

## Conclusion

This essay does not seek to deny that luck, or abstract ideas about impersonal fortune are unimportant in an understanding of the world-view of fishermen; rather, it seeks to demonstrate that fishermen's expressions of luck may be considered in a sociological as well as a cosmological sense. In Burra, the concept of luck is used to serve social ends, as an idiom in which evaluations of rank, prestige and success may be made without giving offence to neighbours and kinsmen. Fishermen of different crews and their families ashore interact not only in the context of fishing, but also in other social fields involving a wide range of face-to-face exchanges which are a function of the smallness of scale of Burra society. People who are competitors and rivals in fishing may be helpmates and allies in other social settings. These cross-cutting ties ensure that the relations between crews, and within them, are tempered by a comparatively broad range of mutual interests and interdependencies. The maintenance of these intricate networks of interdependencies requires careful management and diplomacy. Explanations in terms of luck are a tactfully neutral way of speaking about social differences.

## References Cited

- Acheson, J.  
1981 *Anthropology of Fishing*. *Annual Review of Anthropology* 10:275-316.
- Barth, F.  
1966 *Models of Social Organization*. London: Royal Anthropological Institute of Great Britain & Ireland.
- Byron, R.  
1980 *Buying a Share: State Institutions and Local Communities on the Periphery. A Case from Shetland*. In: R.D. Grillo (Ed.), *"Nation" and "State" in Europe: Anthropological Perspectives*. London: Academic Press. Pp. 137-49.
- Byron, R.  
1986 *Sea Change. A Shetland Society 1970-79*. St. John's: Institute of Social and Economic Research, Memorial University of Newfoundland.
- Löfgren, O.  
1977 *Fishermen's Luck: Magic and Social Tensions in Two Maritime Communities*. Lund: Institute of Ethnology, University of Lund. (Mimeo).
- Norr, K. and J. Norr  
1974 *Environmental and Technical Factors Influencing Power in Work Organizations: Ocean Fishing in Peasant Societies*. *Sociology of Work and Occupations* 1(2):219-51.
- Stiles, G.  
1972 *Fishermen, Wives and Radios: Aspects of Communication in a Newfoundland Fishing Community*. In: R. Andersen and C. Wadel (Eds.), *North Atlantic Fishermen. Anthropological Essays on Modern Fishing*. St. John's: Institute of Social and Economic Research, Memorial University of Newfoundland. Pp. 35-60.

## Models for Fishing and Models of Success

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### Introduction

The following account is based on fieldwork in Sandgerði in south-west Iceland. According to the dominant Icelandic folk model of fishing, some skippers catch more fish than others because they follow other procedures when making decisions about the locations of prey. Successful skippers are said to follow hunches and get into a particular 'fishing mood'. Durrenberger and I have shown that differences in success are not explained by differences in skipper behavior, since, statistically, the size of the catch is largely determined by boat size and fishing effort (Durrenberger and Pálsson 1983, 1985; Pálsson and Durrenberger 1982, 1983; Pálsson 1982). We argue that the prevailing model of success is a response to the competitive nature of modern fishing. Here I describe the folk model and test its authenticity in the light of information on the actual behavior of skippers. The analysis shows that 'good' and 'bad' skippers are not significantly different in terms of their fishing profiles. This supports earlier analysis based on the same data (Durrenberger and Pálsson 1986). I conclude that hunches and dreams are independent of success, and that the logic of such practices is largely contained within the realm of social relations.

There are many anthropological accounts of folk models of fishing, native theories of production and fishing success. In many instances success is attributed to the personal capabilities or fishing tactics of leaders of fishing operations (see Acheson 1981). Good skippers are said to have a particular expertise (Wadel 1972), independence (Barth 1966), good 'hearing' (Firth 1946:99), or 'good eyes' (Orbach 1978:82). In many other instances, however, success is not regarded as a personality attribute but rather as a matter of luck or supernatural forces. This is the case in Sri Lanka (Alexander 1977:238), Newfoundland (Stiles 1972:41), France (Jorion 1976), the Shetlands (Byron, this issue), and the Cape Verde Islands (Pálsson, in press). Further examples, provided by the *Human Relations Area Files*, are Alaska (Inuit), Bahrain, Brazil (Bahia), Estonia, Jamaica, Java, Korea, Koryak, Marshall, Micmac, Rif, Seri, Trobriand, and Yurok.

While much has been said of models of fishing, there are very few accounts of what skippers actually do while at sea — their models for action (Geertz 1973:93) — and most concern navigation rather than fish finding (see, for example, Gell 1985). Acheson's study of the lobstermen in Maine (1977) is rare in that it attempts to describe both the folk theory of success and the actual behavior of skippers. Acheson observed a group of 33 skippers and argued that his evidence supported the folk claim that success is largely a matter of knowledge of

fishing spots. Some skippers placed their pots at well-defined locations (a practice they referred to as 'pin-point bombing'), while others distributed their pots at random ('saturation bombing'). According to Acheson those of the first group had significantly larger average income. His analysis, however, is based on a small data set and he does not provide adequate information on the main variable on skipper behavior, fishing tactics – how it is defined, operationalized, and observed.

