

The Art of Fishing

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ABSTRACT This article focuses on the place of fishing societies in anthropological thought, some early evolutionary schemes in which fishing occupies a significant position, and recent attempts to define the properties of fishing adaptations. I argue that many approaches to fishing, both of the present and the past, emphasize material context and ecological relations. Such an approach suggests a 'natural' model of production which depicts the individual as an autonomous isolate engaged in the technical act of catching fish. An alternative theoretical approach is needed which appreciates the differences between fishing economies and the social relations in which production is embedded. I suggest an approach which emphasizes the circulation of products and restrictions of access to aquatic resources. Differences with respect to circulation and access, I argue, are likely to be reflected in differences in indigenous models of the 'art' of catching fish.

With European exploration and the discoveries of new worlds from the fifteenth century onwards, an ever increasing body of information regarding the different forms of human society was accumulated. Bewildered by the perplexity of available data and the problems they posed for their ethnocentric world-views, Europeans established typologies for classifying different societies and making sense of their variability. Somehow the new worlds had to be assimilated. Nineteenth century evolutionism deliberately addressed the problem, and so does, by definition, modern anthropology. Fishing was an important category, along with other 'arts of subsistence', in many of the early evolutionary schemes. Later, 'fishing' became much less visible—often being subsumed under the label 'hunting and gathering'. This article discusses the place of fishing adaptations in anthropological thought. It examines some evolutionary schemes in which fishing occupies a significant position and reviews recent attempts to define the properties of fishing adaptations. Many anthropologists, it seems, operate with a 'natural' model of fishing which emphasizes material context and ecological relations. Such a model draws attention to the adaptive significance of social organization, depicting the producer as an autonomous individual engaged in the technical act of catching fish. An alternative theoretical approach is needed which appreciates the differences between fishing economies and the social relations in which production is embedded. I suggest an approach which emphasizes the circulation of products and restrictions of access to aquatic resources. Differences with respect to circulation and access, I argue, are likely to be reflected in differences in indigenous models of fishing.

Fishing as a "New Career"

One of the best known evolutionary schemes of the nineteenth century is that of Morgan (1928 [1877]). For him the advent of fishing was of great evolutionary importance. He suggested that the experience of humans had run in "nearly uniform channels" and that there were three successive major stages or "Ethnical periods" – savagery, barbarism, and civilization – each representing "a distinct culture" and a "particular mode of life" (ibid.:8-9). According to Morgan, it was during the period of savagery that fishing had a particular role to play. The period of savagery was sub-divided into three periods – Lower, Middle and Upper. The Lower stage represented the origins of the human race and of articulate speech when humans lived in their original habitat by gathering fruits and nuts. Morgan claimed there were no surviving examples in his day representing the Lower Stage of Savagery, but he felt confident in claiming (ibid.:20) that "neither an art, nor an institution" was developed during this stage.

The acquisition of fishing and the knowledge of the use of fire marked the important transition to the Middle Stage of Savagery in Morgan's scheme, during which humans left their original habitat and spread over different parts of the earth's surface. Fish, Morgan suggested, were the "first kind of artificial food" (ibid.:21). Having acquired the knowledge of the use of fire for cooking, humans became "independent of climate and locality", for fish were "universal in distribution, unlimited in supply, and the only kind of food at all times available". Morgan did not elaborate on the arts and institutions during the period of fishing. Nor did he cite many ethnographic examples. Africa, he said (ibid.:16), was "an ethnical chaos of savagery and barbarism", while Australia and Polynesia were in savagery "pure and simple". The final sub-period of Savagery, the Upper Stage, began with hunting and improved tools, the invention of the bow and arrow. Fishing, then, represented an important step in the history of humans, the beginning of a "new career" (ibid.:20), *prior* to the hunting of terrestrial animals.

In *The Origin* (1942 [1884]) Engels adopted a scheme similar to that of Morgan. In the first part of his book he simply restated Morgan's ideas about the stage of Savagery and the role of fishing during its Middle Stage. In *The German Ideology* he had, however, along with Marx, identified the stages in the history of humans and their progression somewhat differently. Hunting and fishing represented the first sub-stage of the 'undeveloped' stage of production, identified by tribal ownership and the elementary or natural division of labour imposed by the family (see Marx 1964:122).

The discussion by Marx and Engels of primitive societies and the "tribal" stage was partly motivated by rhetorical and political considerations. They turned to the study of primitives not so much to assimilate the exotic but to demolish the familiar – for demonstrating that capitalistic relations of production, private property, exploitation and the state, were not inevitable, but rather the products of certain historical conditions. They greeted Morgan's theories with enthusiasm, since he asserted that during the first stage of evolution, social

life was undifferentiated and the notion of private property nonexistent. Marx and Engels were not only fabricating history, along with many contemporary writers, but they also left themselves unable to deal with primitive society theoretically (see Bloch 1985:16-17). The Marxist theory of society is essentially a conflict model, emphasizing exploitation and class divisions, but if primitive society was undifferentiated and characterized by consensus, harmony and equality, it could hardly be assimilated into a marxist framework.

