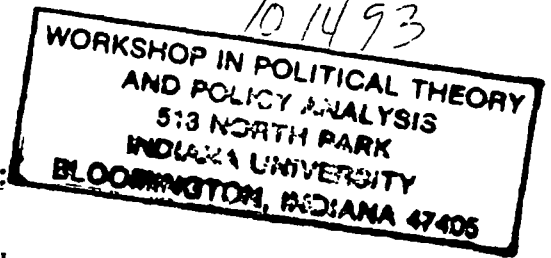


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From commons to quotas:

Inequality in the Icelandic fishery

by

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Abstract

The quota system in the Icelandic cod fishery, introduced in 1983, divides access to an important national resource among those who happened to be boat owners when the system was introduced. This paper examines the evolution of the quota system, the distribution of quotas, and ongoing debates on equity and ownership. Data on quota allocations indicate that quotas are increasingly concentrated in the hands of the biggest companies. While originally the system was presented as a short-term experiment, with the fisheries laws passed by the Icelandic Parliament in 1990 it was reinforced and extended into the distant future. The appropriative regime of Icelanders, I argue, has been thoroughly transformed through a complex process of negotiations and lobbying among scientists, user-groups, politicians, and the general public. As a result, quota owners have gained de facto ownership of fishing stocks. The new laws, then, represent a significant step in the evolution of permanent property rights. Not only has a permanent right of access been given to an exclusive group, but this right is increasingly being turned into a marketable commodity.

Keywords: fishing, quotas, Iceland, inequality

There is a growing literature on appropriative regimes in fisheries. One important problem is to understand the development and significance of such regimes - their construction, logic, and historical transformation (McCay and Acheson 1987, Durrenberger and Pálsson 1987b, Scott 1989, Bromley 1991). While in some societies access to fishing is typically open - this was generally the case in Iceland prior to the introduction of a quota system in 1983 (Durrenberger and Pálsson 1987a) - in some other societies access is restricted by informal 'territorial' means - in the lobster fishery of Maine in the United States, for example (Acheson 1988), to have access to fishing space means to belong to a harbour 'gang', to respect its rules and to identify with its members. How such systems of open access and informal use rights are translated into formal property institutions remains a puzzle to anthropologists, no less than resource managers and indigenous producers in many parts of the world. Sometimes the transition takes place within a framework of ethnic conflict; see, for example, Davis (1989) on the Yolngu of Australia and Levine on the Maori of New Zealand (1989). I argue in this paper that over the last ten years the appropriative regime of Icelanders has been thoroughly transformed through a complex process of 'contracting' and privatizing, involving scientists, user-groups, politicians, and the general public.¹

The quota system in the Icelandic cod fishery divides access to an important national resource among those who happened to be boat owners when the system was introduced, in 1983. I examine the evolution of the quota system, the distribution of quotas, and ongoing debates on equity and ownership. Data on quota allocations indicate that quotas are increasingly concentrated in the hands of the biggest companies. While originally the system was presented as a short-term experiment, with the fisheries laws passed by the Icelandic Parliament in 1990 it was reinforced and extended into the distant future. As a result, quota owners have gained *de facto* ownership of fishing stocks. The new laws, then, represent a significant step in the evolution of permanent property rights. Not only has a permanent right of access been given to an exclusive group, but this right is increasingly being turned into a marketable commodity (elsewhere I have discussed the background to this transformation in some detail (see Pálsson 1991)). Discourse is a key concept in analyses of the contracting for property rights. For me, discourses are historically-grounded, social practices, 'practices that systematically form the objects of which they speak' (Foucault 1972:49).

In several fisheries in different parts of the world, fishing stocks are being privatized through social discourse and the complex power contest it entails. First, the resource is appropriated by regional or national authorities and later on the total allowable catch for a season is divided among producers, often the owners of boats (see, for instance, Dewees 1989, McCay and Creed 1990). At a still later stage, such temporary privileges are turned into a marketable commodity. Such management regimes are generally being introduced on the grounds that privatization is the only alternative to the 'tragedy of the commons'. The market forces, it is argued, will inevitably ensure efficiency and sustainable use of resources. These arguments are seductive and powerful in the modern world and there is no need to reproduce them here (see, for example, Neher *et*

al. 1989). Many scholars, however, have raised serious doubts and criticisms (McCay and Acheson 1987, Van Ginkel 1989).