### Models of Fishing

Towards the end of the nineteenth century and during the first decades of this century, a number of the constraints associated with peasant fishing in Iceland relaxed. These brought about changes in the nature and organization of fishing and the conceptual models associated with it. Iceland had gained independence from Denmark, the legal obligations of landless workers (*vistarband*) to associate with landowners were lifted, markets for Icelandic fish developed, and access to the sea was increasingly made public rather than private. With these constraints removed, fishing was no longer for subsistence and productive targets became indefinite. Motor boats became available and with them, new offshore fishing grounds were opened up. With the new markets the national economy of Iceland became centered on the extraction, processing and the export of fish and derived products.

With the growth of capitalist production the resources were defined as infinite and 'there for the taking' rather than being given up as 'gifts'. The fish must be actively pursued. The ocean is no longer considered to have some kind of power or force, and its inhabitants are no longer seen to control the fate of humans, except as passive objects of production. The peasant's mythology, and its image of the cosmic order, has been replaced by the notion of infinite natural resources. The uncertainties of production have changed, the relevant contrasts are different, and earlier metaphors have become obsolete (Pálsson 1986).

During earlier centuries someone had to co-ordinate the activities of the crew. He was the 'foreman' (*formaður*). But it was not an honorific role or title. In contrast, the present 'skipper' (*skipstjóri*) is highly respected. As fishing became a full time occupation, the role of skipper evolved. It became a specialized role in an autonomous branch of production. According to modern folk accounts, the skipper is critical for fishing success. Skippers are said to differ in their ability to locate and catch fish, catches are said to vary from one boat to another because skippers are different, and the ability to catch fish is supposed to be 'in the blood'. Some skippers fish 'by cleverness' (*af lagni*) while others fish 'by force' (*af krafti*). Two skippers, then, may be equally successful, but by different means. Those who fish by force are said to make more trips, to use more gear and fuel, and to destroy more gear in the process. Those who are said to fish by dexterity or cleverness, hampered by their limited assets, small boats or engines, are said to develop original fishing strategies to compensate for what they lack in force.

The modern model of success is a model on which people draw to organize their long-term experience. When fishermen talk about their careers, they often count the number of years they have spent with particular skippers rather than the years they have been on particular boats. After each winter season the names of the 'top' skippers (*aflamenn*, literally, catch-men) in the Icelandic fleet are reported in the mass media. In developing accounts for whole seasons, as well as careers, people emphasize the personal characteristics and fishing tactics of the skipper. Accounts of these and speculations about such features are popular topics of discussion throughout Iceland. Top-ranking skippers can select from among the most experienced. And because crew members take current rankings of skippers to be a good indication of future success, they compete for places on the boats of high-ranking skippers. Successful skippers tend to have better and more stable crews, larger boats, more sophisticated equipment and sounder financial backing. When high-ranking skippers change boats, often 'their' crews go with them.

The skipper is not supposed to elaborate on his fishing 'tricks' and skippers who have been at the top of the hierarchy for several seasons are reluctant to comment upon their own performance. If they do, they create the impression that their success is due either to sheer luck or some peculiar capacity which, even though it is beyond their own understanding and control, enables them to find fish. Many of them are able to memorize minute details. Many of them, too, are said to get into a particular 'fishing mood' (*fiskistuð*). Several successful skippers have described how a dilemma regarding fishing locations was solved by a strange message, or some kind of 'whisper' (see, for instance, Ögmundsson 1985:14; Ási í Bæ 1966:82-3). One skipper explains the phenomenon of fishing mood as follows:

There is this mood, as it is called, which no one understands. It's like being possessed. It doesn't matter where one throws the gear, there is always plenty of fish. One comes up with various ideas, which one may regard as ridiculous, but if one takes them seriously one is bound to fish better than ever (Ási í Bæ 1963:57).

Fishing mood is sometimes said to be based on dreams which provide information on a desirable course of action, the timing or location of fishing. Information is thought to be given by a dead person or to be indicated by particular names or symbols in the dream. Some skippers are known to be dreamers and their accounts have been widely published. One local skipper explains:

I remember my dreams, and I must say it makes life a lot easier to know that one may expect a good catch. I recall a case where a dream told me exactly where to go ... I dreamt the direction on the compass, east-north-east of Garðskagi. We fished like crazy (Faxi 1976:9).

In his study of Alaska skippers, Gatewood (1983) distinguishes between rational and reasonable decisions. For him, a rational decision involves a conscious selection among the alternatives open to the skipper, whereas a reasonable one does not. Reasonable decisions are not necessarily irrational, Gatewood argues, but

it is difficult to account for them since they are based on intuition – hunches, dreams, etc. The choice of terms is somewhat unfortunate, since the extent to which a particular decision is ‘rational’ or not is a rather tricky issue. If ‘rational’ decisions refer to what is socially optimal, they will always depend on social context, a point belaboured by Godelier (1972). What really matters though is the tactics of the skipper, his *procedure* of decision making rather than the end result, and the expectations of the folk model. In Alaska a skipper is expected to make rational decisions, especially if he has a good reputation. In Iceland the contrary is the case.