Marx and Engels had no ethnographic experience, and they therefore had to consult written sources when constructing their schemes of progression. Morgan's writings were particularly useful since some of them were based on relatively detailed and original fieldwork. But even his "expert knowledge" (Engels 1942:19) of particular North American Indian groups could hardly serve as an empirical basis for a theory of the development of humanity from savagery to civilization. As we have seen, Morgan had in fact little to say about the earliest stages in his scheme. In fact the whole reasoning on which he based his Ethnical periods does not show much respect for empirical details. On the one hand he claimed that the division into Ethnical periods directed investigation to tribes which "afford the best exemplification of each status, with the view of making each both standard and illustrative" (1928:16). This would render it possible to treat a particular society "according to its condition of relative advancement" (ibid.:13). But on the other hand timing really did not matter. "It does not affect the main result", Morgan wrote (ibid.), "that different tribes . . . on the same continent . . . are in different conditions at the same time, since for our purpose the *condition* of each is the material fact, the *time* being immaterial". Just how the condition of relative advancement was determined was never made clear. Morgan's theory of evolution rested on a rank order of essential types rather than the reconstruction of chronological sequences.

According to some of the important evolutionary theories of the nineteenth century, then, primitive fishing represented a separate and early stage in the history of humans. Such an idea was underlined in many contemporary accounts of particular groups of people largely dependent on fishing. In his *Journal*, Darwin provides a lengthy description of the fishermen of Tierra del Fuego. Having met a group of Fuegians, Darwin noted (1871:234) that these "poor wretches were stunted in their growth . . . their skins filthy and greasy . . . Viewing such men, one can hardly make oneself believe they are fellow-creatures and inhabitants of the same world". As Meehan points out (1982:5), Darwin's observations on Tierra del Fuego were sometimes used to illuminate archaeological information on shellmiddens discovered in Denmark, the so-called "kitchen-middens". In his book *Prehistoric Times*, Lubbock reproduced Darwin's description, adding that it gave "a vivid and probably correct idea of what might have been seen on the Danish shores long ago" (1913 [1869]:242). Tylor came to a similar conclusion (1916 [1875]:207): "shell-heaps . . . are found here and there all round the coasts of the world . . . for instance on the coast of Denmark, where archaeologists search them for relics of rude Europeans, who, in the Stone age, had a life somewhat like that of Tierra del Fuego".

In a study of the Emeryville shellmounds in California, Uhle expressed opinions similar to those Darwin had expressed for the Fuegians. The collecting of shells, he said, "in itself indicates a low form of human existence" (1907:31). Such opinions clearly had a life of their own. Whereas Lubbock used ethnographic bits to illuminate the records of the past, Uhle was quite prepared to leap in the other direction, from the archaeological record to the ethnographic present:

In all parts of the world, even today, people may be seen on the shore at low water gathering for food the shells uncovered by the retreating tide; ... these people always belong to the lower classes of society, and lead in this manner a primitive as well as a simple life (Uhle 1907:31).

The evolutionary scheme proposed by Morgan has probably few adherents nowadays, even though some twentieth century scholars, notably Childe (1944), continued to discuss the stages of social evolution in similar terms. Morgan's scheme, however, foreshadows some fairly recent ideas, including those of Sauer (1962) regarding the seashore as a "primitive home of man".

Sauer rejects the popular "man the hunter" hypothesis of human origins. He suggests, like Tanner (1981), that primate behaviour fails to indicate that aggressive males were the founders of human society. But while Tanner proposes a "woman the gatherer" hypothesis to explain human origins, Sauer reinvents Morgan's idea of fishing being a new career:

The hypothesis ... is that the path of our evolution turned aside from the common primate course by going to the sea ... The sea, in particular the tidal shore, presented the best opportunity to eat, settle, increase, and learn ... It gave the congenial ecological niche in which animal ethology could become human culture (Sauer 1962:309).

A similar hypothesis of "aquatic man" (perhaps more fantastic) was proposed by Alister Hardy (1960), in a speech delivered to the British Sub-Aqua Club. He suggested that human ancestors, some protohumans in the tropics, were forced because of the competition of "life in the trees" to feed on the sea-shores where they learned to swim and physically adapted to aquatic life:

The graceful shape of Man - or Woman! - is most striking when compared with the clumsy form of the ape. All the curves of the human body have the beauty of a well-designed boat. Man indeed is streamlined (Hardy 1960:643).

We tend to laugh at Hardy's theory of "aquatic man", but some distinguished archaeologists took it quite seriously at the time, while disagreeing with some of its aspects. Dart argued (1960) that human exploitation of aquatic resources was more recent than Hardy suggested but nonetheless much more significant. The adaptation to aquatic regimes, he suggested, did not alter the physiology of humans, it was significant because it sparked a "mental" discovery which

led to civilization. Humans learned to swim by capturing their breath and blowing it into some kind of float. Such knowledge in turn was the source of articulate speech:

Man's first intellectual *tour de force* was equating the power of the spirit within him with that in the float and with that of the air or wind about him, and expressing that concept by specific breaths or words ... (This) intellectual achievement ... transformed the isolated hordes of hunters into those communities of fishermen and boatsmen that launched mankind on the sea of civilization (Dart 1960:1670).

