developments have also brought many Bulgarians to regard state firms and co-ops as the same thing.

Fisheries co-operatives were also in operation long before the communist regime took over. They were all small-scale organizations operating either on the Black Sea coast or on the Danube river. Among the very first fisheries co-ops was the *Bulgaria* in the town Sozopol on the Black Sea coast. It was created in 1924 by young men who finished their training at a professional fishermen's school and needed employment. Some 80 to 150 people worked there, divided into teams of ten members – a *daljan* – each of which operated a fixed trap. The co-op was operative until 1947.

Before World War II individual *daljans*, working as informal quasi-co-operatives, spread along the whole Bulgarian coast and on the Danube. The number of people in the *daljan* varied depending on season and type of fishery, but usually it comprised 10 persons. The catch was divided into 11.5 parts, named a *pai*, which was distributed so that the captain got 2 *pais*, the vice-captain 1.5 *pai*, and one *pai* to each of the crew. One can still find a *daljan* in operation in the town of Sozopol. All members are retired fishers from the local state enterprise. They get their boats, equipment and petrol from the state firm and for this they have to pay fifty percent of their catch. The balance remaining is divided as described. This part of their catch is sold privately.

In the early 1950s the fisheries co-operative – *Trud* – was established in Sozopol, with 60 members. However, due to financial difficulties it was soon closed, and the fishers became employed by the local state company. Four other fisheries co-operatives were established during the 1950s in Sozopol, two of which specialized in dolphin fishing, but they proved unviable after just a few years. They were only active within harvesting. Fish-processing as well as offshore fishing were reserved for state enterprises. Two of the co-ops were transformed into state firms. From 1957 onwards there were no fisheries co-ops left in the country. The only existing Bulgarian fisheries co-operative, *The Neptune Fisheries Co-operative* situated outside of the city of Varna on the Black Sea coast, was established recently. All other fish companies are at present state-owned. Before looking more closely at the Neptune co-op, a brief statistical description of Bulgarian fisheries is in order.

Bulgarian Fisheries

According to the most recent FAO statistics, in 1989 Bulgarian fish captures were 102,000 tonnes.² But, total catches varied throughout the 1980s. For instance, in the mid-1980s they reported as 100,000 tonnes, in 1988 117,000 tonnes. As a fisheries nation, in 1989 Bulgaria ranked as number three among the Eastern European countries (after Poland and DDR – the USSR not included).

Only 8,600 tonnes of the 1989 catch was taken in the Black Sea and the Mediterranean, compared to 17,900 tonnes in 1980. This illustrates the increasing relative and absolute importance of the Bulgarian deep sea/distant water fleets for the supply of fish. Bulgaria is a net exporter of fish. The average fish imports between 1986 and 1988 were 1,700 tonnes, while exports totalled 49,200 tonnes. The USSR has traditionally been the main customer. The fishing industry also supplies proteins for internal consumption. The average supply of fish per capita in Bulgaria is 7.2 kg.

Until 1944 the total Bulgarian catch, including freshwater fish, was only 5,000 tonnes annually. This means that the fishing industry has been developed largely from scratch since the Second World War, beginning with a state enterprise established in 1948 in the city of Burgas (see map), and operating on the Black Sea.³

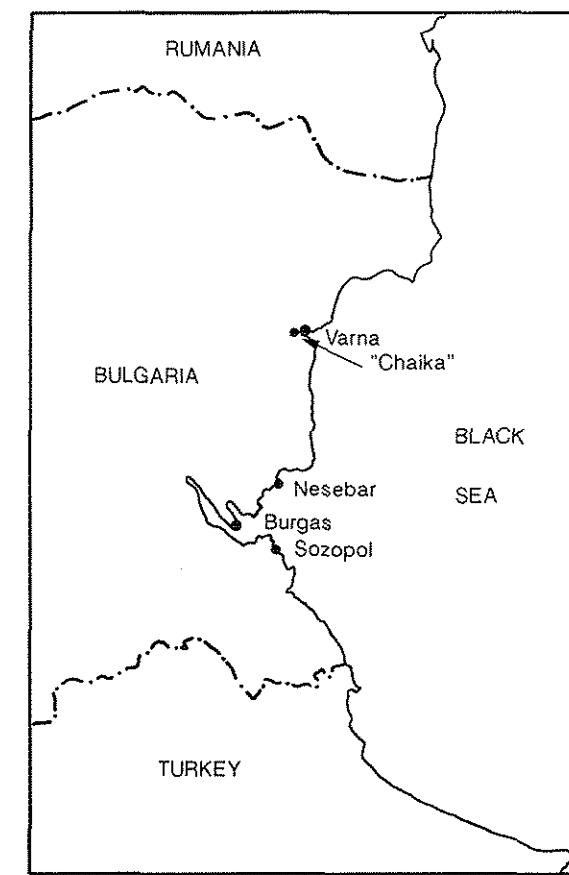
Bulgaria is predominantly an agricultural country, and fishing has traditionally been of minor importance. This changed however in the mid-sixties when efforts were undertaken, largely thanks to the assistance of the Soviet Union, to develop the deep sea fishery. In 1964 the deep sea fishing company *Okeansky Rybolov* was formed. This was also situated in Burgas. In 1981 there were 26 deep sea trawlers, many of them operating in African waters and often in close co-operation with Soviet fleets.

Burgas (188,000 inhabitants in 1984) became the fishery capital of Bulgaria. Today it contains a fishing enterprise specialized on Black Sea fisheries, with local branches in the towns of Sozopol and Nesebar. Another enterprise operates from the large Black Sea coast city of Varna (302,000 inhabitants in 1985). The main commercial species on the Bulgarian coast are the Black Sea sprat and horse mackerel.

All of these firms are parts of a big state owned company – the *State Enterprise for Fisheries* with headquarters in Burgas. This enterprise also has a fish imports and exports unit – the *Bulgar Ryba*. Furthermore, it includes a fish processing factory (the *Slovianka* built in 1973), a large shipyard where most of the trawlers have been built, and two research institutes. In total, the enterprise employs 7000 people, including 1200 workers within fish processing. A similar but smaller state firm located in Plovdiv has responsibility for fresh water fisheries, including aqua-culture. There is no private sector to speak of within Bulgarian fisheries. Neither is there a co-operative sector, except for the one enterprise that we describe next.

The Neptune Fisheries Co-operative

The Neptune Fisheries Co-operative came into operation in January 1989. It initially included 30 fishers, all of them part-time and employing small, privately owned boats. They needed to organize sales more professionally and to improve their bargaining power concerning prices vis-a-vis the government. They also wanted the co-op to



provide supplies, gear, petrol, and the like. The fishers of one community – *Chaika* (the Seagull) – visited by the authors (see map), also claim that the state used to be slow with the payments, sometimes paying less than prices agreed. The state alleged low product quality as the explanation. With the co-op, fishers are now paid immediately upon delivery. Private sale of fish used to be illegal. If caught, fishers lost their catch and were fined 200 Levas.⁴ This regulation was cancelled in 1990.

In November 1990, the co-op had 450 members, including 79 fishers. By law there is open membership in Bulgarian co-ops. Most of the Neptune members are passive, i.e. they are not working in or through the co-op. To become a member one has to pay a fee of 5 Levas and be over 16 years of age. Altogether, the fisher-members are recruited from 15 different communities in the area, most of them fishing part-time with privately owned boats. The co-op collects the fish in three of the communities, *Chaika* being one of these. Members are not obliged to sell to the co-op, and the co-op does not buy shrimps. Indeed, most people live in these communities only in the summer season. Fishing has traditionally been a lucrative part-time activity, particularly in the tourist-season. Average income per year for the fisher-members is 1700 Levas.⁵ Now, however,

the costs of fishing and living are increasing and income is uncertain. The fishers complain that catches have been reduced over the years, something they attribute to the pollution in the area. They do not trust the government's assurance that this is not the cause.

Twelve people are employed by the co-operative in administration and transportation. The main office is located in a residential area just outside Varna. The building is, as real estate in general, owned by the state and rented to the co-op. The same arrangement applies in the fishing communities where members live. The people of *Chaika* were once forced to leave their community, and today they are afraid that they will have to move again because of rumours that the shoreline will be sold to a Greek private investor who wants to establish a tourist hotel. The manager and the members say that, without ownership of the land and the building, the co-op is vulnerable. They hope that privatization will bring a change in this respect.

The Council – a general meeting of members – is the supreme authority of the co-op, meeting every third month, or more often if it is needed. It elects a Board of seven for three years at a time, which is chaired by the manager. The manager, however, was appointed by the co-operative union in the Varna region. In addition to the Council and the Board, there is a Control committee of three members.

The charter of the co-operative is designed by the members, but it is based to a large extent on the standard legal regulations of co-ops. Many of the paragraphs are common to all co-operatives while some are added by the members and reflect the specific local and industry characteristics. As is the case with other co-operatives, the Neptune co-op is allowed to supplement their core activity with involvements in other activities. Today it owns and runs a restaurant, a fish retail store, a mechanical and an electrical workshop. The most recent addition to the co-op's activities is administering 380 taxi drivers. During the current crisis the taxi-driving business has boomed as people strive to supplement their scarce incomes by driving for fares.⁶ According to the manager, the co-op could not have survived economically without these supplementary activities. Fisher-members of the *Chaika* community agree. The decision to diversify has not been controversial among members.

In addition to a membership fee, members have invested capital in the co-op, varying from 55 to 6000 Levas. Table 1. shows the distribution.

There are 70 fishers among the 80 members who have invested in the co-op. Only those who have invested can participate in decision making and profit-sharing. An investment of 55 Levas is the lower limit entitling the member to voting privileges and bonuses. The manager and the assistant manager have also invested in the co-op, 1556 and 650 Levas respectively. Only one of the taxi drivers has share-capital in the co-op. His share is the biggest and amounts to 6000 Levas.⁷ In contrast to the common co-operative principle of remunerating personal participation, bonuses to members are distributed in accordance with their capital share. Last year the bonus was 3 percent.⁸ In this way, income distribution in the Neptune co-op resembles the capitalist shareholder company (cf. Otnes 1988). However, in contrast to a shareholder company, the traditional Rochdale co-operative principle of one-member-one-vote is applied in decision making. The Neptune co-op has fewer than 100 members; thus, the general principle stated in the co-operative law requiring that one delegate be elected to the council for every twenty members, is not applied. From the above it is apparent that the Neptune co-op is a mixture of a capitalist enterprise and a conventional co-op, and

may deserve the label 'capitalist co-operative'. The 'odd' quality of this is that the innovation occurs in a socialist state. This organizational form may, however, help to solve the problems of capital formation and finance which are inherent in the co-operative organizational approach. It may also, in the long run, secure loyalty of members as they have more at stake in the co-op than just their ordinary membership entrance fee (cf. Jentoft 1986).

Table 1. Member-share capital in the Neptune Fisheries Co-operative.

Investment	Members
More than 1000 L	6
Between 600 and 1000 L	10
Between 200 and 600 L	15
Less than 200 L	49

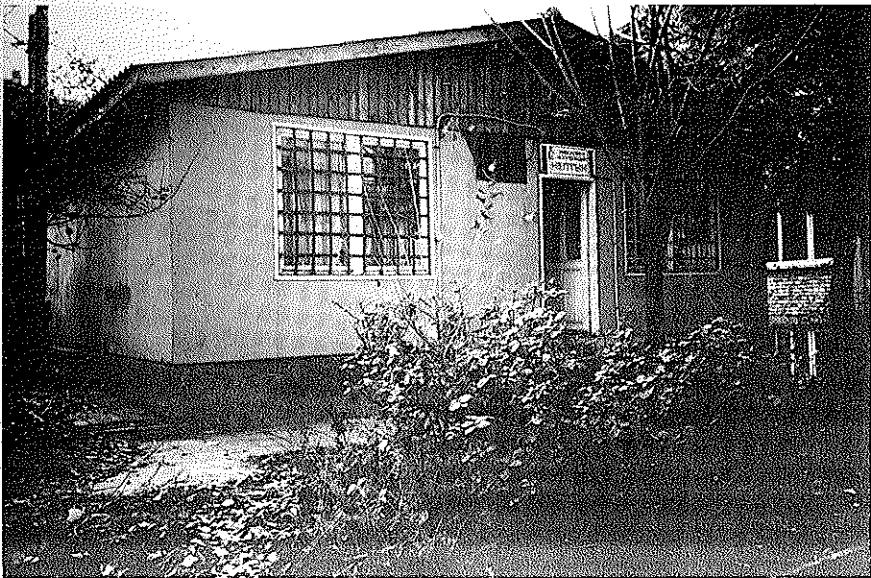
So far the Neptune co-op has been economically successful. Between 1989 and 1991 revenues increased from 40,000 to an estimated 100,000 Levas. A large part of the increase stems from the taxi business, which is the main 'secret' behind the co-op's success. But, it also has resulted from the restaurant business where they serve fish from the co-op. The sale of fish accounts for 54 percent of total revenues. In 1989 fish sales amounted to 31,516 kg, by September 1990 the figure was 27,260 kg. These figures illustrate the small-scale quality of fishing activity. Profits increased from roughly 11,000 to an estimated 60,000 Levas before state (18.3%) and municipal tax (12%) and fees to the co-operative union (10%).