### Fishing Tactics

If successful skippers follow intuitive procedures of decision making (‘reasonable’ in Gatewood’s sense), they must be original and innovative in their fishing tactics. Such a notion is central in the accounts of Barth (1966) and Heath (1976) of Norwegian herring fishing (for a critical view, see Durrenberger and Pálsson 1983). Van den Hoonard uses a similar notion in his account (1977:153) of the shrimp fleet of Isafjörður in West Iceland. He says that skippers “tend to congregate in one fishing area . . . rather than striking out on their own to achieve bigger catches”, but he fails to substantiate his conclusion by any body of empirical evidence.

The ethnographic evidence is contradictory. On the one hand fishermen agree that some good skippers do take ‘big chances’. They are said to be prepared to leave a ‘fishing area of so and so many tons’ and go some place else to catch twice as much the next day. Such independence is only reported of those who tend to be successful. On the other hand, the importance attached to catch and prestige may be expected to result in a high concentration of boats. It is clear that line boats have concentrated on few locations, since early this century particular regulations concerning ‘rowing time’ were enacted to prevent overcrowding. Only latecomers on boats with the smallest engines could ‘afford’ to seek high catches with low probabilities. Their catches were not, however, significantly different from those of the others. How independent, then, are skippers in reality? How do they use the fishing space available to them, and how different are successful and unsuccessful skippers in these respects?

The data used here concern the fleet of Sandgerði during the winter season in 1981. By then 46 boats (from 10 to about 200 tons) operated from Sandgerði. Cod is the main species caught during the winter season. Early in the season fishermen use baited long lines (up to 12 miles long) which must be drawn daily, but later in the season the species cod prey on become more plentiful and the bait is thus less attractive. Fishermen therefore begin to use gill nets, stringing together 10 or 15 nets to make a single barrier. Each boat has a number of such barriers (*trossur*), depending on its size and the number of crew men. The nets are revisited after a day or two depending on the weather. During a winter season the fleet uses an extensive area (see Fig. 1). The decision as to which location to visit is affected by a number of factors – fishing gear, weather, bottom fea-

tures, boat size, and available information on the movements of cod and of other boats (see Pálsson 1982a, Durrenberger and Pálsson 1986).

Detailed information on the location of vessels is publicly available. Icelandic law requires that skippers report their locations as a safety measure and the reported locations are recorded at an office in Reykjavík (*Tilkynningaskýldan*). The locations are squares of sea 15 km on a side, 225 square km. One should note that there may be a number of fishing spots in each location. Also, the grid does not reflect the cognitive maps which guide fishing operations (see Fig. 1) – for skippers it is ‘only’ a safety device, a simple coordinate system. Even though skippers refer to it when reporting their locations, to comply with rules made ashore, they normally speak of fishing space in quite different terms (see Pálsson 1982:220-24).