Unfortunately, speech does not preserve well in the archaeological record, but if Dart is right about the late origin of civilization, human physiology must have developed totally independent of culture and the neurological capacity for language must have been "vacant" for tens of thousands of years among silent, at least speechless, hordes of hunters, who finally got into deep waters and started to speak. That is a rather fishy theory of language and human evolution. In fact, such "man the fisher" or sub-aqua-club theories do contradict the archaeological records. Fishing seems to be a much more recent occupation than Sauer and Hardy suggest and there is no indication that fishing preceded hunting and that human physiology was adapted to aquatic life. The oldest remains to indicate an economy in which fishing was of considerable importance, shells and fishbones from Haua Fteah in Libya and Klasies-river in South Africa, have been dated 50 to 80 thousand years old (Yesner 1980). The evidence indicates that marine subsistence progressively intensified by the end of the Pleistocene, from about 20,000 B.C. onwards, and that there was an "explosion" in the use of shell fish during the Holocene in many parts of the world (Bailey 1983:560).

The archaeological interpretation of the 'facts' concerning the recency of human exploitation of aquatic resources is, however, contradictory. Some scholars suggest that, from the point of view of early humans, aquatic environments must have been an inadequate source of food and that the negative evidence must be taken for granted (Schalk 1979:57). Some suggest that it is surprising that marine resources were exploited at all even at this "early" date (Osborn 1977:158). Others suggest that coastal zones must have been quite attractive, a worthwhile challenge, and that people may have exploited them long before the Holocene without leaving us modern groundlings any evidence. Shells are not particularly perishable and some shell-remains are in fact older than the earliest evidence for human exploitation (Cohen 1977:94), but it is still quite possible that earlier coastal adaptations were submerged by rising sea-levels (see, for example, Perlman 1980). Many archaeological debates have centered around the formation of sites and the meaning of existing deposits. The modern debate about the recency or antiquity of coastal adaptations is somewhat peculiar in that existing sites are not the issue but rather the *absence* of any sites at all.

The Category of Fishing

In medieval Europe it was customary to distinguish between three kinds of prey on the basis of the medium in which it moves – i.e. fishing, fowling, and hunting. Walton, for instance, makes much of such a distinction in his book *The Complete Angler* [1653]. It begins with a chapter entitled “A Conference betwixt an Angler, a Falconer, and a Hunter, each commending his Recreation”. In everyday language, the notion of fishing still has similar connotations, usually being broadly defined as the “attempt to catch fish by any means or for any purpose” (*Webster’s Dictionary*). An even broader notion of fishing is implied in Hornell’s cross-cultural survey *Fishing in Many Waters* (1950). Not only does he describe the different ways of fishing among humans, but he also provides a whole chapter on “Animals trained to fish and fishes that angle for their living”. Some animals (including otters, cormorants, and sucker-fish) can be forced into the fishing service of man, while others (including sea birds, “feathered fishers”, and angler-fish) fish for themselves, independent of humans (Hornell 1950:33). Apparently, for Hornell fishing is anything catching anything that is under water.

An interesting early paper which deliberately addressed the problem of definition is that of Hewes (1948). He claims the distinctiveness of fishing activities has two aspects. First, objects behave in a particular manner while in an aquatic substance, due to special conditions of buoyancy, turbulence, solubility and refraction of light. Second, the hunters and their prey occupy different media. For land-dwelling animals like humans, aquatic environments are “a realm which can be exploited as if the exploiters moved in a universe with an additional dimension. The horizontal surface of water bodies, through which or from the edges of which a fisherman inserts his catching devices, has no counterpart in the terrestrial environment” (Hewes 1948:238). This ‘reality’ of the distinction between land hunting and gathering on the one hand and fishing on the other, Hewes argues (*ibid.*:239), suggests a definition of fishing based upon the habitat of its object. Accordingly, he proposes (*ibid.*:239-40) an ‘ecological’ definition of fishing as “that category of human activity which is connected with the capture or gathering, of animals (or plants) which regularly dwell in the water”.

Hewes argues, furthermore, that the fact that hunters and prey occupy different media is of advantage to the hunters. Since the prey is relatively incapable of coping with their presence, its chances of using evasive tactics are very small: “Compared to the relation between the hunter and the hunted animal on land, where the sense organs of both are on a nearly equal basis, *the fisherman holds all the trumps against the fish*” (*ibid.*:238, emphasis added). The difference in medium, however, has contradictory implications and others have emphasized the disadvantages to the fisher. If humans are invisible to the fish so are fish to humans. Thus Morrill argues (1967:407) that folk knowledge of marine organisms is bound to be relatively restricted: “Except for life in very shallow and clear waters, virtually nothing can be known about the inhabitants of the sea except what they look like when (and if) they are caught”. In this sense, fishing is very

much the hunting of an invisible prey in a world where everything is on the move.¹