The Icelandic quota system

In 1976, the Icelandic government extended the national fishing limits to 200 miles to be able to prevent overfishing of its major fishing stocks, particularly cod. This marked the end of the last Cod War with Britain and West Germany. The domestic fishing fleet, however, continued to grow and catches, relative to effort, continued to decline. The first serious limitations on the fishing effort of Icelandic boats, for the purpose of redressing the ecological balance, were temporary bans on fishing on particular grounds. By 1982, politicians and interest groups were increasingly of the opinion that more radical measures would be needed to limit effort and prevent the 'collapse' of the cod stock. In 1983 the total annual cod catch was even less than the amount recommended by fisheries biologists, and the forecast for 1984 was bleak. The government decided to reduce the cod quota for 1984 to 220 thousand tons, from an estimated catch of around 290 thousand tons. At the annual conference of the Fisheries Association, most interest groups were rather unexpectedly in favour of a boat-quota system suggested by the Union of Boat-Owners, a system that would divide this reduced catch within the industry itself. The precise allocation of catches was debated, until it was agreed late in 1983 that each boat was to be allocated an annual quota on the basis of its average catch over the past three years. This meant that some boats would get higher quotas than the rest of the fleet, a fundamental departure from traditional policy. The individual quota system was recommended by the fishing industry and was to be administered by the Ministry of Fisheries. While the demand for the system came from within the industry, it would hardly have been instituted if it had not been advocated by academics. The writings of several marine biologists and economists paved the way for a 'scientific' discourse on fishing and the 'rational' management that the quota system represents. In particular, Gíslason (1977) and Árnason (1977) argued, with reference to the 'tragedy of the commons' and the works of Scott Gordon and Anthony Scott, that 'overfishing' was inevitable as long as the fishing grounds were defined as 'common property', i.e. where access was free for everyone.

In the original quota system, the simplest avenue to the resource, to quotas, was to buy a boat. Other transfers of quotas (see below) were subject to the approval of the Ministry of Fisheries. In the new system which came into effect in January 1990, quotas became a fully marketable commodity, independent of boat-ownership. Also, the system was applied to most species of fish and every kind of fishery (with the exception of 'sport fishing'). The quota system has been revised several times (see Table 1 for some important moments in the history of the system). With the changes in the fisheries legislation in 1990, the 'experimental' period of the system had a rather formal ending; the quota system was extended into the distant future.

Table 1. Some important moments in the history of the quota system
 Year Change

1975	The Marine Research Institute issue a 'Black Report' predicting the collapse of the cod fishery
1976	200- miles extension of fishing limits The end of the last Cod War
1977	Limited temporary closures in the cod fishery
1981	Total allowable catch of cod is set to 430.000 tons
1982	Total allowable catch of cod 450.000 tons
1983	Quota system introduced, for one year, for the main species Total allowable catch of cod 370.000 tons
1984	Quota system takes effect Total allowable catch of cod 220.000 tons Revision of quota laws
1985	Effort-quotas introduced as an alternative to catch-quotas Total allowable catch of cod 250.000 tons
1986	Total allowable catch of cod 300.000 tons
1987	Total allowable catch of cod 330.000 tons
1988	All fishing boats, six tons or larger, are subject to permits New laws: fishing stocks on Icelandic fishing grounds are defined as "the common property of the Icelandic nation" Total allowable catch of cod 315.000 tons
1989	Total allowable catch of cod 260.000 tons
1990	Indefinite application of quota-laws Redefinition of "fishing year" (1 Sept. to 31 August) All fishing (except 'sport fishing') is subject to quota regulations The selling of permanent quotas is allowed The laws define special permits for "sport fishing for private consumption" Total allowable catch of cod 238.000 tons
1991	Total allowable catch of cod 245.000 tons