The Neptune is a member of the Varna regional union of co-ops, which has 29 members drawn from various industries under its wings. As there are around 3000 full- and part-time fishers (including deep-sea fishers) in the region, the union wanted a fisheries co-op established. However, except for appointing the manager and providing juridical advice when the charter was drawn up, the union played a minor role in setting up the Neptune co-op. The co-op applied for financial support to buy gear for the fishers and two lorries, but was turned down.

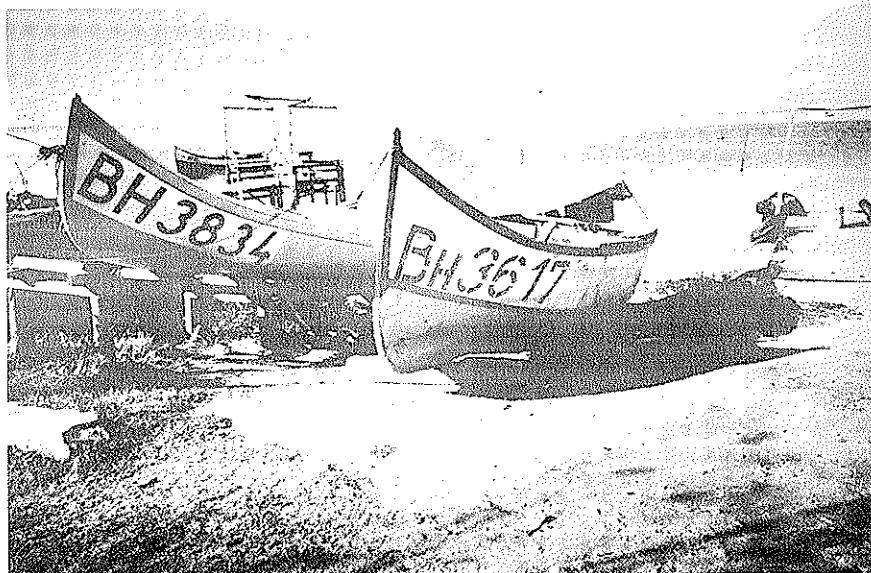
The union is highly controversial. If it was entirely up to the manager of the Neptune co-op, the union would meet the fate as its Polish counterpart:⁹ 'It is nothing other than a bureaucratic hat, and should be abolished.' The union operates in a very autocratic way. For instance, in order for the co-op to get a bank loan, the union must co-sign the application. For the stamp and signature the union charges 10,000 Levas. In practice, this works as a permit and a licence. Without conforming to the union's policy, an individual co-op has no chance. According to the manager; 'Only if you're polite to them and accept all their decisions, you may work.' Membership in the communist party has also been crucial. The co-operative law allows co-ops to diversify into new activities. Therefore, the union could not stop the Neptune's expansion into businesses other than fish, a development essential to the co-op's success.



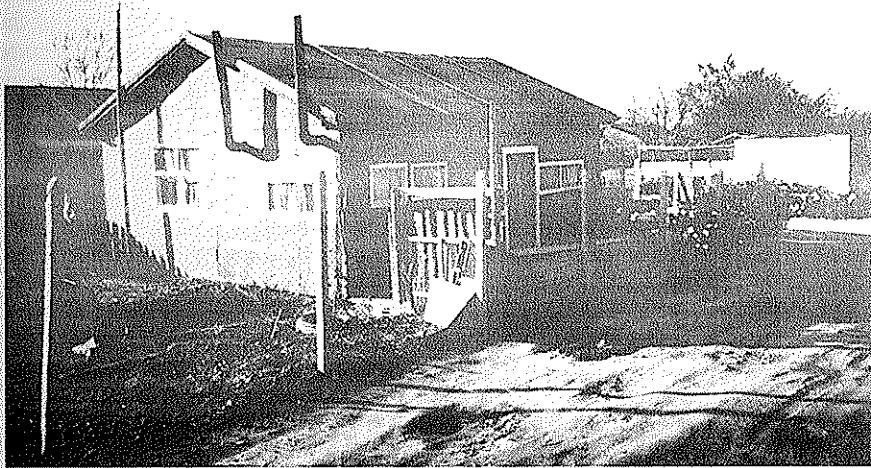
Fishers of the Chaika community.



The Neptune Fisheries Cooperative administration office.



Boats belonging to the co-operative fishers of the Chaika community.



A fishers' home in the Chaika community.

One incident illustrates the nature of the affiliation to the union particularly well. Until now prices to fishers have been decided upon by the government and have remained at the same level since 1973. Last year the co-op decided to introduce calculated prices. The prices on gasoline and gear increased, and the co-op surveyed the local market to determine the price customers would accept. Accordingly, prices both to consumers and to the fishers were raised by 50 percent. For this, the co-op was punished hard. It was fined 20,000 Levas – half of the year's profit and three times what the co-op earned by raising the prices. The Central Co-operative Union asked for the manager's dismissal and a personal fine of three monthly salaries. He had to pay this. However, the manager later got it back from the union with a warning that more severe action would be taken if the practices were repeated.

Despite the rather distressed relations between the Neptune co-op and the co-operative union, there are reasons for optimism. In the new political climate it is easier to talk freely and to criticize the system. However, a fear of backlash and negative outcomes remain. The co-operative union still has the power to remove the management. Moreover, since the co-op does not own its own buildings, it has no guarantee that it can keep them in the future. At present there is a discussion occurring within the union concerning the extent to which a co-op should be allowed to own property. Seen from below, this is a crucial issue. As noted by the Neptune manager: 'If not, we can never be a true co-operative. This is one of the conditions on which self-management rests.'

Another factor of great relevance for the co-op's autonomy is the price question. At present the co-op is not allowed to benefit from the high demand for fish in the consumer market. In deciding the prices both on output (fish) and input (gear, property rents, interest etc.) and with no private market for fishing equipment, the state has full control over what co-ops can do. Those fisheries co-ops that went bankrupt in the 1950s did so because they were not allowed to compete freely with state firms. Thus it follows only logically that the manager is supportive of the implementation of a market economy with free prices.

A third issue pertains to membership. Today, co-ops are open to all irrespective of their other linkages to the co-op. Here the opinion among fisher-members of the Neptune co-op is clear: Only people active in the co-op should be permitted to become members and only they should have the right to elect their management. Until now, the manager has been appointed by the co-operative union in conjunction with the Communist Party.

The manager, an economist by training, has thirty years of practical experience within shipbuilding, mechanical industry, and butchering. For four years, until January 1988, he was in charge of a consumer co-operative which was much larger than the Neptune. Conflicts with the chairman of the regional co-op union forced him to quit, despite the fact that the enterprise worked very well.¹⁰ As the manager remarked during our interview: 'This is just another sign of the undemocratic nature of the co-operative movement in Bulgaria.'

Without any prior knowledge of fisheries when the Neptune co-op started, the manager feared that he would fail and suspects that the union would have welcomed such an outcome. During the first four months of his appointment he visited the fishing communities in the area and talked to fishers, encouraging them to join the co-op. Friends helped with advice and finance, without which the manager could not have

succeeded. This was also critical to the start-up of the restaurant as well as to the sale of fish that was channelled in the beginning through his old co-operative. Today, the fish is retailed through the co-op's own store or through state channels.

In sum, the story of the Neptune co-op, despite its success, may serve as a good illustration of the reality behind the facade of the co-operative movement in Eastern Europe. It describes how the system is experienced on a day-to-day, ground level basis. Officially, the classic Rochdale principles are intact; but, as is evident in the co-operative charter, in practice the co-op has to struggle with a peremptory union bureaucracy which makes self-management fictitious. However, the Neptune co-op demonstrates that Bulgaria is not unaffected by the developments that are currently taking place in Eastern Europe. When talking to the members and the management of this co-operative one can sense the new spirit, the enthusiasm and yearning as to the prospects of privatization. Nonetheless, much of the old paternalistic structure is still intact. It remains to be seen how long the Neptune co-op will remain the only exception to the rule of state ownership in the Bulgarian fishery.

Privatization: What about Co-ops?

Bulgarian and Polish fisheries co-operatives share many of the same experiences and consequences of living under communist rule for decades. In both instances, the principles of self-management and participant democracy were undermined by a peremptory state bureaucracy, preferential treatment of state firms, and a 'paternalistic' co-operative union controlled by the state. In Poland these structures have now been removed and fisheries co-ops find themselves in a more autonomous position (Jentoft and Marciniaik 1991). The tendency in both sites is for new co-operatives to form within the fishing industry as the state sector is being dismantled.

It is too early to predict what will happen in Bulgaria. There are many changes under way which point to outcomes similar to those evident in Poland, but in some ways the situation is notably different. While Polish fisheries co-operatives prospered under communist rule, their Bulgarian counterparts vanished. A part of the Polish economy was never nationalised, remaining private up to this day. In Bulgaria, nationalization was much more all encompassing, private ownership was totally abolished (Davidkov 1991) and '...the existence of any independent organizations, even purely non-political ones, was inadmissible' (Mishkova 1991:31). Also, the Communist Party was wiped out during the Polish national election. In contrast, its support among Bulgarians is still strong as was demonstrated in the 1991 general elections. Although the Communist Party, under a new name, was reduced to a minority position in the parliament, it has enough votes to block privatization reforms. As stated by the editor of *Bulgarian Quarterly*, there are also other obstacles to consider:

The major problems of privatization proceed from the fact that a large part of Bulgarian capital is controlled by the former economic 'nomenklatura.' There is every possibility for the strata of new owners in Bulgaria to be made up of two irreconcilable social groups – that of former owners expropriated by communists who will now justly be requited, and the group of the economic 'nomenklatura' which will be able to buy up state property in the privatization process.¹¹

This study was carried out during turbulent economic and political times in Bulgaria. There is a shortage of most consumer goods, and the queues in front of the food stores are long. Energy supplies are scarce, petrol is rationed and electricity is off and on continuously – ‘Bulgarian disco,’ people say sarcastically. More than 60 percent of the population live below the poverty line. Young people are lining up in front of Western embassies and consulates for visas. Indeed, 410,000 people, chiefly young and educated, have left the country in the last few years, and many more would leave if they got the chance (Genchev 1991). The political situation is also unstable. In the summer of 1990 there were big demonstrations, and the Communist Party headquarters was set on fire. When we visited Bulgaria in November 1990, students were on strike all over the country, and there were demonstrations in front of the parliament. These demonstrations continued throughout 1991.

A new co-operative law is being discussed. The manager of the Neptune co-op is quite hopeful that conditions for co-ops will improve. According to Professor Georgi Kostov of the Bulgarian Academy of Science, the general attitude among ordinary people is that co-ops are viewed positively because of their historical roots.¹² This also applies to the fishery because of experience with the *daljan* system. The general perception is that there is conflict between state and co-op enterprises but not between private enterprise and co-ops. Professional economists tend to agree with this. A new concept of ‘social capitalism’ is being discussed, and co-ops are seen as part of it. People interviewed by us within the independent trade union expect that the new co-operative law will allow workers’ co-operatives or ‘syndi-co-ops.’ However, nothing had been finalized when we visited the country. Whether or not the national and regional co-operative union will meet a fate similar to Polish experience is an open question.

Some parts of the old co-operative law seem to be particularly in line for reform if Bulgaria is leaving state command for a capitalist market-like system. The first paragraphs of the Neptune charter apply to all co-ops in Bulgaria. Paragraph 1.2 states that the co-op is ‘an integral part of the socialist organization of our people’s economic system.’ Furthermore,

The co-op presents itself as one of the forms to attract people and make them actively participate in the building of the socialist society and for communist education... The fishing co-op is a mass social state organization which freely organizes employees. This is the next stage in social and economic development of our state.

With such ambitions on behalf of co-operatives, one should expect that ‘the average Bulgarian’ would think of co-ops as public/socialist rather than private/capitalist enterprises, an organizational form more aligned with the old society than suitable for the new one. The positive attitude to co-ops in Bulgaria today may come as a surprise. While the former regime regarded co-ops as a vehicle on the road to socialism, the new government now perceives the co-op form of organization as a step towards capitalism. The negative attitude towards the communist notion of co-operatives and their purpose has not compromised the original co-operative ideas and principles as such. However, as Bulgaria is advancing towards a market economy, it follows logically that these paragraphs will have to be modified – if not excluded. Additionally, the defining idea of what a co-operative is would have to be redefined, or rather restored, to what it used to mean to Bulgarians before the communist regime took over.