Such concepts of fishing, as a particular kind of hunting which happens to yield fish, are one element of a widely accepted anthropological scheme for classifying types of technique: gathering, collecting, hunting (including trapping), husbandry (including fish farming), and plant cultivation. Ellen suggests (1982:128-9) these categories have some degree of cross-cultural objectivity, “being recognized indigenously as distinct types”. The argument has been developed that fishing is “best considered as a kind of hunting activity” and that such a notion is implied in many languages (Leap 1977:252). Leap examines fishing related terminologies in 33 languages and concludes that, from the point of view of indigenous speakers, fishing and hunting are similar strategies, “differing only with respect to the commodity which serves as the focus of the subsistence effort” (*ibid.*:256-7). It is necessary, however, to qualify Leap’s generalizations. The classification of aquatic organisms, including “fish”, varies from one society to another. Also, indigenous terminologies do not necessarily distinguish between “hunting” and other subsistence activities, including trapping, collecting and gathering. For instance, the coast Salish, who harpooned salmon and netted seals and ducks, used a broad term which translates as “sea-food producer” (Suttles 1968:63). Another example is the Icelandic term *veiðar* which can be applied to fishing, the gathering of shellfish, and the trapping and hunting of terrestrial animals. A further example is provided by the Gidjingali who use the same term to describe both male and female “hunting prowess”, the skills needed in the pursuit of shellfish as well as more mobile species (Meehan 1982:119).

Much like Medieval hunters distinguished between fishing, fowling and hunting, modern anthropology tends to operate with three concepts of foraging – fishing, gathering and hunting. Both schemes are exemplars of what Dumezil called (1958) the “idéologie tri-partite” of Western culture, the tendency to postulate three categories on the basis of pairs of binary oppositions. Thus the distinction between three modes of foraging is usually based on two oppositions relating to the species exploited (mobile:stationary) and their habitat (terrestrial:aquatic).

Such a classification was used by Murdock (1967:154) in the construction of the *Ethnographic Atlas*. When coding societies according to their economic basis, the relative importance of different modes of subsistence in each case, Murdock used the following categories: (1) “gathering of wild plants and small land fauna”, (2) “hunting, including trapping and fowling”, and (3) “fishing, including shellfishing and the pursuit of large aquatic animals”. Such a broad definition of fishing incorporates different kinds of activities, the capturing of mobile prey and the gathering of passive objects, on the basis of their common link to water. Thus Hewes states that the “distinction between ‘capturing’ and ‘gathering’ should not be emphasized” since “clams may elude the gatherer by burrowing, while highly mobile small fishes are usually acquired by some scooping process with an effort as unlike ‘capture’ as shaking fruit from a tree”

(1948:240). The participants of the Man the Hunter symposium argued (see Lee 1968:41) to the contrary that the pursuit of large aquatic animals was more properly classified as hunting and that shellfishing should be classified as gathering.

Ingold argues (1987:79) that such categories are fraught with ambiguity, even as categories signifying types of activity, and that there can be no reasoned comparison until anthropologists reach agreement on what they mean. The contrast between gathering and hunting, he points out, is usually based on the distinction between collection and pursuit, as fundamentally different methods of procurement, whereas the contrast between fishing and hunting is based on biological classification, the kinds of species obtained. A strict adherence to behavioural or technical criteria would not, he suggests, eliminate the problems of orthodox classifications of food-getting activities. For one thing, in such a scheme the category of fishing would have no place at all, for fish-yielding activities would be included under different categories – gathering, hunting, and entrapment (Ingold 1987:81). Ingold suggests a “more precise” (1987:82) characterization of hunting and gathering which is independent of both technical and biological criteria. For him, the essence of human hunting and gathering, as opposed to animal predation and foraging respectively, lies in the prior intention that motivates the producer and not in some overt behavioural characteristics associated with a particular type of technology or a particular organism, mobile or stationary.

From this perspective, both fishing (in the sense of capturing fish) and the procurement of shellfish may be “hunting”, because both activities involve expectation, excitement and a purposeful search for sites (Ingold 1987:92-3; Meehan 1982:119; Plath and Hill 1987), and not simply (as Hewes argues 1948:240) on the grounds that shellfish may be no less evasive than fish. Thus, Plath and Hill suggest (1987:153) that abalone diving in Japan, a women’s occupation, “deserves to be classed with hunting rather than lumped with other forms of marine collecting” on the grounds that even though the quarry may be sedentary “it can be taken only by aggressive search and seizure”. An expert diver, they argue (ibid.:155), “has to be something of an adrenalin freak”.

Models of Production

Some recent models of fishing go far beyond the narrow context of techniques and food-getting activities in their attempts to embrace its social aspects. However, in some respects they do resemble the ecological and technical models of fishing activities previously discussed. A few examples from the literature will help to illustrate this. Acheson (1981) emphasizes that fishing takes place in a relatively uncertain environment in a physical and a social sense. He suggests (ibid.:277) that for this reason “fishing poses some very unusual constraints and problems”. While adapting to earning a living by exploiting marine resources people seem to manage their lives in similar ways and develop similar social institutions which reduce competition and uncertainty and spread the risks of production.

Crew organization is often flexible and based on voluntary ties but not on structural principles or kinship obligations, to ensure cooperation and the right combination of skills. In sum, Acheson suggests fishing societies have a range of characteristics in common due to the fact that their members have to adapt to similar environments and cope with similar problems.