When the quota system was first applied there were heated debates about what to allocate and to whom. Boat-owners argued for a 'catch-quota', to be allocated to their boats. Some fishermen, on the other hand, advocated an 'effort-quota', to be allocated to skippers or crews. In fishing, they argued, value was created through the application of their expertise and labour power and not that of the equipment, the boat and the fishing gear (Pálsson and Durrenberger 1990). A boat-quota would be grossly unfair since the 'best' skippers would be assigned the same quota as the 'bad' ones. When allocated the same amount of effort, measured in number of allowable fishing days in a season, the 'good' and the 'bad' skipper would catch different amounts of fish. Under a system of effort-quotas successful skippers would be rewarded for their exceptional contribution to the economy by an extra catch. The authorities partly conceded to such criticism when revising the regulatory framework of the quota system in 1985.

Boat-owners were offered the right to choose between effort and catch. It turned out, however, that relatively few were willing to bet on the effort-quota and the skipper. In the new laws of 1990, this right was abolished and all quotas became catch-quotas. The quota system, in fact, seems to have significantly affected discourse on production and agency and the relative power of fishermen and boat owners. Fishermen nowadays often express the view that the custom of awarding the most successful skipper of the year a particular prize on Fishermen's Day is a little archaic. The hunting element of fishing (veiðimennska), they point out, is rapidly disappearing with increasing governmental control of the industry. As fishing is being 'reduced' to business transactions, success becomes less a matter of fishiness than capital and economics. The top skippers are simply privileged 'quota-kings' (kvótakóngar). Significantly, after the winter season of 1989 the skipper highest on the national records of catches (the 'catch-king'), one of the most celebrated skippers in the fleet, publicly declared that he would not accept the prize to which he was entitled. The competition, he argued, was 'unjust' since some skippers were barred from the competition due to the small quota assigned to them. The local committee responsible for the awarding of medals and trophies on Fishermen's Day decided to abolish the custom of giving prizes for exceptional fishing success.

The main stated objective of the quota system was to control the total annual catch of the most important species (cod, in particular) and to make fishing more economical. While the cost side of the economic equation seems to have been significantly reduced, there has been less success as regards the ecological objective. The proportion of immature cod in the reported catch has been increasing. Also, under the present system fishermen tend to dump low-quality species, immature fish, and excess catch for which they have no quota. Recent surveys indicate that great quantities of fish are dumped into the sea, and much greater than Icelanders generally like to believe. Illegitimate discarding of fish creates many problems in relation to law enforcement, the policing of the seas. To make sure that all the catch is landed is both expensive and technically difficult. Another problem relates to the reliability of models of recruitment and stock size. If many of the fish that are caught are never landed or reported, estimations of stock size, the whole basis of quota allocations, are obviously rather imprecise. Despite the limited success of the new system in securing the reproductive potential of the stocks, politicians have been willing to institutionalise a radical departure from the previous system.

The present political debate about fisheries management is not so much concerned with the technical details of quota allocation as with the larger social and political consequences of the system. The most serious criticism of the present system is that it transfers immense resources into the hands of a relatively small group of people, comprised of state officials (the Ministry of Fisheries) and the owners of the biggest boats and the fishing companies. This privileged access, as we shall see, this 'gift' from the state, is increasingly being transferred into capital. Alternative management schemes have been extensively discussed by fishermen, politicians, and the general public. There are demands

for a return to the prior system of temporal closure of particular fishing areas. Such a development, however, is unlikely, given the inadequacies in economic and ecological terms of the previous system. There are also demands for communal quotas where local authorities would be given a certain amount of autonomy as regards the allocation of quotas in their areas, a limited revival of the grass roots politics of earlier decades. Furthermore, some critics of the present system favour public auctions of quotas, in which the state would receive incomes in return for the selling of the right to fish. One of the big issues in the management debate is the extent to which a free-market solution to fisheries problems, in the form of a quota-system, can be reconciled with co-management and other ways of delegating responsibility to the local level. Similar debates are taking place in many other fisheries beside the Icelandic one (McGoodwin 1990, Pinkerton 1989).