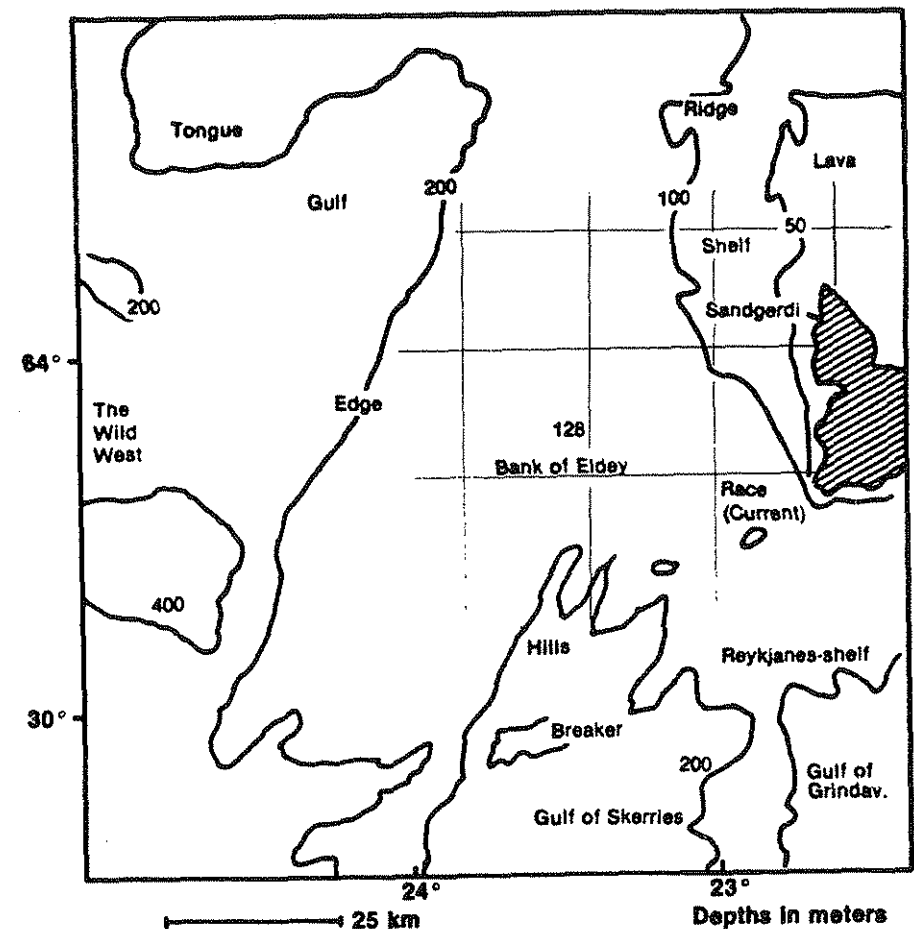


Figure 1. Fishing Grounds and Reporting Grid

Skippers, one should note, do not always report their locations. During the season in 1981 local skippers made 1642 trips and reported their location in 1350 instances, or 93% of all trips. There is a very strong correlation (.96), however, between number of trips and reported number of trips which suggests that the data on locations is representative for the whole fleet. Also, there is no relationship between the degree to which skippers report their locations – i.e. reported number of trips divided by actual number of trips – and the size of their catch according to the Chi-square test (Chi-square is 8.00; 4 degrees of freedom). This suggests the data is equally representative for successful and less successful skippers.

The distribution of boats on local fishing grounds over a whole season is very uneven. Skippers went fishing to 50 locations, or approximately 55% of all locations within the grid used. One location just south of Sandgerði accounts for 39% of all trips, and another location north west of Sandgerði accounts for 7.7%.

Three measures of skipper behavior may be operationalized: (1) the relative number of locations visited, (2) the distribution or number of trips to different locations, and (3) the extent to which the skipper fishes independent of others. If the folk accounts described above are authentic, one would expect successful skippers to visit a greater number of locations than less successful ones, to have less skewed fishing profiles (a more even distribution of trips to the locations used), and to fish more independently.

Figure 2 illustrates the notion of a fishing profile. Skipper A makes most of his trips to one location and very few trips to some locations. In his case the deviation from the mean number of trips to a location is quite high. Skipper B, on the other hand, makes a similar number of trips to all the locations he visited. In his case the deviation from the mean is minimal.

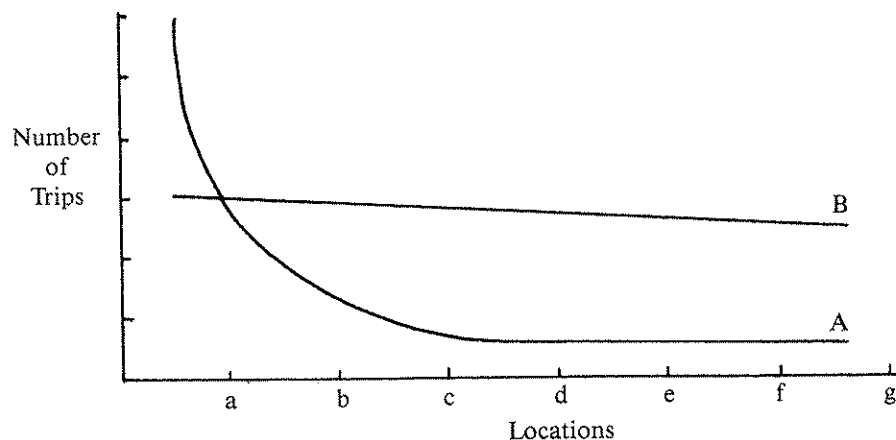


Figure 2. Hypothetical Fishing Profiles

One the average skippers visited 5.7 locations (the standard deviation is 3.48). Since the number of locations visited is (weakly) related to number of trips (the Pearson correlation is .25,  $s = .055$ ), a relative measure should be used. The number of locations a skipper visits, relative to the number of trips he makes, turns out to be related to fishing success (Chi-square is 12.60, 4 degrees of freedom), but contrary to the predictions derived from the folk model there is a negative correlation (-.46, see Table 1). Successful skippers tend to visit relatively fewer locations than less successful ones.

The second measure of skipper behavior, the distribution of trips to the locations visited, may be statistically represented by the coefficient of variation – the standard deviation for the number of trips a skipper makes to different locations divided by the mean number of trips by the same skipper. A large coefficient of variation (a skewed distribution) would be an indication of conservative fishing tactics (profile A on Fig. 2). On the other hand, a small coefficient of variation (less skewed distribution, profile B on Fig. 2) would indicate that the skipper is willing to take risks. There is a relationship between catch and the coefficient of variation (Chi-square is 9.63, 4 degrees of freedom), but again the relationship is not in the direction predicted by the folk model. The Pearson correlation is .38 which shows that the more successful skippers tend to have a more skewed fishing profile than less successful ones.