A similar approach is that of Norr and Norr (1978). Having surveyed the literature on fishing communities, both preindustrial and modern, they conclude (ibid.:163-4) that several “technical and environmental constraints” distinguish fishing from other modes of subsistence. Even though differences in terms of such constraints are associated with differences in work organization, the constraints common to *all* fishing encourage a particular organization, including teamwork and equality among workers (ibid.:169). A further example is Breton’s analysis (1973) of changes in fishing communities in Eastern Canada. Breton argues that different ways of organizing work groups must be seen “basically” as “adaptive strategies” for the exploitation of a given resource (ibid.:412) and that despite their variability, fishing communities in general are characterized by relatively “fluid” social units (ibid.:393). One aspect of this flexibility is the predominance of dyadic contractual ties between autonomous individuals.

These approaches are reminiscent of Steward’s ‘method’ of cultural ecology. Steward defines his concept of “cultural core” as the “constellation of features which are most closely related to subsistence activities and economic arrangements”, including “such social, political, and religious patterns as are empirically determined to be closely connected with these arrangements” (1955:37). In his view, social life is mechanistically adapted to the material world. One of the best-known exemplars of Steward’s approach is his analysis of the band in hunter-gatherer societies. For Steward, the ecological basis of bands arose from the “nature of the game”. In the approaches of Acheson, Breton, and Norr and Norr, the constraints of uncertainty and resultant organizational responses are equivalent to Steward’s cultural core. And fishing crews are somehow equivalent to the band. The social organization of coastal communities is seen to be primarily an adaptive response to the hunting of evasive aquatic prey. In his comparison of work groups (which, significantly, cites Steward’s work), Breton argues for instance (1973:412) that “it is at the level of the factors of production . . . that each type of group achieves greater specificity. Although their formation is influenced by socio-demographic factors, such as residence patterns and community size, they depend primarily upon particular ecological and technical requirements”.

Archaeological accounts of fishing also tend to emphasize technology. Torrence (1983), for instance, contrasts hunting and fishing largely in terms of technology. She points out, following Oswalt (1973), that tools used for the capture of aquatic animals tend to be particularly complex because the medium in which the animals move demands complicated retrieval strategies. The fish must not only be speared but also they must be successfully brought ashore. The emphasis on technology is not surprising, given that archaeologists are concerned primarily with material evidence. Childe comments (1944:23), in his evaluation of ar-

archaeological classification of stages of technological development (Thomesen's "Ages"), that "a classification based on the property relations within which tools were used might be more significant", adding that "However sound this may be in theory, one trouble is that the archaeological record is, to put it mildly, vague as to the social organization of preliterate communities".

Many models of fishing, then, emphasize material and technical constraints. Why such "natural" models have gained the popularity evident from the literature on fishing remains open to question. Alexander argues (1982:257) that the emphasis on ecology in maritime anthropology is due to particular problems encountered by fieldworkers in fishing communities, where "vast differences in the fortunes of individuals may be a critical feature of the economy" and where catches fluctuate from day to day. I do not find this argument convincing for the simple reason that the facts of production do not speak for themselves. Uncertainty may be characteristic of many fisheries but it varies from case to case, depending on the type of species exploited, environmental properties, fishing technology, and degree of co-operation, to name a few factors. The anthropological emphasis on variance in catches seems to be the result of an ethnographic tradition which assumes that the folk belief in the role of expertise and personal fishing skills is both authentic and universal (Pálsson 1988a). Thus, some general anthropological accounts discard entirely the ethnography which suggests the opposite (see, for instance, Acheson 1981). This tradition needs to be explained and not taken for granted.

One reason for the popularity of the natural model of fishing relates to the fascination of the leisure classes of Europe during earlier centuries with the individualistic pursuit of mobile aquatic (and terrestrial) prey. For them, fishing was a non-subsistence activity, with a distinct recreational value or quality on its own. Walton's *Angler* provides a good illustration. He comments on his work that although "it is known I can be *serious* at seasonable times", "the whole Discourse is, . . . a picture of my own disposition, especially in such days and times as I have *laid aside business*, and gone a-fishing" (n.d.:6, emphasis added). For Walton, catching fish was an artistic experiment. He describes angling employing the metaphors of mathematics and poetry: it is "so like Mathematicks, that it can never be fully learnt" (ibid.:7), and "somewhat like poetry" for "he that hopes to be a good angler, must not only bring an inquiring, searching, observing wit, but he must bring a large measure of hope and patience, and a love and propensity to the art itself" (ibid.:27). For Walton and many of his contemporaries, hunting and fishing were, above all, manly activities. Walton describes hunting as "a game for princes and noble persons" (n.d.:20): "it . . . trains up the younger nobility to the use of manly exercises in their riper age . . . How doth it preserve health, and increase strength and activity?" It is easy to see how the Western explorer who usually placed himself at the top of the evolutionary ladder could nonetheless identify with even the most "savage" fisherman as a fellow *homo ludens*. Fishing was a game, a test of sportsmanship. Tylor remarked (1916:214) that "on the whole it is remarkable how little modern fishermen have moved from the methods of the rudest and oldest men". These cultural values

of Western society are reflected in early theories of human evolution. As Tanner points out (1981:23-4), the concept of "man the hunter" pervades most earlier speculations about the life of the first hominids.