A recent national survey by the Social Science Institute at the University of Iceland (in June 1991) provides interesting information about the attitudes of Icelanders in relation to fisheries policy (see Viðhorf til sjávarútvegsmála). A representative sample of Icelanders (N = 1500) were asked what kind of fisheries policy they would favour. No less than 95% thought that the fishing stocks in Icelandic waters should be defined, both now and in the future, as the 'property of the nation'. About 54% of respondents favoured a system whereby boat owners would pay to the state (a 'resource fee') for their access to the fishing stocks, for their annual quota. About 21% favoured a quota system without any payments to the state, 6% opted for some alternative systems, while 20% either had not made up their mind or refused to respond. Perhaps the most significant finding of the survey was that while the majority of respondents seemed to favour some kind of quota system, only a tiny minority of Icelanders (2%) preferred a system allocating the fishing resources to one group or another in the form of permanent property. The latter system, I will argue, is precisely the one that Parliament opted for despite many claims to the contrary. To account for the discrepancy between public opinion and the essence of the laws which eventually were passed, would require detailed analyses of the social use of science in Iceland, of political discourse, party politics, and lobbying. In what follows, I attempt to provide some rather general observations.

The politics of fisheries management

With the quota system, capitalist production in Icelandic fishing has been subject to 'scientific' control and stringent regulations. In Iceland, some marine biological research already occurred at the beginning of the twentieth century, but full-time research started later, in the 1940s (Jónsson 1988). The present Marine Research Institute was established in 1965. Fishermen and the general public regarded the first marine biologists as strange and eccentric people. The disrespect seems to have been mutual. In the beginning, the relationship between fishermen and biologists was characterised by shared ignorance. Each group tended to view the discourse of the other as entirely irrelevant. Later on, with the increased involvement of the state in the management of the industry, fishermen and biologists confronted each other, armed with their competing theories and

rationalities. Marine biology brought with it a new rationality, including the notion of homeostatic fisheries, a 'hárvesting' orientation which assumes that humans are in total control of the ecological situation.

Marine biologists have been careful not to enter public debates on how to divide access to fishing stocks, emphasising that their expertise only allows them to define the upper limits, the total catch. This was important in order to establish the credibility and legitimacy of scientific discourse among fishermen. Given the political importance of marine biological knowledge and the close co-operation between the Ministry of Fisheries and the Marine Research Institute, however, a radical distinction between advice and responsibility, between science and politics, is hard to accept. Often, the scientists have defined the terms of discourse. This was the case, for instance, during one of the Cod Wars when the the Marine Research Institute issued its 'Black Report' (Durrenberger and Pálsson 1987a).

One issue in the management debate involves the relative importance of emotions and rationality. Marine scientists like to think of themselves as the 'conscience of the nation' - as a sensible force, essential for matching the emotional and irrational impulses of fishermen (Jakobsson 1989). Recent campaigns of environmental and animal welfare organisations against the killing of whales and seals have very much brought this issue to the fore, but in this case fishermen and biologists tend to agree. Several foreign organisations, including Greenpeace International, have effectively opposed the hunting of marine mammals by Icelanders with international campaigns for the boycotting of Icelandic fish products. Whaling and sealing are of minor economic significance for Icelanders, but fishermen and biologists emphasise that the marine mammals in question are not endangered species. Giving in to the pressures of the environmentalists, they say, would invite a general, emotional and highly-dangerous fisheries policy. Generally, both marine scientists and economists have presented nature, at least the coastal ecosystem, as a predictable, domesticated domain, as being under control. The contrary voice, however, is also raised at times. Knowledge of the ecosystem, it is argued, especially by fishermen, is too imperfect for making reliable forecasts. Some people even go further, arguing that multi-species fisheries are chaotic systems with too many uncertainties for any kind of control. Such arguments have been developed in the scholarly literature on fisheries management by Wilson (1982) and some others.