The extent to which co-operatives will be successful in Bulgarian fisheries, given promotion of this organizational form is not just a matter of external conditions such as national legislation. The Western experience as well as the lessons that can be drawn from the promotion of fisheries co-operatives in Third World countries indicate that their viability will also hinge on factors internal to the co-operative, factors such as the quality of the management, the loyalty and support of members etc. (cf. Poggie 1980; Jentoft 1986; Pollnac 1988; Davis and Jentoft 1989). In many cases co-ops are just not able to compete with private alternatives. Thus, a not unlikely scenario for future Bulgarian fisheries co-ops is that, in spite of government support, fishers will still prefer the private option if they were free to choose. Extensive efforts to educate both membership and management of the potentials as well as the problems and pitfalls of the co-operative model will be required if the co-op initiative is to become successful with the introduction of a true market situation.

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Notes

1. The material for this paper was collected during a one month stay in Bulgaria during November 1990. We are grateful for the support of Centre of Bulgaristica in Sofia and the assistance of Ms. Elka Mintscheva and Ms. Mariana Katzarova. We also acknowledge the help we received from Mr. Georgi Maslarow from the Bulgarian Embassy in Warsaw, Ms. Varta Karagadjan from the University of Varna, Prof. Georgi Kostov, Dr. Assen Jossifov, Dr. Christo Petkow and Ms. Valentina Stoeva of the Bulgarian Academy of Science, and Professor Krustyo Petkov of the Independent Bulgarian Trade Unions. We are very grateful for the openness of the management of the Neptune Fisheries Co-operative, Mr. Dimitar Dimitrov and Ms. Dimitrichka Doseva, and the hospitality of the people of the fishing community *Chaika*.

2. FAO Yearbook, Vol. 69, 1969.

3. This section draws heavily upon a study by Thomesen (undated).

4. In 1990 1 US dollar was officially equivalent to 10 Levas.

5. In comparison, full-time fishers and fish-plant workers in a state firm operating on the Danube river near the city of Ruse, also visited by the authors, earned 3000 Levas per year. However, co-operative fishers have to cover costs on boats and equipment which are free to state-employed fishermen.

6. The co-op takes care of the paperwork and provide supplies, for instance petrol rationing cards. If supplied by the co-op, each taxi driver (and fisher) gets an extra 20 liters of gasoline per month, which is twice what they would get if they were privately operating. This explains the interest in affiliating with the co-op. However, only one taxi-driver is a member of the co-op.

7. We have no information as to the background and profession of the remaining 7 members.

8. For 1990, because of the good economic results, some members have requested that the percentage should be raised to 6-7.

9. We tried to get in touch with the central as well as the regional co-operative union, but, unfortunately, they could not find time for us.

10. Of 109 members only seven voted for his resignation.

11. *Bulgarian Quarterly* I(3):7.

12. Personal interview.

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Practical Implications of Chaos in Fisheries

Ecologically Adapted Management

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ABSTRACT This paper discusses the practical implications for fisheries management if fish populations behave chaotically. The paper argues that the principal effect of chaos is manifested in terms of information and measurement problems. In particular, recruitment based policies are likely to require unattainable measurement accuracy and lead to unpredictable outcomes. This raises questions about how sustainability can be maintained in chaotic fisheries. The paper suggests that management based on the relatively stable ecological relationships in fishery systems may be the most practical way to manage chaotic fisheries. It also hypothesizes that successful cases of traditional (community) resource management are likely to be based on qualitative ecological approaches rather than the direct quantitative manipulation (e.g., quotas) of exploited populations.

In a recent article and comment Estellie Smith (1991) and Chris Finlayson (1991) discuss the implications of chaos theory for fisheries management. Both Smith and Finlayson describe chaos theory as a competing paradigm for the conventional 'linear paradigms'¹ of fisheries management. With only minor quibbles we agree with their perspective of the problem and would simply like to add to their discussion a few points concerning the practical implications of chaos in fisheries.

To begin, what we mean by a chaotic fishery is one in which the time path of abundance of individual species has no equilibrium tendency but varies unpredictably within certain limits. This contrasts with standard theory (including its stochastic versions) that assumes population abundance tends towards some predictable equilibrium value.² As we point out below, there is a great difference between the two theories regarding the kinds of useful knowledge about fisheries that we can realistically acquire and, as a consequence, the kinds of practical management controls that can be exercised over fishery populations. In a very basic way, the presence of chaos transforms the management problem into a question of what we can hope to learn, the conditions under which that learning can take place and what we can hope to control. Our major conclusion is that the best hope for successful management of chaotic fisheries lies with 'ecologically adapted' management, i.e., policies that rely upon the relatively stable ecological interactions in the system.

If a theory of chaotic fisheries is (or were to become) a competing scientific approach to fisheries, there is an important question about how scientists and practitioners might choose between theories of chaotic and equilibrium (i.e., standard, or conventional)

fisheries. A naive view of the scientific problem might lead one to assume that some decisive test could be developed that would clearly show that one or the other theory was correct. Realistically, this is not a possibility, because the ocean environment creates extreme measurement problems that preclude unambiguous testing. To validate a theory of chaotic fisheries, for example, would require long and extremely accurate time series that recorded many aspects (e.g., annual year class strengths) of the populations of the relevant species and biosystem. The same is true of standard theory.³ A stalwart defender of either theory could simply, and correctly, claim that an unambiguous proof of the 'other' and invalidation of his or her favorite theory was not available.

Over the long term, what is likely to decide the matter is, first, the intuitive, qualitative assessment of scientifically inadequate evidence by practitioners in the discipline and, second, the equally subjective assessment by those same practitioners with regard to the eventual success of the research and policy program implied by each paradigm (Kuhn 1962). The former consideration does not place chaos theory at any particular disadvantage. All but the most uneducated practitioners are aware of the strong variability and difficult prediction problems associated with marine ecosystems. Most are willing to toy with the ideas of chaos once they understand its deterministic nature.

Where chaos theory fails to be intuitively compelling (or to hold its own with standard theory) is with regard to its implications for future research and policy. Standard theory presents an impressive array of policy alternatives. Almost all are derived from the commonsense notion that 'less fishing effort means more spawners' and 'more spawners means more recruits.' Even if one is aware that there is, at best, only scanty evidence to support this idea (Hall 1988) or even if one is blissfully unaware of *any* theories about the fishery, the power of this anthropocentric view⁴ of the fishery is compelling. When it is elaborated with sophisticated mathematical and economic models that promise the ability to manipulate the environment in a win-win fashion, it is hard to reject. Everyone gains. Fishermen have more fish, higher incomes and stability. Consumers consume more fish at lower prices and the environment is restored to a state of abundance. All that needs to be done is to engineer a social contract that enforces the admirable attributes of individual restraint. In short, when it comes to the question of 'what to do' standard theory presents an extremely strong, intuitive case.

Chaos theory, at present, offers little in the way of ideas about 'what to do' about either research or policy. For scientists and managers concerned with the state of our knowledge and our ability to successfully manage fisheries this is a major problem. If one were to accept the idea that fisheries populations are chaotic, there is no obvious implication for how we should begin to alter our day-to-day management of such fisheries and, perhaps more important, there is no apparent research agenda that suggests how we might eventually find solutions to our management problems. For many, probably most, practitioners the idea that fisheries populations are unpredictable seems to deny the possibility of *ever* achieving a practical management approach. In fact, the immediate negative implications of chaos theory are so strong that many practitioners of our acquaintance tend to view the theory simply as a very sophisticated way to argue for no management whatsoever. We do not agree with these conclusions;

but without an obvious and articulated direction for a practical research and policy program, we can empathize with this perspective.

What we'd like to explore here (briefly and speculatively) is the research and policy program we believe implicit in chaos theory. May (1978) has shown that under certain (usually thought to be unrealistic) parameter values the conventional single-species models used for fisheries populations can exhibit chaotic properties. It is much more likely, however, that the chaos in ocean ecosystems (if it exists) arises from the complex and non-linear, compensating interactions at the system (multi-species) level (Wilson et al. 1990); in short, it is most likely a property of the entire ecosystem and not one which arises from the independent behavior of individual populations. Under these circumstances, the conventional straightforward cause and effect thought to operate on individual populations (e.g., 'more spawners means more recruits'), can be expected to be replaced by much more involved trains of causation that depend upon the interactions with the other species and components of the ecosystem. Consequently, traditional species-specific policies such as quotas or effort reductions *may or may not* lead to an increase in a depleted population and *may or may not* have significant effects on the remainder of the system. What will determine the magnitude and direction of change in an individual population or the effects on the remainder of the system is the condition of the overall ecosystem at that point in time and the nature of the interactions among the species and other components of that system.

For example, Georges Bank is currently dominated by highly predatory dogfish and skates – about 75% of the fish biomass (Status 1991). Given this state of the ecosystem, it is conceivable that a quota on cod, say, might produce more cod eggs, larvae and juveniles, but that those juveniles might become food for the dogfish and skates and never recruit to the fishery. Numerous other ecological configurations might lead to similar quota-confounding outcomes. Under still other, probably numerous ecological circumstances, a quota on cod might have the desired effect. The point is that in the absence of knowledge of the relevant ecological interactions, traditional policies (such as quotas or other forms of effort management) applied to a chaotic system will lead to unpredictable results and an inconsistent and frustrating management experience – one in which cumulative learning by doing is not possible.

Consequently, the need to successfully manage a chaotic fishery means that we must focus our efforts elsewhere. In fact, and this is our main point, we contend that the appropriate scientific and policy research agenda implied for a chaotic fishery must concentrate on understanding (1) the nature of the ecosystem interactions⁵ (where fishing and fishermen are treated as part of the system) and (2) the extent or conditions under which it is possible to control, manipulate or influence those interactions. In the rest of this article, we make an initial attempt to further define this agenda. Our argument is developed by reference to the quantitative attributes of our simulator of multispecies chaotic fisheries and its real world equivalents (Wilson et al. 1991).

The quantitative attributes of this kind of model fall into two categories: (1) the constant parameters and interactions of the model and (2) the values that each of the variables assume during each (simulated) year during the running of the model. Their real world equivalents are (1) the relatively stable ecological, technological and social rules that determine the interactions among species, fishermen and other components of the system and (2) the highly variable (chaotic) values reflecting the abundance of

a species, number of fishermen and so on, at a point in time. This latter set of attributes is, of course, the one in which the peculiar characteristics of a chaotic system are manifested. In most real fisheries this chaos is most clearly present in the recruitment, or sustainability, of each population. It is important to note, however, that within real world fisheries and our chaotic simulator there are relatively stable or predictable aspects. For example, once a year class (of any particular species) is established its numbers tend to decay at a reasonably predictable (or measurable) rate determined by natural and fishing mortality. In most real world fisheries, this predictability is the basis for yield per recruit management. Another relatively stable characteristic of our simulator and most fishery system is the overall biomass; among other things a relatively stable biomass implies compensation among species – as one species declines for one reason or another, other species grow in compensation. These stable or predictable aspects of the system are potential sources of control and management; unfortunately, they have little direct bearing on the sustainability of individual species.

One of the fundamental characteristics of a chaotic system is that future outcomes of the chaotic variables are very sensitive to the particular values of each variable at an earlier point in time. This is called 'sensitivity to initial conditions.' Very slight changes in initial conditions rapidly lead to very different outcomes. In principle, because chaotic systems are deterministic, it is possible to predict the future value of variables; but as a practical matter, an extraordinary and unattainable degree of measurement accuracy of all elements of the system is required. This is the source of practical unpredictability in chaotic systems.⁶

If real world fisheries are indeed chaotic, then the problem of sensitivity to initial conditions strongly suggests that conventional management approaches, such as quotas⁷, that attempt to directly manipulate recruitment to individual populations are unworkable. As a practical matter (and consistent with the predictions of a theory of chaotic fisheries), the difficulties of recruitment-oriented quotas are generally recognized and rarely attempted (Sissenwine and Sheperd 1987). Instead managers tend to seize upon the relative predictability of year-class decay for the purpose of yield per recruit management. Yield per recruit management attempts (through the annual quotas or other forms of effort control) to maximize the yield in weight (or value) obtainable from any given (single-species) year class. Managers recognize that the single-minded pursuit of yield per recruit policies can have unintended consequences for recruitment of that particular species and tend to modify those policies in ways that they hope will minimize adverse effects or, perhaps, help recruitment. Chaos theory, or for that matter any theory that addresses the problem from a system perspective, strongly suggests that yield per recruit management also will lead to unintended consequences (either beneficial or costly) elsewhere in the system. These consequences might be compensating growth, mortality or recruitment distributed among the many species in the system or, as in the example of dogfish and skates on George's Bank, they may possibly concentrate in one sector of the system. Furthermore, in a chaotic system the difficult measurement problems, the complex interactions and the continuous nature of the intervention (e.g., changing annual quotas), make it unlikely that all except the most exaggerated of these unintended consequences will be traceable to their cause.