The third measure, independence or innovative fishing tactics, is a more sophisticated measure than those already mentioned in that it represents skipper behavior relative to how *other* skippers behave (see Durrenberger and Pálsson 1986:221). A skipper may be said to be independent or innovative if he fishes away from other boats. On the other hand, visiting locations also favored by others would be an indication of conservative fishing tactics. Independence may be operationalized, for the data set in question, as *the number of trips a skipper*

Table 1. Pearson Correlations ( $N = 45$ ).

	2	3	4	5	6
(1) Relative independ.	.53 (.000)	-.27 (.043)	.31 (.021)	-.48 (.001)	-.07 (.325)
(2) Rel. no. of locations		-.41 (.003)	-.10 (.273)	-.68 (.000)	-.46 (.001)
(3) Distr. of tr. (co. of. var.)			.20 (.090)	.46 (.001)	.40 (.003)
(4) Boat size				.17 (.135)	.69 (.000)
(5) Trips					.70 (.000)
(6) Catch					

makes to locations in which no one fished the day before. The mean for this variable is 17.60 with a standard deviation of 11.12. Again a more relative measure should be used. Those who fish often are more likely to visit locations where no one fished the previous day, and indeed there is a strong positive correlation (.67;  $s = .000$ ) between absolute independence and number of reported trips. A measure of independence, relative to number of trips, turns out to be unrelated to fishing success. Chi-square is 7.96 (4 degrees of freedom), which is insignificant at the .05 level.

By this evidence successful skippers seem to have rather conservative fishing profiles in that they concentrate their fishing effort on relatively few locations. Also, successful skippers are no more independent than less successful ones. It may be argued that if one makes a gross distinction between 'successful' skippers and 'less successful' skippers one loses sight of some really outstanding skippers (þorlindsson, in press), and it is possible that a very few skippers perform much 'better' on the 'tests' used here than their colleagues despite the statistical conclusions already presented. This seems not to be the case, however. As Table 2 shows, the skipper with the greatest prestige (the one who caught most fish) performs worse than the average skipper on two of the tests used (he visits relatively few locations and his fishing profile is rather skewed) and his score on the independence-tests is about average. One of the skippers with the lowest prestige was fired at mid season by the company which hired him because he did not 'fish enough'. His performance, though, is better than that of the top skipper on all three accounts. The most famous skipper of the whole Icelandic fleet fished from Sandgerði during part of the season in 1981. He performs better than the top skipper, but there is no great difference between his fishing tactics and those of the low prestige skipper.

Table 2. Main Variables: Means and Values for Three Skippers.

Variables	Mean	Std. dev.	High prestige skipper	Low prestige skipper	Famous skipper
Relative independence	.55	.26	.57	.96	.77
Relative no. of locations	.27	.21	.18	.63	.54
Distribution of trips	1.02	.49	1.86	.80	.58

### The Logic of Hunches

There is no reason to doubt that some skippers follow hunches and dreams, as the folk model suggests. Indeed statistical evidence indicates that skippers often

make 'reasonable' decisions. Earlier analysis shows that even though objective variables (such as boat size, number of boats fishing, and relative catches at different locations) do account for a portion of the variance in what skippers do, a large portion is left unexplained (see Durrenberger and Pálsson 1986).

What is the rationale, then, of the practices and models of hunches and dreams? Some students of cognition might be tempted to conclude that they serve the purpose of solving problems. Thus, Evans and Newman suggest (1973:372) that dreams function as a 'memory filter', by examining the vast amount of information collected in the course of the day and rejecting 'redundant or inapposite memories or responses'. It is possible that dreams do function as a memory filter in this sense, but an explanation of dreaming in general does not explain why some groups of people are more likely than others to consciously *use* dreams and to *claim* to use dreams to guide their actions. The Icelandic case suggests that it is not necessarily the skipper's memory which is being 'filtered'. A skipper may use the dreams of *others*, some of which have never been to sea. In such instances the skipper's own psychological processes are not at issue, except in the sense that he 'reads' the message of the dream. Dreams are *interpreted* just as astrological signs.

The logic of such models is a well-worn topic in anthropological discussion. Moore suggests that some magical practices "may well be directly efficacious as techniques for attaining the end envisaged by their practitioners" (1957:69). He argues that the Naskapi technique of shoulder-blade divination, the interpretation of cracks in burned animal scapulae, can be seen as an attempt to randomize behavior and "avoid unwitting regularities . . . which can be utilized by adversaries" (Moore 1957:73). Moore's perspective may well be applied to *some* magical practices, but hardly to fishing if the prey is seen as 'adversary', simply because of the difficulty fish have in using evasive strategies.