Nineteenth century theorists and observers often showed explicit admiration of the pursuit of highly mobile aquatic prey. Lubbock states (1913:539-40), for instance, that "having few weapons, . . . savages acquire a skill which seems almost marvellous": some Patagonia tribes, we are told, live chiefly on fish "which they catch either by diving, or striking them with their darts", South Sea Islanders dive after fish which "takes refuge under the coral rock; thither the diver pursues him and brings him up with a finger in each eye". They are "even more than a match for the shark, which they attack fearlessly with a knife" - and so on.

Given the emphasis on the "manly" aspects of fishing in Western society, it is not surprising that the collection of molluscs has often been dismissed as insignificant. The explorer would not identify with those, mainly women, who were engaged in the mundane collection of relatively stationary shellfish. Morgan, for instance, does not mention shellfishing at all in his definition of Ethnical periods; it cannot belong to the older period of Savagery in his scheme, which was restricted to the collection of fruits and nuts. Being mostly male, Western explorers were mainly interested in what the males were doing; women were simply not the focus of their enquiry. Lubbock (1913:441), for instance, makes a clear conceptual distinction between "the natives" and "their wives" in his account of the Australians: "the natives (are not) able to kill whales for themselves, but when one is washed ashore it is a real godsend to them . . . They rub themselves all over with blubber, and anoint their favourite wives in the same way". The extent of the pursuit of small mobile animals by women has been obscured by a systematic observers' bias (Endicott, cited in Ingold 1987:87). Such pursuit has been regarded as mere "gathering" or "collecting" if performed by women, but as "hunting" or "fishing" if performed by men. Some native classifications seem to be similarly biased. Among the Niuanos of Polynesia, the males at least, smaller fish procured by women are said to be merely "picked up" like shellfish, while the pursuit of big fish is regarded as "proper" hunting (Kirch and Dye 1979:65). Also, the Miskito Indians of Nicaragua make a distinction between the "flesh" of small game and hunted "meat", the latter being only procured by men (Nietschmann 1972:55).

The Natural and the Social

The natural models of fishing are not without their faults and critics. Alexander points out (1982:259) that while there are real empirical differences between fishing and other modes of subsistence (agriculture), the use of such differences establishes a framework which gives misplaced importance to marine ecology. "Almost unwittingly", he says, "ecological functionalism has become the major mode of explanation". Indeed, the notion of adaptation - to the "nature of the game", as Steward put it - used by many writers on fishing is similar to

that employed by the founders of ecological functionalism.

Several authors have pointed out that there has been a tendency, "something of a *tour de force*" (McCay 1981:2), to look for parallels between trawling, "industrial hunting" (Andersen and Wadel 1972), and small-scale fishing. Faris remarks (1977:235) that a taxonomy which regards such widely different organizational forms as worthy of comparison on the grounds of their common link to water makes as much sense as "a biological classification which lumps together whales, fish, and submarines and separates them from bats, birds and airplanes". From this perspective, the category of fishing is a clumsy taxonomic lumpfish.

The organization, adaptive significance, and cross-cultural semblance of fishing crews may be interesting topics in their own right. However, the emphasis on the material basis of organizational forms diverts attention from social relations of production. The point is that in drawing attention to organizational responses to ecological relations one removes social life from the center of inquiry. Not only does the materialist emphasis conceal differences between fishing societies, it also ignores differences between the fishing activities of humans and those of other species. Ingold argues (1986:252-3) that in Steward's discussion (1955) of the band, social organization reduces to a behaviour pattern, an instrumental apparatus pertaining to ecological or material relations and not the social relations of production, and that such an approach makes no distinction between the sociality of animals and the purposive activity of socially constituted human beings. The same may be said of many accounts of "co-adventure" in fishing. Thus, the comparative work of Hornell (1950) deliberately correlates the fishing activities of humans and animals. Hornell describes (ibid.:28) the "purposeful" action of pelicans which follow "a familiar and well-tried plan" when they drive schools of fish into shallow water. Such "co-operative" fishing, he says, is "carried out *in much the same way*" as the fish-drives of Indian villagers (ibid.:29, emphasis added). In Japan, we are told, humans sometimes fish with the aid of cormorants. A group of cormorants, which have a ring of metal around the lower part of the neck, spread out in their search for fish and when one is caught it is swallowed. If the fish is small it passes the ring and becomes the "perquisite of the bird", but if too large to pass it remains in the gullet pouch. Every now and then the "master" lifts the bird from the water and forges it to disgorge the contents of the pouch.

There is no mention of the social relations of humans in Hornell's account, but the cormorants are said to be "exceedingly jealous of their rank and of the privileges belonging to seniority" (1950:32). Even though both birds and humans interact with each other in the process of extracting fish, and in both cases some may be more equal than others, it would be wrong to assume that both groups are doing the same. Just as the spider does not "hunt" when it captures insects (see Ingold 1987:95), in the sense that, unlike humans, it captures its prey without any consciousness of self and time, the cormorant does not fish.