Consequently, when management pursues species-specific recruitment or yield per recruit policies in a chaotic environment, it implicitly takes upon itself a very large,

costly and basically impossible measurement burden. More importantly, the practical absence of this kind of extremely precise quantitative knowledge of the system means that the outcomes of such policies cannot be evaluated. From the perspective of learning by doing, management that proceeds on a conventional course in a chaotic environment will experience success at times, failure at other times, a strong tendency to create unintended and unrecognized outcomes and, always, an inability to understand the reasons for either success or failure. In short, the measurement and knowledge requirements of a chaotic environment strongly suggest that conventional management approaches will not be able to accumulate the kind of useful knowledge that leads to improved management performance.

The alternative in a chaotic regime is to turn to long-term, ecologically adapted policies based on knowledge of the ecological relationships of the system. The kind of knowledge required for this approach is (relatively) stable over time, does not have to be completely renewed annually, and requires comparatively modest and attainable investments in knowledge of the system parameters. More importantly, policies based on changes in system parameters or interactions (where fishing is considered part of the system) are not subject to the information and measurement problems created by sensitivity to initial conditions. Consequently, to the extent that knowledge of ecological relationships is available such policies can be expected to yield predictable results. But because of the sensitivity to initial conditions problem, this predictability cannot be characterized in terms of quantitatively accurate statements about future states of the system. Instead, predictability comes in the form of qualitative changes in the long-term relationships of the variables in the system. For example, a (permanent) change in the age of maturity or the egg production of a given species can be expected to alter that species' relationship to others in the system in a qualitatively predictable way. Along the same lines, a change in the parameters governing who is preying upon whom or when will lead to certain qualitative expectations with regard to consequences. Similarly, an increase in mesh size in a partially exploited system (i.e., one in which some but not all species are fished) might be expected to generate changes in the long-term relative abundance of exploited and unexploited species and may also be expected to have effects on the relative abundance of the exploited species depending vulnerability to the new mesh size (Wilson et al. 1991). Even if the available knowledge of ecological relationships is imperfect, our modeling experience suggests such policies will have consistent, long-term impacts. If this is correct it suggests we have the ability to detect gross effects on the system and, equally, the ability to evaluate the success or failure of policies. Although this may be a slow process, it holds out the possibility of learning through experience; in contrast, management interventions (i.e., quotas, etc.) designed to affect the value of the chaotic variables in the system do not appear to provide the opportunity for even the slow accumulation of knowledge through experience.

We turn now to the question of what we mean by ecologically adapted⁸ policies. The idea can be stated in terms of the evolutionary development of the system. The life strategies of each species in the system can be viewed as the successful, competitive adaptation to the other components of the ecosystem. Fishing can create mortality and other effects on the system that defeat the evolutionary strategies of each species or fishing can operate in a way that is roughly consistent with the operation of the system

itself. This suggests that it is not out of place to think of fishing as the introduction of a new predator in the system and fishing management as the problem of defining the capabilities of that predator in such a way that the predatory activity is sustainable. For example, the ability of nets to completely decimate spawning aggregations may very thoroughly defeat otherwise effective anti-predation strategies of prey fish with long term destructive effects upon predator fishermen. A rule prohibiting fishing on spawning aggregations would define away that predatory capability. Gear that was selective by size or species would also move toward defining the predatory capabilities of fishermen. Even licensing rules can have this kind of effect. For example, when fishermen switch from species to species in response to changes in relative abundance, their behavior is consistent with the normal behavior of predators and tends to create feedback that results in larger populations and catches of all exploited species (compared with situations in which fishermen are licensed by species and switching does not occur) (Wilson et al. 1991). Conversely, in an ecologically adapted policy, the definition of the predatory capabilities of fishermen strongly influences the population of fishermen. As conditions in the fishery change, the population of fishermen/predators will change in response. In short, the choice of gear types and the conditions under which they are employed presents another way of defining the parameters of human predation so that it is adapted to the ecology of the system.

Consequently, compared with the conventional approach to fisheries management, a theory of a chaotic fishery suggests (1) that with regard to individual species, the emphasis of management should be on *how* effort is applied (i.e., the characteristics of inputs) rather than on *how much* effort is applied (i.e., the quantity of outputs), (2) that the question of how much effort should be applied is only appropriate to the entire system, and (3) that gross changes in the species mix of the system may be addressable. The principal reasons for these conclusions mainly derive, of course, from the limited nature of the usable knowledge and measurements that we can hope to obtain in a chaotic environment. With regard to individual species this limitation on our capabilities suggests that we may be able to learn, even if slowly, about a set of rules and technology of capture that is consistent with the ecological requirements of the fishery⁹ but that our practical ability to fine tune, or even roughly tune, each species population individually through controls on outputs is severely limited, and probably not even possible.

Finally, we would like to address the question of why all this might be of interest to marine anthropologists. Our basic argument is that the practical management of chaotic fisheries rests upon information and knowledge about the relatively stable ecological parameters of the fishery. This is the kind of knowledge that fishermen can be expected to acquire through observation and experience. Consequently, we are likely to find that a theory of chaotic fisheries is consistent, not only with the perspective of fishermen as Estellie Smith points out, but also with the kinds of institutions and management techniques fishermen are likely to devise for the governance of fisheries. Management based on this kind of knowledge may be not only the most effective way to conserve our fisheries resources, as argued here, but it is also likely to be a management approach that is credible. Credibility, of course, is a necessary requirement for effective governance of fisheries (unless we want to rely upon police state methods). Therefore, if the governance of traditional fishing communities is actually aimed at the conservation of

their resources and if such communities actually do perceive these resources as a chaotic system, then we should find (1) that fishing communities do have the knowledge necessary to develop the appropriate rules, (2) that those rules are based on knowledge of the relatively stable ecological parameters of the system and (3) that the effectiveness of these management regimes – their ability to restrain individual behavior for a collective end – is strongly dependent on the credibility provided by the correspondence of the rule structure and available knowledge of the fishery.

In summary, this paper argues that (1) the knowledge and measurement problems present in a chaotic system limit our ability to learn about and effectively intervene in such systems, especially with respect to short-term specific interventions; (2) that usable knowledge is likely to be restricted to information about the relatively stable ecological characteristics of the system, and (3) that there is a set of management tools appropriate to the management of a chaotic fishery – ecologically adapted policies. These policies *do not* attempt to fine tune the fishery on a year to year basis and, consequently, are not dependent upon timely, expensive and realistically unattainable measurement and knowledge of the current state of the fishery. Instead they derive from a working knowledge of the basic ecological interactions in the system; they are, in effect, the technology and rules that govern fishermen's interaction with the system and, consequently, can themselves be viewed as an extension of the ecological parameters of the fishery. Such policies are long term in nature and are designed to affect the *relative* position of species within the system. And, more importantly from a practical perspective, the information required for the use of these tools is the relatively modest, or at least attainable, knowledge of the nature of the ecological interactions of the system.

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Notes

1. The usual models of fisheries populations are non-linear but have the property of being well behaved; that is, changes in variables have predictable outcomes. It is also true that a number of biologists have known about the potential instability of populations for a long period of time. In their classic work Beverton and Holt (1957), for example, develop phase diagrams that indicate a chaotic region. It is fair to say, however, that the sophistication of many biologists does not carry over into day to day management.

2. Both Smith (1991) and Finlayson (1991) provide numerous references for the reader interested in the literature on chaos theory.

3. Charles Hall (1988) reviews the evidence put forth for standard theory and concludes that there are no instances in the literature in which standard fisheries recruitment curves are validated by available evidence. A similar review of the same evidence, undoubtedly, would have to conclude that chaos theory was not validated either.

4. We call it anthropocentric because it is an idea that is appropriate to a K type species that gives birth to few young and expends a great deal of energy assuring their survival. Fish, with some exceptions, do not follow a similar reproductive strategy.

5. A number of other authors have come to a similar conclusion, not from the perspective of chaos theory, but primarily on the basis of the poor practical experience with the application of standard theoretical approaches. See for example, Peterson (1990), May et al. (1978), Kerr and Ryder(1989), and Apollonio(1988).

6. To give some idea of the magnitude of the problem, a computer program of a chaotic system will produce the same results in two consecutive runs with identical initial conditions only if all calculations are carried out without rounding errors to the 9th or 10th decimal point. In contrast we are probably able to measure fish populations at a point in time only with errors of 30-50%.

7. By conventional management approaches we mean, in particular, approaches that target the value of single-species variables (populations, age classes, etc.) in the system in an attempt to maximize sustained yield, yield per recruit or economic yield.

8. All species may not be desirable for the market but there may, nevertheless, be appropriate allocations of alterations in total effort to compensate.

9. We might suggest, for example, that the Maine lobster fishery, whose continued robust behavior is a puzzle for standard theory, is an instance of a set of rules of capture that, intentionally or not, is consistent with the ecological regime of the fishery. The principal rules include a minimum size of capture, fishing restricted to traps and prohibitions on the landing of 'egged out' females. With minor exceptions, the rules governing this fishery were proposed to the State Legislature by fishermen's associations.

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Book Reviews

LLOYD, Timothy C. and Patrick B. MULLEN *Lake Erie Fishermen: Work, Identity, and Tradition*. Champaign, IL: University of Illinois Press, 1990. xxv+185 pp., preface, map, 105 photographs, glossary, bibliography, index, \$19.95.

Through the presentation of a body of fishermen's stories, *Lake Erie Fishermen* conveys a visceral sense of the eastern Great Lakes commercial fisheries, while providing insights regarding personal experience narrative, the expression of occupational identity, and the evaluation of occupational groups. The clear and concise interpretations of the stories and the sympathetic portrayals of the tellers make the work enjoyable, fruitful reading for a broad audience, from the commercial fishing people themselves, to their sportsfishing and administrative foes, to hardened academic specialists in a variety of fields. Commercial fishers may find the book as useful in the courtroom as teachers will in the classroom.

In 1983, Timothy C. Lloyd and Patrick B. Mullen began interviewing western Lake Erie commercial fishing people about their work. Perceived as 'sympathetic and interested representatives of the outside world...and thus a means for the fisherman to communicate his point of view to that world,' they struck a responsive nerve (p. 172). Through 1985 they listened carefully to the way that active and retired fishers, trap-netters, seiners, and gill-netters, fish house workers, and on a couple of occasions, fishermen's wives, talked about their work. They succeeded in reaching 'all areas of the western lake (Toledo to Vermillion) and all parts of the occupation...fishermen at all chronological stages...and levels of work...' (p. xii).

When Mullen and Lloyd first started out, they fished for a range of traditional expressions, but as their fieldwork progressed they found themselves persistently netting one species: personal experience narratives. Moreover, they noticed that, 'A fisherman talking about his work tends to make his occupational life into a series of stories, and those stories reveal who he thinks he is' (p. 161). Through their stories, the fishermen additionally explained the nature of their work on Lake Erie, past and present, and told what they thought of their work – what they liked about it, what abilities and qualities it took to do the job and do it well, and how their way of making a living is threatened by public misperceptions, government regulations, and competition with others for fish and the lake. So doggedly did the fishermen tell personal experience narratives and, within them, convey shared values and attitudes, that Lloyd and Mullen saw the stories as 'a significant element in their traditional lives,' instrumental in passing on traditional knowledge and in shaping and expressing occupational identity (p. xxv, 2, 161, 164, 173).

In *Lake Erie Fishermen* Mullen and Lloyd present well over 100 of these narratives, from 18 of the 35 people they encountered on boats, at fish houses, and at home. They organized the narratives, and the book, partly according to the main themes that recurred in the stories, feeling that the etic categories they perceived were close to the 'native distinctions (emic) fishermen would make' (p. xii). Thus they grouped the stories in chapters about work technique and custom, the past, local characters, hazards, stereotypes and in-group identity, and conflicts with the public, game wardens, sportsfishers, and pleasure boaters. The volume is not the traditional ordered and annotated collection of key personal experience narratives, however. Rather, Lloyd and Mullen have skillfully interlaced the stories with commentary that interprets them within the thematic and analytic frame of each chapter and provides relevant contextual and biographical information about the tellers. While each chapter is relatively self-contained, all drive at the same basic point – how the fishers' personal experience stories express occupational identity as well as a multiplicity of subordinate individual and group identities. Because the contents of each chapter are of interest from a number of analytic and thematic perspectives, I have chosen to summarize them in some detail below.