It seems reasonable to argue that some apparently irrational practices associated with fishing are a result of ecological constraints, the invisibility of aquatic resources and the consequent lack of knowledge and control over them. Some observers have argued (Hewes 1948) that fishing is a special kind of hunting in that aquatic environments represent a strange realm from the point of view of the hunter. Since the prey moves in a different medium, the pursuit demands particular models (Morrill 1967). Malinowski noted (1954:31) that in lagoon fishing magic does not exist, while in deep-sea fishing there is often extensive ritual. It may be argued on similar grounds that hunches and dreams, or any 'reasonable' decisions, are the result of decision-dilemmas where information is scant and the alternatives open to the skipper are equally attractive (Gatewood 1983; Durrenberger and Pálsson 1986).

The importance of dreams and hunches does not, however, seem to lie primarily in any problem-solving capacity directly related to the reality of fishing. There are also important interactional or social constraints. Hunches and dreams, I suggest, can be said to reduce the burden of responsibility on the leader of fishing operations. An element of trust between the skipper and his crew is important for success. Where a decision has to be made and where the various alternative

strategies seem to be equally attractive, the skipper may resort to hunches, dreams, ancestor spirits, etc., in order not to endanger the team spirit aboard and the trust between him and the crew. The idea that individual differences between skippers explain differential success places a high degree of responsibility on skippers, and to minimize personal responsibility for success or failure an additional mechanism may be called for. The skipper's decisions are said to be the result of forces over which he has little or no control. Thus the skipper is sometimes presented as a powerless agent controlled by unconscious thoughts, mysterious powers or psychological states. Even though the qualities of the individual skipper are said to be crucial for his success, the skipper does not really determine his own fate. Such an explanation is similar to that of Henriksen which argues (1973:49) that in critical decision making situations divination techniques may function to 'externalize' decisions of where to go and look for prey. Good hunters can safeguard themselves by blaming the technique for occasional failures. Significantly, Orbach notes (1978:79) in his ethnography of tuna fishing that hunches can be expected "after a long time in the search and more especially after a search without fish."

Secondly, following Moore's suggestion mentioned above, hunches and dreams can be seen as attempts to randomize fishing operations in competitive situations. Skippers may give the *impression* that they avoid a fixed or explicit pattern of operations, not with regard to the evasive capabilities of the prey, but with regard to the observations of other skippers with whom they share the notion of fishing as a zero-sum game.

Finally, conceptions associated with hunches and dreams are one element of skipper's impression management (Pálsson and Durrenberger 1982). Such conceptions provide one type of answer to the question which is central to the notion of the skipper effect, namely 'How is one skipper different from others?' They provide an explanation, even if a mythical one, of differential success. Skippers are fairly undifferentiated in the capacity to fish, but the claims about the importance of hunches and dreams underline the idea that skippers' decisions determine the size of their catch.

## Conclusions

In our analyses of the skipper effect, Durrenberger and I showed that success in the winter fishing for cod and similar species is largely determined by boat size (Pálsson and Durrenberger 1982). Gatewood challenged our findings (1984) on the grounds that it is difficult to separate boat size and fishing skills, since the most skillful skippers tend to be in charge of the largest boats. If differential success is a matter of the personal capabilities of the skipper, as the folk model suggests, one would expect a statistical relationship between success and fishing tactics. The present analysis does not provide evidence for such a relationship.

Even though hunches and dreams do not account for differential success, they have their own rationale. I suggest that ecological constraints, the uncertainties of fishing, partly explain why fishermen often *use* intuitive procedures for deci-

sion making. On the other hand, ecology cannot account for the fact that particular groups of fishermen attribute exceptional success to the use of such procedures. The reasons have more to do with the need to 'externalize' decisions and reduce the burden of responsibility in competitive situations.

Some models of fishing, as we have seen, suggest that differential success is due to the personality differences of skippers while others don't. A distinction can also be made between fisheries where personal differences are important for success and where they are not. Thus there are four logical possibilities (Durrenberger and Pálsson 1984:380). First, there are societies where there is no skipper effect but nevertheless an ideology of skipper effect and this seems to be the case in modern Iceland. Secondly, there are societies where there is both a skipper effect and an ideology, the lobster fishery in Maine being one example according to Acheson's analysis (1977). Thirdly, there are societies where there is no skipper effect and no ideology. This is illustrated by Icelandic fishing during the era of 'foremen' and household production. Finally, there are societies where there seems to be a skipper effect but no ideology. Byron argues (this issue), for example, that in the Shetlands differences between boats are minimized by an egalitarian ideology of luck. Clearly, reality and ideology relate to each other in different ways.

To account for such differences presents an interesting comparative problem. Some anthropologists suggest technology and the process of extraction are of crucial importance. Goodlad implies (1972), for instance, that the change from a passive fishing gear to an active one was decisive for ideological changes in Shetland herring fishing. An alternative interpretation gives priority to the social context of production. Ingold suggests (1980:159) that the ideology of respect in hunting societies is adaptive in that it elicits behavior which conforms with the rationality of the economic system. Similarly, I would argue, the rationality of the Icelandic notion of skipperhood is largely located within the realm of social relations.