While Hornell's account of fishing as the application of a technique may be somewhat extreme, many attempts at defining and classifying production sys-

tems similarly emphasize technical relations and types of activity. Ellen (1982:129), for instance, regards fishing, hunting, and gathering as "techniques" associated with specific (pristine) ecosystems. Many anthropologists, inspired by the Durkheimian distinction between the natural individual and the social or superorganic, seem to operate with a natural model of production as something taking place in nature, outside society. Thus Cook (1973:40) makes a distinction between the *forces* of production ("the relationships . . . that emerge from the concrete, observable technical features of any work situation") and the *social* relations of production. Given such distinctions, production must take place in nature. The individual producer, much like the Saussurean speaker, is regarded as an asocial being engaged in the technical act of extraction. The appropriation of nature only becomes social when the resources extracted from nature enter relations of sharing or exchange *among* individuals - when the Durkheimian producers associate and take off into the clouds of the superorganic, becoming social persons constructed by society. Marx proposed a social or constitutive model of production with very different conceptions of individual and society. According to such a model the notion of the individual as being independent of community is an empty abstraction since the very individuality and agency of human beings derive from their involvement in social relations (see Ingold 1986). The human being, Marx argued (1973:84), is "in the most literal sense . . . an animal which can individuate itself only in the midst of society".

The natural models of fishing are anthropologically inadequate as they fail to appreciate the ways in which production systems are differentiated with respect to their social relations. Fishing involves more than technique and extraction. Alternative *social* models are already emerging in the literature on fishing communities. McCay (1978), for instance, has called for the incorporation of social relations of production into anthropological analyses of social and ecological change.

The model of Fig. 1 is one way of distinguishing between kinds of fishing on the basis of social relations. The "access" axis in the model distinguishes between societies in terms of restrictions of access to fishing territories and aquatic resources. In some cases fishing territories are open to all, in other case areas of the sea are defined as the property of particular groups or individuals. The "production" axis in the model distinguishes between societies in terms of circulation, the motivation of the producers and the destination of surplus and of the products themselves. Production may be primarily for use or primarily for exchange (for examples and the use of the latter distinction in economic anthropology, see, for instance, Durrenberger 1984). The rules pertaining to both access and production are embedded in social relations and obviously they are not unrelated. However, there is no intrinsic relationship between mode of access and mode of circulation.

To illustrate the potential of the model of Fig. 1, it provides an opportunity to examine the relationship between the organization of production and the cognitive appropriation of nature, the way in which relations of production are reflected in cultural accounts of natural phenomena. I am not proposing a rigid

		PRODUCTION	
		For Use	For Exchange
MODE OF ACCESS	Closed	1	3
	Open	2	4

Figure 1. *A Social Model of Fishing Economies*

law of one-to-one correspondence between production systems and cultural accounts. Humans confront nature in terms of a model of their own making, and to do anthropology is to make statements about probabilities, not categorical rules. Models of production, however, are not selected at random. The social relations in which fishing takes place constrain the construction and design of indigenous models of the art of fishing.

Lake fishing in Meybrat (see Miedema 1986) is an example of a subsistence economy where access to aquatic resources is a matter of ownership of fishing territories (this is category 1 in the model of Fig. 1). While some fishing grounds are open to all or belonging to particular villages, the most productive areas are the "private property" of local Big Men or a group of relatives. Ownership of fishing grounds is inherited in the male as well as the female line and justified with reference to myths. Fish are caught mainly for home consumption but also for gifts and barter on local markets. In such an economy people do not find it necessary to account for any personal differences there may be in effort and success. They deliberately *avoid* comparison between individuals by fishing in groups, for a person who is successful while others at the same time are less fortunate "runs the risk of being suspected of having used ... black magic" (Miedema 1986:16).

The differences between categories 2, 3, and 4 in the model may be illustrated by successive transformations in Icelandic fishing (see Pálsson 1988a, 1989). From the time of settlement to the beginning of the twentieth century there was a ceiling on productive targets and in general fishing territories were not subject to rules of ownership. This stagnant household economy (an example of category 2) brought with it a particular folk model of fishing. Icelandic foremen (those in charge of fishing boats), much like their Meybrat colleagues, were not neces-

sarily credited or blamed for the size of their catch. In the folk analysis, the catch was supplied by nature. During the first decades of the twentieth century markets for Icelandic fish developed. Fishing was no longer for subsistence and productive targets became indefinite, but access to fishing territories remained open (at this stage, then, Icelandic fishing represented category 4 in the model). The labor power of the fishing skipper became a commodity on a highly competitive market. Differences in fishiness had to be explained, but new social relations defined the range of appropriate explanations. The skipper was credited or blamed for the success or failure of fishing operations. During the last decade, capitalist production in fishing has been subject to an intricate institutionalized machinery, partly because of the threat of overexploitation. Iceland has claimed national ownership of coastal fishing territories and there is a new ceiling on production. This economy (representing category 3 in the model) fosters the notion of 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.

Reality, of course, is much more complex than this simple model suggests. The ethnography shows that access to fishing territories is restricted in various ways (see Durrenberger and Pálsson 1987). Likewise, a simple distinction between production for use and production for exchange insufficiently represents the variety of production systems there is. On the other hand, such a model brings out four clear and very different cases which serves to illustrate the fundamental point that fisheries do not exist of themselves but are embedded in historical and social systems.