The brief preface swiftly covers the pair's fieldwork methods and handily summarizes the bodies of scholarship from which they draw, while furnishing good photos of the people whose stories

they present in the volume. For readers not fascinated by the intricacies of fisheries biology, economics, politics, and technology, Mullen and Lloyd offer a terse synopsis of contemporary Lake Erie commercial fishing and its history, in their Introduction. Similarly in the first part of the following chapter, they compress descriptions of the three current types of commercial fishing techniques into four pages of text surrounding 46 pages of 90 photographs of fishing boats, equipment, locations, and men at work, mostly in modern times.

Respectfully, Lloyd and Mullen begin the presentation of fisher stories in the first chapter with ones that stress the intelligence, dexterity, strength, and hard work required to do a good job. The narratives reveal aspects of the fishing process that fishers consider most important: designing, making, mending, and setting nets, navigating, locating fish, and predicting the weather. Notably they confirm the observational acuity that is so common to professional fishers elsewhere: the ability to judge distances and see minute details across vast stretches of water, to evaluate and know the lake bottom, and to interpret the behavior of water, wind, fish, and birds. Moreover, the stories affirm the good judgment, pragmatism, and aesthetics that fishers must exercise, and the pride they take in a job well done. Importantly, Mullen and Lloyd observe that even in this occupation that seems so removed from an artistic arena, art is integral to the job. Fishers do work 'better than it needs to be done' in response to:

...the deeper human need to make 'aesthetically satisfying patterns' that is the root of all art... creating such work goes beyond achievement in technique. It puts technique in the service of personal emotion and occupational pride (p. 67).

As Lloyd and Mullen wind up this chapter, they touch upon a few superstitious behaviors and connect the lake fishers' lack of an extensive magical folk belief system with the relative safety of their jobs compared to offshore ocean fishers. They also note the involvement of women in the occupation, but more in providing food for men with legendarily huge appetites than in contributing substantially to net work, fish processing, maintenance of a shoreside base, cultivation of incipient fishers, and the overall perpetuation of the occupation.

The second chapter, 'The Past,' continues to address the notion of what it takes to be a good fisherman, but particularly through retired fishers' perceptions of their pasts. Classic 'starting-out stories' that establish a fisher's pedigree – often through family connections – overlap with 'golden age' stories that idealize past fishing compared to the present 'fall from grace.' For the retired Lake Erie fishers the past was a time of clearer water, more fish, and less governmental restriction, tempered by more primitive technology and harder work. While fishing was better then, it was by no means easier and it required tougher, more dedicated men. Even one contemporary fisher echoed this sentiment, voicing an adage current across the Great Lakes: 'The old days, we had the wooden boats and iron men. Now we got iron boats and wooden men' (p. 89).

In the third chapter, through stories about the notable people in their world, fishers again tell what kinds of personality traits, personal habits, abilities, and attitudes towards work they most highly admire. Two of the characters provide a good contrast of the extremes of desirable and undesirable characteristics. Fishers use the eccentric Jib Snyder both to define the negative fisher stereotype of the smelly, dirty, lazy, alcoholic and marginal type, and to distance themselves from the unseemly portrayal. In contrast, through stories of Clifford Baker, a slick, shrewd, and successful operator who evaded the law while running liquor across the lake to Canada during Prohibition, fishers not only specify positively-perceived qualities, but glorify an outlaw hero image with which many identify. Mullen and Lloyd liken Baker to well-known American outlaw heroes and explain that the fishers find the type so appealing because they see themselves as 'working men made outlaws in some sense by the times' (p. 112).

Stories in the fourth chapter, 'Hazards,' again address idealized fisherly attributes, particularly the ability to maintain control in the face of danger. Fishers paint themselves as gritty outdoorsmen hardened by exposure to extremes. Survivors, they tell about narrow escapes, more of people who

made it than of those who did not. They explain classic encounters with freighters or foul weather coupled with inadequate equipment or boats encumbered by large catches. A good number of the stories are distinctive to the Upper Midwest-Great Lakes region as they revolve around troubles with ice, not only the problem of boats and equipment icing up as on the open ocean in polar latitudes, but of navigating around, through, and over ice and of traversing frozen inshore waters by car or truck in order to fish through the ice on foot.

The last two chapters of stories return to some of the themes discussed earlier, but deal more directly with images of fishermen. Chapter Five, 'Identity,' includes narratives that show 'the way fishermen see themselves but also the way other people's views influence their self-image,' (p. 125) and it specifically treats negative and positive stereotypes. Demonstrating their cognizance of outsiders' negative perceptions of them, the fishers tell stories that counter or modify the image of the lazy, dirty alcoholic. They emphasize drinking habits that do not interfere with work, voice attention to cleanliness in an unavoidably dirty job, and advocate the American work ethic, promoting a positive view of themselves as responsible, hard workers. 'In the blood' stories and accounts of rejecting factory jobs that represent confinement (by buildings, routine, and management), affirm their addiction to fishing and their predisposition for the job.

The following chapter covers narratives that define the fisher more indirectly, by contrast with rival groups. Lloyd and Mullen invoke the concepts of oppositional and differential identity and show how fishers fix their position and boost their own image in stories that emphasize the negative characteristics of game wardens, sportfishers, and pleasure boaters. The narratives tell about the unfairness of game wardens, their uneven enforcement of laws, and their favoritism towards sportfishers. They point out both wardens' and sportfishers' ignorance of fish and the lake and the triviality and unjustice of many laws. In contrast, they promote the fisher's cleverness in outwitting wardens and his superior morality in beating the system successfully through the legal process. Mullen and Lloyd encountered such a wealth of game warden stories, they speculate that narrative offers one of the few ways that fishers can legitimately express intense hostility toward their foes.

In the final chapter, Lloyd and Mullen once again touch upon 'golden age,' 'starting-out,' and 'in the blood' stories as well as positive and negative stereotypes as they review, in the light of relevant scholarship, the many types of identity, and the oppositional and differential dynamics, that Lake Erie fishers express in their personal experience narratives. They reiterate how an individual subscribes to an overall identity as a commercial fisher, yet defines himself and his peers more specifically depending on 'age and the corresponding stage of his occupational life, his social and economic class, his family background, his personal traits, and his religious, ethnic, and family values from outside the occupation' (p. 165). They stress the interdependency of individual and group identities, the multiplicity of identities that any one narrator projects, and the flexibility of a person's identities throughout the life cycle.

In conclusion, Mullen and Lloyd see commercial fishers faced with many of the same difficult circumstances as loggers, oilmen, and others whose occupations are based on natural resources. They suggest that, as Lake Erie fishers have faced increased opposition and the potential extinction of their line of work, their identity has become stronger – and the expression of it greater:

The personal experience narratives and occupational commentary of commercial fishermen on western Lake Erie are thus a symbolic manifestation of their struggle to maintain personal and occupational identities in the face of social changes that may be destroying the occupation itself (p. 172).

Lloyd and Mullen modestly claim that 'The heart of the book is made up of the fishermen telling their own stories in their own words with some description of the contexts by the authors' (p. xxiii), but clearly the thrust of their presentation is to address the verbal expression of occupational identity and the formation of identity through stories. In this regard, Mullen and Lloyd have contributed solidly to the folkloristic study of identity and the analysis of workers' culture by showing how a

range of identities are expressed in a body of occupational narratives and by elaborating types of identity and the dynamics by which identities are shaped. By not singling out commercial fishers as necessarily distinctive (as they usually are), but by likening them to other kinds of American workers, Lloyd and Mullen have made their observations on identity hypothetically applicable to the narratives of any occupational group, indeed perhaps of any group.

Yet because of the subordination of the commercial fishing material, questions remain regarding the distinctiveness of commercial fishers as an occupational group. There are characteristics of commercial fishing as an occupation and commercial fishers as personalities that may account in part for the heightened paranoia, pessimism, and self-preservation that would lead to a greater incidence of personal experience stories and the elevated expression of identity among them. That is, without comparative evidence to conclude otherwise, Lake Erie commercial fishers 50 to 100 years ago may have projected similar concerns and portrayals. Without further inquiry into the nature of commercial fishing and its practitioners, Mullen and Lloyd's correlation between the expression of identity, the prevalence of personal experience narratives, and the threatened status of the occupation may be too simple an equation.

Lloyd and Mullen nevertheless have contributed to the evaluation of commercial fishing culture. Citing 'the relative lack of attention paid to individual expression in the existing work on fishing cultures' (p. xxii), Mullen and Lloyd excuse themselves from the more exhaustive, ethnographic approach characteristic of fishing studies. While they may be too quick in reasoning that more thorough ethnographic work has been or is being accomplished, their book is like a distillation of an ethnography. It captures in large part the essence of what it is to be a Lake Erie fisher. In fact, to a great extent the book encapsulates what it is to be any commercial fisher who operates on a similarly modest scale on the Great Lakes or in other parts of the United States.

Because their focus is not on divining the nature of fishing as a kind of work that attracts certain types of personalities, prescribes certain behaviors, and provides certain kinds of encounters with the elements, material world, and rival groups, Lloyd and Mullen do not make the book as comparative across fishing (sub)cultures as it could be and accordingly, they do not attempt to establish either a 'job classification' or a set of topics that commercial fishers repeatedly bring up. Thus some topics are missing or suppressed, such as narratives about boats and engines. In one story, for example, Mullen and Lloyd delete a litany of boat names that is so characteristic in American commercial fishermen's discourse. While the connection between a fisherman's identity and the calibre of his equipment is present in the volume, Lloyd and Mullen appear to have overlooked its significance. Fishermen give boats – especially larger ones like gill-net tugs – particular identities, they identify past periods in their lives by which boats they were working at the time (just as a mother may connect past events to the births of her children), and they assign identities to themselves and their peers according to the characters of their boats. Equipment is, after all, critical to the act of fishing, and the ability to manipulate it successfully is integral to the fisher's skill. It is not surprising that fishers pride themselves both on their ability to handle equipment and on the nature of the equipment itself – boats especially. Even so, the book is a remarkable benchmark of the kinds of stories that commercial fishers do tell, and the kind of work that small-scale commercial fishing is in the United States. It also offers a timely, cautiously sympathetic summary of the kinds of problems facing commercial fishers across the country.

While Mullen and Lloyd do not develop the question of why personal experience narrative is the predominant means of verbal expression among (these) commercial fishers, they certainly do suggest the importance of narrative in these men's lives, and by extension, in ours. They present fishermen's stories that serve a variety of functions. On the most elemental level, some appear to sublimate pent-up hostilities and frustrations. More aesthetically, others help order a person's life, turning the day-to-day into history and art, as Edward D. Ives suggests so eloquently on the book's dust cover. Yet others work conservatively and socially to pass on and perpetuate traditional lore and to project and safeguard a shared experience.

This body of stories, and the clear interpretations Lloyd and Mullen give them, will prove valuable and suggestive for classroom use, whether the subject is narrative, occupational culture, or expression of identity. True to oral expression, however, language in the narratives is sometimes both collapsed and esoteric. At times referents and terms are not abundantly clear (even to an outsider familiar with the occupation), and neither the glossary, photographs, nor the minimalist description of fishing equipment and techniques can adequately clarify matters. Rather than confirm the opacity of commercial fishing as an occupation or of commercial fishers as narrators, however, this lack of communicability can be attributed to the limitations of the medium. The written word, diagrams, and still photography can no more flesh out work technique and the occupational context than they can capture dance. Thus for classroom purposes, a videotape of Great Lakes commercial fishers at work would ideally accompany the book (and the book would feature a filmography of the ever-growing number of films and videos that represent the subject).

While outsiders may stumble occasionally over the 'private code' in the narratives, insiders should have no trouble understanding their own stories nor Mullen and Lloyd's plain writing and down-to-earth interpretations. Beyond the usefulness of this volume to folklorists, the book should function among Lake Erie fishing people and fellow commercial fishers as a welcome testimonial to their concerns, presented in such a way that it offers insight as well as a powerful political tool for communicating to outsiders and engineering social change.

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VAN DER ZWAAG, David L. and Cynthia LAMSON (Eds.) *The Challenge of Arctic Shipping: Science, Environmental Assessment and Human Values*. Montreal: McGill-Queen's University Press, 1990.

Commercial interests have historically taken a number of navigators into arctic waters. While these commercial pursuits continue to grow in scope and number, government officials become more dependent on arctic waters and resources to develop national interests. As a result of this increased activity, a primary objective for commercial entrepreneurs, policy makers, and cooperating scientists, has been the development of safe, dependable, year-round shipping in the Arctic. But, because of the unknown effects that year-round navigation may have on the region and, conversely, the unknown repercussions that the gruelling winter months may have on shipping, year-round arctic navigation remains experimental.