If models of fishing are motivated by the rationalities of economic systems, we are likely to witness the emergence of a new model in Iceland. The present model – the ideology of skipperhood and the notion of skipper effect – developed in response to the competition between skippers in the expansive market economy of the first decades of this century. Now there is a new ceiling on production. Since the last 'Cod War', capitalist production has been subject to an intricate institutionalized machinery. The annual total catch of cod and the maximum catch of each boat is decided upon in advance. Fishermen often complain that the new system is unfair because the 'best' skippers are allotted the same quota as the 'bad' ones. This institutionalization fosters the notion of homeostatic fisheries and a 'harvesting' orientation, a 'scientific' rationality. Already one hears the argument that it is the boat and its technology which catches fish and not the skipper or the crew. Even though a skipper's prestige is still determined by 'his' catch during a fishing season, its *value* though rather than its size, the element of competition is greatly reduced. After all, the *size* of the catch – the main criterion for success in the folk model of previous de-

cares — is beyond the skippers' sphere of influence as it is determined by government agencies. One may, therefore, predict a decline in the emphasis on human agency. As a result, the notions of skipper effect, independence, and fishing mood are likely to disappear.

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### References Cited

- Acheson, J.M.  
1977 Technical Skills and Fishing Success in the Maine Lobster Industry. In: H. Lechtman and R.S. Merrill (Eds.), *Material Culture: Styles, Organizations, and Dynamics of Technology*. St. Paul: West Publishing Company. Pp. 111-38.
- Acheson, J.M.  
1981 Anthropology of Fishing. *Annual Review of Anthropology* 10:275-316.
- Ási í Bae  
1963 Binni í Gröf. In: Jónas Árnason (Ed.), *Aflamenn*. Reykjavík: Heimskringla. Pp. 7-60.
- Ási í Bae  
1966 *Sá hlær bezt*. Reykjavík: Heimskringla.
- Alexander, Paul  
1977 Sea Tenure in Southern Sri Lanka. *Ethnology* 16(3):231-51.
- Barth, Fredrik  
1966 *Models of Social Organization*. London: Royal Anthropological Institute of Great Britain & Ireland.
- Durrenberger, E. Paul and Gísli Pálsson  
1983 Riddles of Herring and Rhetorics of Success. *Journal of Anthropological Research* 39(3):323-36.
- Durrenberger, E. Paul and Gísli Pálsson  
1984 Reply to Gatewood. *American Ethnologist* 11(2):379-80.
- Durrenberger, E. Paul and Gísli Pálsson  
1985 Peasants, Entrepreneurs, and Companies. The Evolution of Icelandic Fishing. *Ethnos* 50(1-2):103-22.
- Durrenberger, E. Paul and Gísli Pálsson  
1986 Finding Fish: The Tactics of Icelandic Skippers. *American Ethnologist* 13(2):213-29.
- Evans, C.R. and E.H. Newman  
1973 Dreaming: An Analogy from Computers. In: S.G.M. Lee and A.R. Mayes (Eds.), *Dreams and Dreaming*. Middlesex: Penguin, Pp. 371-77.
- Faxi*  
1976(5) Ég er sjómaður — ekkert annað. Keflavík.
- Firth, Raymond  
1946 *Malay Fishermen: Their Peasant Economy*. London: Routledge and Kegan Paul.
- Gatewood, J.B.  
1983 Deciding Where to Fish: The Skippers Dilemma in Southeast Alaskan Salmon Seining. *Coastal Zone Management Journal* 10(4):347-67.
- Gatewood, J.B.  
1984 Is the "Skipper Effect" Really a False Ideology? *American Ethnologist* 11(2):378-79.
- Gell, Alfred  
1985 How to Read a Map: Remarks on the Practical Logic of Navigation. *Man* 20(2):271-86.
- Godelier, M.  
1972 *Rationality and Irrationality in Economics*. London: New Left Books.
- Goodlad, A.  
1972 Old and Trusted, New and Unknown: Technological Confrontation in the Shetland Herring Fishery. In: R. Andersen and C. Wadel (Eds.), *North Atlantic Fishermen. Anthropological Essays on Modern Fishing*. Toronto: University of Toronto Press. Pp. 61-81.
- Heath, A.  
1976 Decision Making and Transactional Theory. In: B. Kapferer (Ed.), *Transaction and Meaning*. Philadelphia: Institute for the Study of Human Issues. Pp. 25-40.
- Henriksen, G.  
1973 *Hunters in the Barrens: The Naskapi on the Edge of the White Man's World*. St. John's: Institute of Social and Economic Research, Memorial University of Newfoundland.
- Hewes, G.  
1948 The Rubric "Fishing and Fisheries". *American Anthropologist* 50(2):238-46.
- Ingold, Tim  
1980 *Hunters, Pastoralists and Ranchers*. Cambridge: Cambridge University Press.
- Jorion, Paul  
1976 To Be a Good Fisherman You Do Not Need Any Fish. *Cambridge Anthropology* III(1):1-12.
- Malinowski, Bronislaw  
1954 *Magic, Science and Religion*. New York: Doubleday Anchor Books.
- Moore, O.K.  
1957 Divination: A New Perspective. *American Anthropologist* 59:69-74.
- Morrill, W.T.  
1967 Ethnoichthyology of the Cha-Cha. *Ethnology* 6:409-16.
- Orbach, M.K.  
1978 *Hunters, Seamen, and Entrepreneurs: The Tuna Seinermen of San Diego*. Berkeley: University of California Press.
- Pálsson, Gísli  
1982 Representation and Reality: Cognitive Models and Social Relations Among the Fishermen of Sandgerði, Iceland. Doctoral Dissertation. Department of Social Anthropology. University of Manchester.
- Pálsson, Gísli  
1982a Territoriality Among Icelandic Fishermen. *Acta Sociologica* 25(Supplement):5-13.
- Pálsson, Gísli  
1986 The Idea of Fish: Land and Sea in Icelandic World-View. Paper presented to The World Archaeological Congress, Southampton.
- Pálsson, Gísli  
n.d. Small-Scale Fishing in São Vicente: Social Aspects of Growth and Development. In: De Abreu et al. (Eds.), *Social Science Research on Contemporary Cape Verde*. (In press).
- Pálsson, Gísli and E. Paul Durrenberger  
1982 To Dream of Fish: The Causes of Icelandic Skippers Fishing Success. *Journal of Anthropological Research* 38(2):227-42.