Conclusions

There are good reasons why anthropologists should bother to construct and refine concepts of modes of subsistence. Some kind of conceptual umbrella is needed to appreciate the different ways in which humans appropriate nature. Kroeber complains (1963:169) that "anthropologists ... tend to value personal expertise, technical virtuosity, cleverness in novelty, and do not yet clearly recognize the fundamental value of the humble but indispensable task of classifying - that is, structuring - our body of knowledge, ...". Obviously, everyday classifications of subsistence strategies need to be examined and refined every now and then, if only "to reassure their users that they are more than accidental classifications, and are valid rubrics beyond our own language or culture" (Hewes 1948:238). If anthropology deserves to be called a comparative science, the units of comparison must be established on some logical basis and not just on the grounds that they are traditional. However, what kinds of attributes one adopts as criteria of classification for comparative purposes depends on the theory informing the analysis. Focusing on the boundary between land and water may be helpful for drawing contrasts between economic or social systems which are organized in *similar* ways. Thus, it may be argued that hunter-gatherers of aquatic resources are significantly different from hunter-gatherers of terrestrial resources in terms of settlement pattern and social complexity (Pálsson 1988).

However, there is no point in establishing a unitary category of fishing, for in so doing we would have to ignore the social relations in which production is necessarily to be found.

Even though for most nineteenth century observers fishing represented the bottom of the scale of social evolution, "the ruder stages of culture" (Tylor 1916:207), generally they were fascinated with the skills of even the most "primitive" fishermen. The modern anthropological emphasis on the process of extracting mobile prey, whether aquatic or terrestrial, is related to the fascination of the leisure classes of medieval Europe with manly activities and the vicissitudes of nature. Some modern ethnographers continue to be impressed by the skills of their informants, much like the sportsmen of earlier centuries, including Lubbock, Tylor and Walton. The reasons why anthropologists tend to account for fishing in such terms have something to do with the fact that fishing takes place in widely different social contexts. One just cannot speak of the social relations of *fishing* – a set of relations which unites all fishing societies, as diverse groups as Trobriand argonauts, Japanese shell-divers and Icelandic trawlermen, and sets them apart from the rest of humanity – as one could possibly speak, for example, of the social relations of band society. The search for a common denominator is therefore bound to draw attention to technical acts and ecological context, the extraction of fish from their aquatic habitat. But in order to unfold the nature of the social relations in which production takes place one has to abandon such an approach. An alternative model of production is needed which emphasizes that the act of fishing, or any extractive activity, is inevitably embedded in social relations. I have emphasized a model which distinguishes between fishing societies in terms of restrictions of access and circulation of products. Such a model is helpful for understanding differences in indigenous models of the 'art' of catching fish.

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Notes

1. In an earlier work (Pálsson 1982:213) I suggested in a similar vein that the relative absence of visual access to an important part of the exploited environment poses particular cognitive problems for fisherfolk. The properties of aquatic environments, I argued, demand that the producers are actively engaged in constructing what goes on underwater on the basis of present and previous catches. In this sense, fishing involves, much like the archaeologists' pursuit of the past, fundamental problems in going beyond the information given, of inference from a limited set of facts.

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Maori Fishing Rights

Ideological Developments and Practical Impacts

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ABSTRACT Fishing rights have emerged as a key issue in New Zealand ethnic politics in recent years. The Maori people have launched successful legal assaults against the Ministry of Agriculture and Fisheries' quota management system and now stand to gain ownership of 50% of New Zealand's fish stocks. This represents a sudden reversal of a sad history of indigenous fishing rights cases that were lost in the courts over the last 100 years. This paper attempts to account for this turn in fortune by examining interactions between changes in fisheries management and attitudes towards the Treaty of Waitangi. It concentrates on the development and impact of ideological statements about fishing rights made by the Waitangi Tribunal, a governmental body established to hear Maori grievances in regard to the treaty. The way in which the problem of Maori fishing rights is framed by the tribunal is shown to be a crucial ingredient in a wider sociocultural process which has fundamentally changed the role New Zealand's autochthonous people will play in the fishing industry.

The New Zealand Maori are currently involved in a major ethnic revival. A key element of this social movement involves the articulation of an ideology which calls for the state to become bicultural, by officially incorporating Maori culture into the public sector (Levine 1987). While political action has been taken on a number of fronts simultaneously, the one which has been the most contentious and prominent concerns claims to ownership and control of New Zealand's fisheries. These have been articulated recently at the first gathering of representatives of all New Zealand's tribes (*Te Runanga a Tangaroa* in Porirua 1985), by the New Zealand Maori Council, and before the Waitangi Tribunal.¹ They are at least in part a response to changes in fishery management, particularly the institution of a quota system in 1986.

In September 1988, the government proposed controversial legislation, the Maori Fisheries Bill, that would give the Maori people annual increments of 2.5% of the national fishing quota for a period of twenty years to total 50% of the national quota. The legislation was drafted after the failure of Crown and Maori representatives to reach agreement about the ownership of New Zealand's fish stock. These negotiations had been set in motion by a High Court action taken by the Maori Council to stop the issuing of fishing quotas in northern New Zealand.

While the Maori Council case was being heard, the Waitangi Tribunal was independently considering a claim about fishing rights made on behalf of the Muriwhenua tribes of the northern part of the North Island; Ngati Kuri, Te Aupouri, Te Rarawa, Ngai Takoto and Ngai Kahu. This region of New Zealand is a long isthmus which has a large ratio of sea to land area. The Maori there have