Beyond the limitation of knowledge about continuous arctic shipping, other obstacles exist. First, there are drawbacks in the scientific techniques available for learning more about year-round navigation and the region. Second, there are disagreements among scientists and decision makers about which technologies and approaches would be the most appropriate for mastering the information needed to expand arctic shipping and to conduct necessary environmental assessments. All of these limitations result in a time of uncertainty, during which a number of actors with opinions about year-round arctic navigation draw upon their own interests, priorities and values to influence decisions about shipping and environmental assessment policies.

The Challenge of Arctic Shipping illuminates the problems of uncertainty operating in northern shipping ventures. It is a collection of essays written by an impressive array of experts with concerns and opinions about navigation in the region. Through the use of specific examples involving the effects of shipping or attempts to apply research to decision making, the authors have provided readers with differing, and often conflicting, viewpoints about the shipping enterprise.

In part one of the book, the link between shipping and scientific inquiry is explored. First, Cynthia Lamson, Associate Director of the Oceans Institute of Canada and one of the book's editors, provides a sweeping account of the history of arctic marine science (broadly defined as the pursuit of

knowledge in the Arctic) since the time of Eric the Red to the present. Then, other authors give attention to: (1) attempts to understand the impact of proposed shipping activities on the physical environment and the effects of the environment on these activities; and, (2) the scientific quest to understand the implications of year-round navigation on marine mammals and seabirds in the Arctic. Robert Lake and Brian Smiley, both involved with research at the Institute of Ocean Studies, offer two of the volume's strongest entries in their respective chapters on the physical environment and sea mammals. Both point out the peculiar limitations of data and data collection in the Arctic, such as marked seasonal and human biases affecting information, and varying quality of techniques for collecting and processing data. Smiley presents the most reasonable and fundamental of recommendations for improving science: an honest evaluation and pursuit of the values that foster good research. These include patience and trust among biologists, oceanographers, and indigenous people who collect information about the Arctic; commitment and funding for research and project monitoring; and education of the public and scientific community about marine life and the ocean.

Part two presents various perspectives on ways in which Arctic shipping should be managed according to groups that have stakes in the region. These are the viewpoints of the oil and gas industry, indigenous peoples, and the governments of the Northwest Territories and Canada. Robert Dreyden of Chevron Canada Resources and spokesperson for the petroleum industry, complains that the environmental review process for arctic matters 'resembles closely a carnival pool of balls,' in which young children clamber about in three to four feet of small coloured balls, without ever making any significant progress (p. 103). In other words, the process offers few benchmarks and standards with which those involved in arctic navigation can measure progress. He feels that the oil and gas industry is singled out for special treatment regarding marine transport since it is required to undergo environmental review which often delays or prohibits industrial shipping, while research and government-owned vessels are not subject to such scrutiny. Therefore, the review process represents a political and economic rather than a scientific enterprise. Conversely, in another chapter, a representative of the federal Environmental Assessment and Review Process claims that this process has contributed much to the scientific and decision-making regime of arctic shipping. He adds that although some concerns remain about the process, it is one of the most credible internationally. Meanwhile, representatives of the government of The Northwest Territories and indigenous people of the region offer their views on ways in which their respective groups could and should participate in decision-making concerning arctic shipping and the environment. The conflicting visions and recommendations for solutions presented in part two make one thing clear: the fundamental issue concerning arctic shipping is not about finding the most appropriate technologies for learning about the effects of shipping on the region; it is about social control. That is, the group or coalition of groups that can control decisions about shipping, can also direct the nature and pace of the development of the Arctic region.

Part three takes into account that project- or issue-based approaches to assessment and decision-making may do more harm than good to the region in the long run. Its authors suggest that it 'is possible to reconcile ethical and political considerations through an appropriately designed system that draws on a wide-range of science-based experience in ocean development and management' (p. 217). Such consensus-based decision making would surely lead to 'Kingdom Come,' according to co-editor, David Van der Zwaag. He suggests that a number of 'emerging signposts,' such as reasonable approaches to assessing risks to the environment and public education about the strengths and drawbacks of such approaches, indicate that decision makers may be heading in the right direction; yet, 'Kingdom Come' is still a distance away.

The Challenge of Arctic Shipping cogently presents the probabilistic nature of the arctic shipping enterprise. Although it nicely lays out the various conceptual frameworks of actors with high stakes in the region, it could be more deliberate in its analysis of the power relationships among these parties. While it is important to understand various perspectives, it is equally important to learn ways of balancing power among interest groups before actual consensus-building can occur. Had

the editors made provisions for sociological theory or social science research to provide the basis for some of the discussion, issues of power dynamics may have been attended to more thoroughly. The final three chapters do present solid recommendations for solving some areas of disagreement among interest groups through risk analysis and various management strategies. Van der Zwaag, especially, offers a sensitive discussion of the subjective realities involved in risk analysis and the limitations that these factors place on 'objective' decision-making. However, these suggestions could have been anchored more solidly in a broader literature about power and decision making in large organizational contexts. For instance, anthropologist Mary Douglas and her colleague, Aaron Wildavsky, support a 'cultural theory of risk perception.' They maintain that ideas about environmental hazards are culturally determined and reflect moral, economic, political, and other subjective factors operating among decision makers and disclose forms of social organization within which decisions are made. Further, Van der Zwaag's recommendations could have been enhanced with a deliberation on lessons learned from other large-scale change and decision making processes which have occurred in other regions of the world.

The book, also, would have benefitted from an anthropologist's view of the effects that shipping and industry could have on indigenous people of the Arctic region. Although readers are provided with an account of Inuit concerns about the management and expansion of navigation, (e.g., concerns that rapid change will disrupt the lives of young people, worries that people will leave and be alienated from the community), further consideration of ways that shipping has changed or may change Inuit culture would have been useful. Ironically, part one of the volume is devoted to the study of effects that arctic shipping has had on non-human life, with no discussion about what is known, or what may be learned, about the effects on humans. If approaches for studying the impacts of shipping on indigenous people have not been developed, this volume might have provided the opportunity to introduce such plans.

Despite its exclusion of social scientists from the discussion of social dilemmas, *The Challenge of Arctic Shipping* is an important book for those interested in navigation, research and human values. It artfully frames the most important public policy and management issues facing the region; offers sensitive insights to the limitations and values of science; and provides compelling recommendations that, if followed, could improve the decision-making system while enhancing scientific input into the environmental process. Further, it offers a thorough case study from which managers and social scientists can draw in their pursuit of understanding human behavior in the face of uncertainty and large-scale institutional change. Not only Canadians, but a watchful world should pay close attention to the strategies and consequences that evolve from the circumstances described by these authors. The outcomes of the Arctic experience will hold lessons in policy and management for other nations and people.

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RUDDLE, Kenneth and R.E. JOHANNES, (Eds.) *Traditional Marine Resource Management in the Pacific Basin: An Anthology*. VHV (UNESCO/ROSTSEA, Contending with Global Change, No. 2). Jakarta (Indonesia): Jln. M.H. Thamrin No. 14, 1989. vii+410 pp., maps, figures, tables, b&w photographs (paper) n.p.

This useful volume is a collection of 15 papers (plus a brief Introduction by the editors), all but 5 of which were originally published in the early 1980s but, the editors point out, warrant reissuing since there has been a continued demand for the materials.

In this region of the world, as everywhere else, there is increasing production of fisheries management plans. But this region of the world, unlike others, contains many fisheries that are only now becoming part of a capital-intensive exploitative approach (indeed, some, just as recently, have only now entered a commoditization system). As such, there is a more urgent need to record the

wide variety of indigenous fishery management schemes that exists; not only do such data provide alternative ways of managing nature (to which Western-oriented managers are ethnocentrally blinded) but, more importantly, these local systems are frequently the basis for resistance to and intended/unintended subversion of both development management schemes. Thus, the editors give, as the raison d'être of the volume, the need 'to contribute to the growing body of documentation on traditional systems of fisheries management' (p. 1). All well and good, especially considering the excellence and broad utility of these papers despite their regional specificity. However, one wishes that the editors had labeled themselves as 'compilers' since, in point of fact, that is really what they have done. Aside from a tantalizing and brief comment concerning their plan for a future volume (see below), their Introduction is simply brief abstracts of the papers, listed as in the table of contents. Further, if that table of contents has any thematic ordering, it escapes me; e.g., papers dealing with the same (or reasonably so) geographic locale, type of fishery, or theoretical issue (such as accommodation to development) are in widely separated areas of the volume. In short, the 'editors' seem to have done little more than collect a group of previously-published papers, add some new studies, and publish them in a single volume. It's this sort of cavalier 'editing' that has tended to give such publications a second-class standing in the scholarly world – and more editors deserve to be taken to task for such performances.

This said, let me reiterate that, with only two exceptions, the papers are, absolutely first-rate. It's impossible within these space constraints to do justice to individual papers (most of which average 30-35 pages) but each one of them constitutes an invaluable resource for fisheries scholars and managers, whatever their own research loci or purpose. The geographic range is wide: Micronesia, Melanesia, Polynesia (including Hawaii), Japan (plus Okinawa), Singapore, northern Arnhem land (Australia) and looks at 'tribal' as well as peasant and urban maritime communities.

To briefly summarize, the reprinted papers are: Maritime claims by aboriginal groups in northern Australia [reprinted but revised] (S. Davis); Traditional management and conservation of fisheries in Kiribati and Tuvalu atolls (L.P. Zann); Territorial regulation in the small-scale fisheries of Itoman, Okinawa (T. Akimichi); Do traditional marine 'reserves' conserve? A view of the Indonesian and New Guinean evidence (N.V.C. Polunin); Tokelau Fishing in traditional and modern contexts (A. Hooper); The continuity of traditional management practices: The case of Japanese coastal fisheries (K. Ruddle); A traditional base for inshore fisheries development in the Solomon Islands (G.B.K. Baines); Marine resource use in Papua New Guinea: Can Traditional concepts and contemporary development be integrated? (A. Wright); and Aquaculture in ancient Hawaii (B.A. Costa-Pierce). The new papers are: Keeping the Sea: Aspects of marine tenure in Marovo Lagoon, Solomon Islands (E. Hviding); Traditional marine resource management among the Nenema of Northwestern New Caledonia (M.H. Teulieres); Assessing traditional fishing rights systems in the context of marine resource management: A Torres Strait example (R.E. Johannes and J.W. MacFarlane); Adapting traditional marine tenure and management practices to the modern fisheries framework in the Cook Islands (N.A. Sims); and The traditional management of the *Kelong* in Singapore (C. Chou G.H.).

The foci of the papers vary considerably. Some emphasize the range and depth of the indigenous knowledge of marine resources; others concentrate on the way in which resources are managed – 'traditionally,' until recently and as the traditional system accommodates to change, or in terms of current attempts to control fishing according to Western management techniques. Controls range from taboos grounded in religious beliefs and social practices that rely on relatively informal social pressures, through gear restrictions and ecological constraints, to principles of catch distribution and market dynamics.

There is an extraordinary range of tenure arrangements discussed – ranging from family/lineage/clan, through village councils (and, more recently, cooperatives or associations) and chiefs, up to regional/state legal arrangements. In some cases, the sea and land tenure arrangements are coordinated; in others, they operate in distinctive (even, it seems to me in some cases, rather disjunctive) ways. The contributors are not all in agreement as to the explicit functions of either tenure or any other 'management' system; one underlying question is the extent to which such

systems are designed to conserve resources – or maintain with relative stability whatever the elders, chiefs, elite, or other figures with public power determine is the proper status quo. Similarly, there is disagreement as to whether such ‘traditional’ systems (and my use of inverted commas indicates the extent to which one must be suspicious of how ‘traditional’ such systems really are) are totally disconsonant with, impede but cannot resist, or can be utilized to assist in the introduction of current development or management schemes. Given the wide range of resources exploited, economics utilized (e.g., lagoon, inshore, estuary), type of gear employed, organization of work groups, and utilization (e.g., for subsistence vs. commercial export), such differences are, to some extent, to be expected. I would have liked to see the editors, however, address the issue of the extent to which such analytical disagreements might be the result of these kinds of differences (as well as the historical conditions that vary for each study) versus a fundamental methodological or theoretical schism. The editors do indicate that another volume (representing the next stage of the on-going research) is in preparation and it will have the aim of:

distilling general principles underlying sea tenure systems, as well as highlighting the processual aspects of sea tenure in their continual adaptation [and] attempt to evaluate system comparatively and measure their performance, to provide options for contending with global change (p. 1).

That's welcome news – but, as already noted, the editors might have seen fit to provide some of these principles, comparisons, evaluations, measurements and options in this collection of papers.

To sum up: I strongly recommend this collection regardless of areal or topical focus. Though the title might lead one to think the material is narrowly focused on ‘traditional marine resource management,’ the papers provide material on technological and socioeconomic change, on development and decline in particular fisheries, on cognitive views of nature (and the problems that can arise when attempts to manage fisheries are made by those with differing views of this), on the extent to which management is always embedded in a complex sociocultural matrix and subject to a wide range of equally complex ecological networks, and much more. Anyone working in fisheries would be wise to order a copy.