- Pálsson, Gísli and E. Paul Durrenberger  
1983 Icelandic Foremen and Skippers: The Structure and Evolution of a Folk Model. *American Ethnologist* 10(3):511-28.
- Stiles, R.G.  
1972 Fishermen, Wives, and Radios: Aspects of Communication in a Newfoundland Fishing Community. In: R. Andersen and C. Wadel (Eds.), *North Atlantic Fishermen. Anthropological Essays on Modern Fishing*. Toronto: University of Toronto Press. Pp. 35-60.
- Van den Hoonaard, W.C.  
1977 Social Context and the Evaluation of an Occupational Culture: A Study of the Shrimpers of Isafjörður, Iceland. Doctoral Dissertation. Department of Sociology. University of Manchester.
- Þórlindsson, Þórólfur  
n.d. *Að vera eða látast: Er aflaskipstjórinn aðeins goðsaga? Afmælisrit helgað Brodda Jóhannessyni sjötugum*. Reykjavík. (In press).
- Ögmundsson, Karvel  
1981-2 *Sjómannsævi*, I and II. Reykjavík: Örn og Örlygur.

## Fisheries Risk in the Modern Context<sup>1</sup>

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### Introduction

The sea has long been viewed as a threatening environment and the folktales of many peoples list an impressive inventory of the real as well as imaginary dangers that are said to lie just beyond the horizon, out in the deep. Though, for much of history, fishermen were forced (and preferred) to exploit in-shore waters, such fishing still faces risks of sudden storms, capsizing in swells, or being smashed on rocks due to an error in sailing judgment. However, if there were dangers lurking in these waters, how much more fearful were the risks once out of sight of land? Not only the fishery folk but those who studied them could not help but emphasize the natural risks of fishery ventures – and, as well, the exotic defenses such as superstitions, taboos, amulets, prayers and the like, all designed to mitigate such risks.

As fishermen grew more venturesome and their vessels more sophisticated, they ventured further out to sea and the risks increased; in one of the world's great fishing ports, Gloucester, Massachusetts, 1788 men were lost in the period 1861-1881 alone – a figure that continues to be added to annually as the port's boats continue to ply the waters of the North Atlantic (Connolly 1940:322). More recently, Poggie (1980:128) reports that, in the area between Rhode Island and Maine, between September 1971 and October 1978, more than 70 fishing boats sank and an even greater number of men lost their lives off the New England coast. Even the large factory ships that began commercial fishing after World War II, sailing in vast armadas of catch/processing vessels together with supply and repair ships, have presented their crews with their own types of risks.

Poggie (1980:123) emphasizes the high occupational risks in commercial fishing when he reports that:

Official statistics affirm the extreme risk involved in fishing. Indeed, fishing is far more dangerous in terms of loss of life than coal mining – the most dangerous landbased occupation in American society. The Office of Merchant Marine Safety in 1972 reported that in 1965 the commercial fisheries of the United States recorded 21.4 deaths per million man-days in contrast to 8.3 in coal mining (U.S. Bureau of the Census, 1970 as cited by Poggie 1980:123).<sup>2</sup>

Despite these figures, only too well known to fishermen, informants shrugged away Poggie's suggestion that their work was very dangerous. Rather they tended to trivialize occupational risks as, 'no more dangerous than riding in a car'