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NIEUWENHUYSEN, Olga. *Angels with Callous Hands. Children's Work in Rural Kerala (India)*. Boskoop: Macula, 1990. 306 pp. (Ph.D. thesis, Vrije Universiteit, Amsterdam).

In the past decades numerous articles and books have been published on child labor in Third World societies. The greater part of these studies are dedicated to a particular aspect of this phenomenon, such as its moral, legal, demographic, cultural, or economic importance. A few, however, are characterized by a more holistic approach. Nieuwenhuys's study on children's work – a term she prefers to child labor – in rural Kerala fits into the second category. The author takes the view that the assumption that children's work in peasant societies is morally neutral is unfounded. To put it more sharply, she questions the idea that work done by girls and boys in rural areas is ethically unobjectionable because of its supposed economic insignificance. She wants to clarify precisely what kind of work children do and how these activities are perceived and valued. The questions she poses and tries to answer relate to the contribution of children's work to maintaining the household and the local and regional economies, the relation between domestic activities and remunerated work, the lack of appreciation for children's work in the economic field, the importance of seniority and gender for the organization and social evaluation of child labor, and, last but not least, the combination of and relation between schooling and work.

The study moves from the local level, the village of Poomkara (a pseudonym), to the regional and the federal level in the state of Kerala. Data about the village were collected during anthropo-

logical fieldwork, those pertaining to the wider society mainly from secondary sources. The fieldwork took place from 1977 to 1980 and during a part of 1983. General information on the local community was collected by such means as a census, a prolonged budget study, production figures, oral histories, and informal talks. Specific information on the visible and ‘invisible’ work of children was gathered through systematic observation and in-depth interviews. The length of the stay in the field and the need to use such varied techniques points to the complexity of the subject.

The study consists of three parts. The entire first part deals with the coastal village of Poomkara (4,500 inhabitants) which lies not far from Kayamkulam in the Alleppey district. It starts with a description of the local community, which consists of Muslims (71%) as well as Hindus, and a description of the importance placed on education. As elsewhere in Kerala, schooling is highly valued, and schools are frequented on a large scale. However, education is not an alternative to children's work. On the contrary, for the poor who constitute the greater part of Poomkara, the children's contribution to the family's livelihood is indispensable. Consequently childhood has, as Nieuwenhuys says, two faces: on the one hand the hours spent at school, on the other the, often equivalent, time allocated to work. The greater part of a child's day is taken up by both of these activities. When there is increased competition between the two types of activities, as often happens during secondary education, then the number of drop-outs from school rises sharply.

In the first part, we also get a general picture of the horizontal and vertical ties between relatives, members of different castes, classes, generations, and ethnic groups that arise to retain or secure a means of livelihood, and which result in the work claims that are placed on the children. Approximately 42% of the local families are almost landless, while 35% do not possess more than one acre. As a result, the majority of the households depend wholly or in part on non-agricultural activities. In poor households, boys and men spend the same amount of time on domestic chores, while girls, on the average, spend two-thirds of the time of adult women. As for paid labor, boys work as many hours as women. Also wealthy families depend on supplementary incomes. They, however, have the option of investing in continuing education for their children.

The core of part I, if not of the whole book, is the chapters on children's work in artisanal fishing and coir making. They contain an elaborate explanation of the role (generally boys) in catching and trading fish and of the participation (generally girls) in the predominantly domestic production of coir yarn. For centuries fishing in Poomkara has been practiced in two ways. During high season (April-October) one fishes offshore with a large encircling net; in the off-season, people fish with a large beach seine. That the fishermen are poor can be seen from the fact that they do not own a single piece of fishing equipment. All the boats and nets are in the possession of a few wealthy villagers. In Southeast Asian countries one often sees that fishermen control part of the capital goods which then entitles them to all kinds of rights. Here fishermen are entirely dependent of the caprices of their patron. Furthermore, children's work is the sheet anchor of the greater part of the local fisheries, although it is not recognized as such: ‘Most often, however tangible the returns of these activities are, what they do has no name’ (p. 91). For a pittance teenage boys do all kinds of odd jobs on the beach or participate in the shore fishery. By these means they provide for their own subsistence, earn their school fees, and contribute to the family sustenance. Especially in slack periods, children's work is a cheap alternative for adult fishermen.

Children also contribute substantially to the diet and income of their families by small-scale fish vending and foraging. The choice between fishing and trading seems primarily governed by inclination. Generally speaking, trading is more highly regarded than fishing, and poor parents will first try to encourage the entrepreneurial capacities of their sons. Foraging fish, that is to say picking up fallen fish, begging for a small portion, or pinching fish is a widespread custom in Asia. Nieuwenhuys not only demonstrates its economic importance, but also dwells at length on the social and cultural significance of this practice.

What children do outside of school or instead of school is to a large degree defined by gender and seniority. Boys are sent out to support themselves and their relatives. Girls primarily perform

subsistence and commercial activities within the domestic circle instead of income-generating activities outside the household. Age is a decisive factor in determining what kind of work is undertaken.

In the second part of the study, the results of the research on children's work in fishery and coir-making in the village are compared with information gained from secondary sources to learn how representative it is of those sectors in the whole of Kerala. What has been found for Poomkara is confirmed: the domestic and traditional commercial economy of Kerala depends to a great extent on rural children's work. What is seen in terms of labor and property relations on a local level for fishery, for example, is parallel to the relations in the society at large in spite of all kinds of technological and cultural differences. Nieuwenhuys also considers the influence of modern fishing techniques on artisanal fishing. Unlike what Galtung (1980) and others think, she points out how these sectors are highly interrelated. The increasing commercialization and modernization of fishery in Kerala has even resulted in an expansion in the traditional ways of fishing, and with it an increase in children's work. Of special interest are her ideas about the direct relationship between the increase in children's work and the way the traditional and capitalist modes of production are attuned to one another. Unfortunately she relies on the rather dogmatic ideas of French Marxist anthropologists concerning the interaction of modes of exploitation instead of the for this context much more relevant and profound theory of Wolf (1982:73-100).

The subject of part III is the relationship between children's work and education in respectively the colonial and post-independence period. First, the influence of international, national, and regional ideological and socio-economic developments for changes in opinions about schooling and children's work is made explicit. Second, the compatibility of education and work for children of the poor is explained. All emancipation ideas and movements notwithstanding, there still exists an enormous gap with regard to education and children's work between the ideal and reality. The increased amount of schooling has hardly liberated children from domestic and commercial tasks. Nevertheless, education contributes to rising self-awareness and critical capabilities of the 'angels with callous hands.'

Nieuwenhuys has written a very interesting book. It is replete with data and ideas on a topic about which until now too little has been published. However, it is regrettable that the central questions are not worked out in a more systematic and consistent way. More than once the author gets sidetracked which, however interesting, distracts from the argument. It is also a pity that (in the book at any rate) the results from the fieldwork and those from secondary sources are not equally balanced. Relatively more attention is paid to events and developments on the higher levels of society than on the local level. Further, the analysis of children's work would have had even more significance if the findings from the study on the society at large were tested more explicitly at the village level. In that way the interrelation between developments on different societal levels would have received more emphasis. Finally, a chapter on recent developments would have made the study more up-to-date. However, these few shortcomings do not offset the merits of this study, which should be read by everyone who is interested in children's work and India.

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VAN GINKEL, Rob *Elk vist op zijn tijd: Een historisch-anthropologische studie van een Zeeuwse maritieme gemeenschap, Yerseke 1870-1914. (Out With the Tide: A Historical-Anthropological Study of a Zeeland Maritime Community, Yerseke 1870-1914)*. Zutphen: Walburg Pers, 1991. 143 pp. ISBN 90-6011-716-6.

The economic and social transformation of a maritime community in the Netherlands is the focus of this historical ethnography by Rob van Ginkel. Originally researched as an MA thesis at the University of Amsterdam, this attractively produced volume is highly readable and is also enlightening for its many period photographs. In the absence of an English translation, however, it is not likely that scholars outside the Netherlands and Belgium will be able to benefit directly from van Ginkel's work. For this audience I am happy and honored to produce a brief review.

The village of Yerseke in the southern province of Zeeland, the Netherlands, is the site of van Ginkel's primary research. During the period in question, at the end of the 19th and the beginning of the 20th centuries, the economy of Yerseke was transformed from one centered on open-access fishing to one centered on the cultivation of oysters and mussels. The difference between being 'hunters of the sea' and 'farmers of the water' is a substantial one, van Ginkel asserts in the opening pages of his essay. The transformation from one mode of subsistence to the other in Yerseke, with all the concurrent changes in the social and cultural life of the community, is traced through six succeeding chapters. The essentially chronological organization of the book provides a logical narrative of the changes under study.

Despite a lengthy history of recurrent flooding, common to many coastal areas of the Netherlands, the position of Yerseke and neighboring Yersekedam on the Eastern Scheldt (an inlet of the North Sea) provided a rich habitat with substantial possibilities for exploitation of marine resources. By 1870 the populations of Yerseke and Yersekedam totaled some 1200 individuals, with a fleet of nearly fifty boats. At this time specialization was the exception rather than the rule, most fishermen harvesting various mussels, oysters and fish as became available. Likewise, though periodically laws were passed regulating the areas in which it was possible to fish, in general the sea remained a commons for all to make use of. In the off seasons the fishermen of Yerseke earned a living through agricultural labor and the transportation of sugar beets. Despite these varied occupations, in van Ginkel's assessment Yerseke must have been among the poorest fishing communities in the Netherlands as of 1870.

It was the shift from open collection to the cultivation of shellfish on prepared beds that created, as van Ginkel says, 'a Zealand Klondike' in Yerseke. In the first fifteen years of shellfish cultivation the population grew to over 2700, and by the end of the 19th century had reached 4333, with 160 boats. In addition to demographic changes, within Yerseke itself the agricultural realm was declining as the focus on maritime activities grew stronger. Houses and schools were built, Yerseke acquired a post office and telegraph station, street lighting was installed, and rail lines were laid. In short, the community of Yerseke within a generation moved from being a poor fishing village to a respectable town with a solid infrastructure. Connections to the outside world were strengthened through the export of shellfish to various European nations.

Not all benefitted equally from the changes, however. While there were 'oyster barons' who grew wealthy from the 'gold in the water,' others were unable to profit from even 'a drop of the golden rain.' Though immigrants were coming into Yerseke in substantial numbers, the unemployment and underemployment of laborers within the community resulted in many leaving for the United States, where they clustered in the town of West Sayville. Women and children worked long hours in the shellfish beds, but still many households in Yerseke were classed as 'poor' according to administrative and church records. In addition, the increase in various kinds of crimes in Yerseke and Yersekedam resulted in their being dubbed 'Sodom and Gomorah' by orthodox Calvinists. By

1914, the population of Yerseke had dropped down to just over 4000, and the social structure gradually came to resemble that of other communities in the region. The concluding section of the book traces Yerseke's eventual integration with the Netherlands nation as a whole.

The greatest strength of van Ginkel's study, which I have only sketchily summarized here, is its synthesis of local with regional, national, and international factors. Appropriately rejecting anthropology's traditional tendency to portray village communities as isolated units, the author attempts at every point to tie Yerseke into the broader economic and political scene. Empirical details are provided which could enable a reader to come to his or her own conclusions about van Ginkel's analysis.

A second strength of the study is its copious use of archive materials, particularly photographs, which lend an appealing concreteness to the picture of life in turn-of-the-century Yerseke. For Dutch readers, background information on these materials is not as necessary as it might be were the book written with a more international audience in mind.

If the book has a weakness, it is in my opinion the relative lack of attention paid to the realm of ideas, beliefs, and values. The focus, perhaps necessarily, is restricted to economic, demographic, and social factors. Though van Ginkel's stated intent is to chart a course between idealist and materialist standpoints, the overall tone of the volume is clearly tilted toward the latter. One might also have appreciated a glance toward life in Yerseke today and/or a bit of comparison with other villages that went through similar boom periods. Since van Ginkel has consciously chosen to restrict himself to Yerseke 1870-1914 only, however, one can hardly hold that against the book. Perhaps we will see more of van Ginkel's work that will tie this research to broader theoretical issues.

In short, this is a thoroughly researched, if specialized, piece of work. It will be most useful to scholars pursuing issues of rapid economic change in maritime communities, and less useful to those interested in more general ethnographic portrayals. Hopefully a translation will eventually appear so as to make this study accessible to a wider academic audience.

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SLIGGERS, B.C. & A.A. WERTHEIM (Eds.) '*Op het strand gesmeten*'. *Vijf eeuwen potvisstrandingen aan de Nederlandse kust. ('Stranded'. Five Centuries of Sperm Whales on the Dutch Coast.)* s.l.: Walburg Pers (in collaboration with Teylers Museum, Haarlem, and Zuiderzeemuseum, Enkhuizen), 1992. 120 pp., ill. ISBN 90-6011-773-5.

Probably the most famous whale in literary history, Moby Dick is of course unique. Yet he belongs to an old and notorious lineage which goes all the way back to his biblical ancestor who swallowed Jonah. In a European historical context whales, unlike porpoises or dolphins, have retained this frightening aspect for centuries; they inspired emotions ranging from awe and respect to outright fear and terror. This was especially the case when whales left their natural surroundings – as frequently happened along the eastern coast of the North Sea – and were found, dead or still alive, stranded on the beach or stuck in shallow coastal waters. However, these were by no means the only reactions they provoked, judging from the Dutch language-publication '*Op het strand gesmeten*' ('Stranded'). This beautifully produced and generously illustrated catalogue accompanies an exhibition of prints, engravings, paintings, written descriptions, parts of skeletons and artefacts made of whale bone on display in the oldest Dutch museum of natural history, Teylers Museum in Haarlem and subsequently in the Zuiderzeemuseum in Enkhuizen. Focusing on the 16th, 17th and 18th centuries, several authors discuss pictures of stranded whales made by Dutch artists, as well as a range of contemporary interpretations and reactions.

Such events, it appears, occurred irregularly but rather frequently throughout the five centuries covered by the book, with the still unexplained exception of the years 1781-1937. The huge carcasses attracted large numbers of spectators, whose presence on the beach turned some of these

occasions into a fair. Besides the general public, 'professionals' attended the handling of the carcasses, supervised auctions, or dealt with the parts that could still be used: in particular the blubber, the so-called spermaceti (located in the upper part of the sperm whale's head), the valuable teeth, and the rare ambergris (which could sometimes be found in the intestines).

During the 16th century the motif of the beached sea mammal moved from the background to the centre of the pictures, and in the course of the 17th century it became an enormously popular theme. The same copperplates were used again and again to illustrate several different strandings. The picture of the sperm whale which landed on the beach near Katwijk in 1598 – drawn by Goltzius and engraved by Jacob Matham – enjoyed an exceptional success. For most of the 17th century it served as a model for the representation of many other such events and it continued to be copied until the 19th century.

In a detailed discussion of both pictures and related texts, the authors trace gradual changes in contemporary interpretations. Whereas 16th and 17th-century artists tended to point to the ominous character of the strandings and to the coincidence with other disasters (such as the birth of monstrous babies or animals, the appearance of comets and other unusual meteorological phenomena, or the death of princes), taking these as a sign of the displeasure or even wrath of God, their 18th-century successors seem to have lost interest in supernatural explanations. Instead, they emphasized the commercial value of the animals, while at the same time drawing attention to the interests of science; not that during the 16th and 17th centuries the pursuit of anatomical and physiological knowledge was totally absent: in fact, contemporary pictures abound with human figures measuring the whale from nose to tail – not excluding the jawbones and the penis – and exploring its (exaggeratedly cavernous) jaws. But by the late 17th century anatomy and zoology had become institutionalized; professional scientists had taken over research.

The book's introductory essay on the ethology and physiology of sperm whales shows how much, or rather how little we still know about these animals. Among other things it informs us that only male sperm whales visit the North Sea and adjacent parts of the Atlantic Ocean on their long-distance journeys – which explains why no female whales or calves ever stranded on the Dutch beaches. But the problem of why these animals lose their bearings at all has by no means been completely solved: one explanation blames a defective sonar organ (perhaps caused by illness). How these whales are able to dive so fast without suffering from changes in pressure remains equally mysterious. Nor has the function of the spermaceti in the animal's head been sufficiently explained.

During the past five centuries whales have turned from horrendous and ominous Leviathans into objects of commercial value and scientific interest. But it seems that several centuries of research have not succeeded in completely demystifying whales.

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BRØGGER, Jan *Pre-bureaucratic Europeans: A Study of a Portuguese Fishing Community*. Oslo: Norwegian University Press: The Institute for Comparative Research in Human Culture. 1990. 151 pp., maps, figures.

This book is a study of the fishermen and women of Nazaré, a bustling port on the western coast of Portugal about 150 km. north of Lisbon. The beach of Nazaré is well-known to both Portuguese and international tourists and the town of approximately 8,500 people has a lively economy and culture based on fishing and tourism. Fishermen living inland had, for centuries, fished from the beach and stored their gear in fragile wooden huts on the shore, but it was not until the mid-nineteenth century that they began to make permanent homes on the site of the present town. At the same time, the beach was discovered by the bourgeoisie of nearby towns and tourism has, since the beginning, been an integral part of the economic and social life of Nazaré. Thus, for more than a

century, two social classes have dominated life in Nazaré – the tourist developers and their clientele and the fishing folk. *Pre-Bureaucratic Europeans* is based on fieldwork conducted in Nazaré in 1978-79 and during later visits between 1981 and 1983.

There has been little written about the small locally-based fisheries of the Iberian peninsula and a study of Nazaré would be an important ethnographic case. Brøgger's interest, however, lies less in the social and economic organization of the Nazaré fishery than in his concern with how Nazaré can contribute to our understanding of '...the great transformation of European society from communal life of the Middle Ages to the alienated life of modern industrialism' (p. 140). He finds in Nazaré a society characterized by what he calls 'pre-modern' social relations evidenced by two particular practices: continuing beliefs in the supernatural and the maintenance of matrifocal household arrangements.

Despite his own cautionary note to anthropologists working in Europe about the importance of history, Brøgger seems to conflate history with social evolution for he views social relations in Nazaré as a relic – a survival – of medieval times. Anthropological research since the 1960s in developing societies has revealed the multilinearity of developmental processes and reaffirmed notions of culture as process, culture as under continual contestation and negotiation, and culture as capable of embodying contradiction, conflict and irony. Brøgger, however, chooses the nineteenth century Tönnies model that describes social change as a linear process of change from the close-knit community, the *Gemeinschaft*, to the large-scale cosmopolitan community, the *Gesellschaft*. The world view of the Nazareños is, according to Brøgger, an 'intact' *Gemeinschaft* (p. 13) and *Pre-Bureaucratic Europeans* is devoted to proving this. Brøgger links his work to Norbert Elias' concept of the 'civilizing process' explaining that he uses the term 'pre-bureaucratic' to describe the 'demeanour of authentic Nazareños [which] would, by most middle class Europeans, be recognized as rustic... In order to avoid the somewhat derogatory term rustic, we have chosen the term pre-bureaucratic to describe the non-urban style of behaviour which may still be observed in certain folk communities in Europe' (p. 46). According to Brøgger, 'We may confidently assume that the manners, behaviour, and attitudes of the Nazareño indeed exemplify the rural European style of the pre-modern era' (p. 45). Brøgger further argues his choice of the term 'pre-bureaucratic' by explaining that he is referring to how 'personal face-to-face relationships dominate everyday life...to a degree which make the influence of modern market relations and bureaucracy insignificant' (p. 13). Brøgger chooses, then, not to elaborate the history and development of market relations and the economic system of domestic fisheries production in Nazaré. He does not discuss the century of relations the fishing families have had with the state through taxation, licensing, military conscription, and the recruitment under Salazar of Nazareño fishermen for the state's Grand Banks cod fishing fleet. Nor does he discuss the impact of a century of male emigration from Nazaré or of tourism. He mentions only peripherally the class consciousness and socioeconomic stratification of Nazaré. As a result, the town and its people are, as it were, frozen in time. As we recognize that there is clearly a fascinating story to be told, the reader becomes increasingly frustrated with what ultimately amounts to the homogenizing and exoticizing of the people of the town of Nazaré through the author's insistence on containing his rich ethnographic material within his constraining theoretical objective to characterize Nazaré as a *Gemeinschaft* society.

There is one chapter (22 pages) on the fishery. In a brief introductory discussion, Brøgger contrasts fishing and peasant societies and argues that, unlike peasants, domestic fisheries producers in Nazaré enjoy unlimited access to the resource and that instead the critical factors are access to equipment and luck. He describes local fishing gear and techniques and illustrates these with a number of drawings. This chapter also describes the crew recruitment process and relations between crew (*camaradas*) and skipper-owners (*mestres*), and provides an interesting discussion of the combination of skill, luck and charisma that defines a successful mestre. The remaining chapters of the book are devoted to arguing the case that Nazaré represents a classic *Gemeinschaft* and focus on the two practices that Brøgger identifies as especially 'pre-modern': the maintenance of matrifocal households and beliefs in the supernatural.

Relying on the work of European family historians who maintain that the nuclear family emerges and prevails in industrial societies, Brøgger argues that in Nazaré the family system has retained 'the communal character of the medieval European family' evidenced by what he refers to as 'matrilineages' and 'matriarchies.' He describes the survival of what he calls the 'pre-modern communal family' in Nazaré as the result of 'female dominance': 'The reason why the Nazareño family has not followed the general trend of modernization seems to be female dominance' (p. 141). Brøgger describes how the women of Nazaré are astute businesswomen both as fish vendors and in their capitalization on opportunities to rent rooms to tourists; how they develop and maintain strong ties with their daughters through their shared work in these economic enterprises; and how men are marginalized from management roles in the household. Rather than analyse these women's roles within the local context of the fishing economy and society and the long history of male emigration and seasonal migration to the Grand Banks, Brøgger, following the framework of historians, describes these roles as anachronistic. Yet the patterns of uxorilocal residence, female sibling vicinality, female dominance and economic autonomy that he describes, far from being throwbacks to medieval communalism as he argues, have been found to characterize the households of such diverse and contemporary socio-economic conditions as the industrial working-class of East London, rural and urban African-American households, as well as the Caribbean and West African informal economies that are very much part of the new international division of labour. Closer to Nazaré, Lisón Tolosana described uxorilocal residence and female inheritance patterns in fishing communities in Spanish Galicia; I have described fishing households on the north coast of Portugal as 'women-centred'; and, Pina-Cabral has described the agricultural peasant households of northwestern Portugal and the bourgeois households of urban Porto as 'matrifocal.' Unfortunately none of this literature is cited.

Three chapters are devoted to supernatural beliefs about disease, misfortune and destiny (and in the case of fishermen, luck). There is some fascinating material on the practices of white witches (*bruxas*), all of whom are women, and in particular a detailed description of the cures and spirit possession performances of one bruxa. These chapters will be of interest to the increasing number of anthropologists who are studying alternative and New Age healing practices in Europe. Again, it is unfortunate that none of this literature is cited – especially the work of Pina-Cabral in Portugal. Where Brøgger treats the survival of white witches as anachronistic in Nazaré and likely to disappear as a wage economy becomes more viable, Pina-Cabral has described how important the bruxas continue to be among both rural and urban, working and middle classes in the Alto Minho of northwestern Portugal.

In conclusion, it is regrettable that the author did not choose to situate his study of Nazaré in the abundant and vibrant ethnographic literature of Portugal, Iberia, and Southern Europe – a field of anthropological endeavour that has burgeoned since the late 1970s. Doing so would have enabled the ethnographic data to come to life. The short bibliography, however, contains only one reference to a Portuguese article (that is unpublished) and only three references to southern European ethnography. And, as noted earlier, there are no references to the extensive comparative literature on fishing communities.

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Books Received

Apostle, Richard and Gene Barrett

- 1992 *Emptying Their Nets: Small Capital and Rural Industrialization in the Nova Scotia Fishing Industry*. Toronto: University of Toronto Press.

Cole, Sally

- 1991 *Women of the Praia. Work and Lives in a Portuguese Coastal Community*. Princeton: Princeton University Press.

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Holm, Poul

- 1991 *Kystfolk, Kontakter og sammenhænge over Kattegat og Skagerrak ca. 1550-1914*. Esbjerg: Fiskeri- og Søfartsmuseet – Saltvandsakvariet.

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- 1992 *International Journal of Maritime History*. December 1991.

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Williams, David A. and Andrew P. White (Compilers)

- n.d. A Select Bibliography of British and Irish University Theses about Maritime History, 1792-1990. *Research in Maritime History* No. 1. N.p.: International Maritime Economic History Association.

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Byron, R.

- 1980 Skippers and Strategies: Leadership and Innovation in Shetland Fishing Crews.
Human Organization 39(3):227-32.

Löfgren, O.

- 1979 Marine Ecotypes in Preindustrial Sweden: A Comparative Discussion of Swedish Peasant Fisherman. In: R. Andersen (Ed.), *North Atlantic Maritime Cultures. Anthropological Essays on Changing Adaptations*. The Hague: Mouton. Pp. 83-109.

Taylor, Lawrence J.

- 1983 *Dutchmen on the Bay. The Ethnohistory of a Contractual Community*. Philadelphia: University of Pennsylvania Press.

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