With the quota system, researchers at the Marine Research Institute and the University of Iceland have become an authoritative group. At the same time the discourse of fishermen is increasingly being suppressed or silenced. With the growing importance of biological and economic information for resource management, then, fishermen have become less powerful than before. Some of the key elements of the model of success of previous decades are likely to persist as long as the social constraints of competition and prestige prevail. At the public level of fisheries management, however, the skipper's rationality is being replaced by the more 'plausible' rationality of scientists and the political rhetorics of boat-owners. Fishermen complain that all initiative is being taken from them and that 'everything is being banned'. Sometimes they question the basic

assumptions of biologists, economists, and managers. One skipper has argued, for instance, that 'knowledge of fish migrations and the size of different stocks is still infinitely small' and that 'those who have come to know the fishing grounds around Iceland, during a lifelong career in fishing, must become mute when the wise men (spekingar) announce their precise measurements of the stocks, to the ton' (Hermannsson 1984). It is understandable that skippers, aware of the discrepancy between reality and the 'pessimistic' forecasts of the past (the 'Black Report' in particular), fail to be impressed with the rhetoric of the scientists. Fishermen, then, have become increasingly dominated by techno-scientific knowledge and the agencies of the state. Confronted with the details of scientific research, fishermen have become powerless, in their words 'mute' (klumsa). From their point of view, management has become increasingly the business of wise men who speak a 'strange' language.

Equity and distribution

Inequality is a key issue in present debates on fisheries management. The following account is based on an extensive data set that is now being developed. This data set includes every quota allocation in Iceland from the beginning of the quota system in 1984. A couple of warnings must be spelled out, however. To begin with, data for different years are not quite comparable as there were different regulations about quota allocations, in particular the species involved. Also, the present results are tentative conclusions that should be taken with a grain of salt.

The basic unit applied in quota allocations is that of 'cod equivalents' (þorskígildi). A boat owner may have access to several species with different market values (cod, haddock, saith, etc.), but the overall size of each individual quota is measured in cod equivalents. In the beginning, the transfer of cod equivalents took two forms: On the one hand, boat owners might sell their boats and thereby their share of the catch. On the other hand, quota owners might 'sell' their quota for any one year, effectively renting the catch to which they are entitled. In both cases an independent market was developed whereby the original boat owners were able to turn their free licenses into profits in accordance with supply and demand. If we look first at permanent transfers of quotas, that is changes in boat ownership (see Table 2), there is a substantial increase in such transfers from 1984 to 1990, when quotas were separated from boat-ownership. The proportion of cod values that has changed hands in the form of the sale of vessels has almost doubled in six years, from 5.24% to 10.36%. It is difficult to estimate the amount of capital involved in such transactions, but there have been reports of vessels being sold at a price two or even three times that of their 'real' value. Permanent access to the resource, therefore, has been no less valuable in monetary terms than the vessel itself.

Although in the beginning quotas were attached to boats, there were four kinds of possibilities of quota transfers from one boat to another: 1) transfers between the boats of the same owner or company; 2) transfers between different boat owners within the same fishing community; 3) exchanges in kind (equivalent quotas) between boat owners; and 4) transfers between different communities.

The temporary rent of quotas (2, 3, and 4), that is between boat-owners, has been subject to some formal but relatively ineffective restrictions and, again, it is difficult to estimate the amount of capital involved. It seems, however, that a sizable part of the annual quota, possibly one quarter, has been changing hands. Given the price of a permanent license, embodied in the excessive value of fishing vessels on the free market, one can assume that temporary tenure is generally being sold at very high prices. The estimated total value of outstanding quotas in 1984 was \$24 million US and \$35 million US in 1985 (Árnason 1986). These figures indicate, Árnason argues, the economic rents produced by the quota system.

Table 2. Changes in boat ownership 1984-1990*

Years	No. of vessels	Proportion (%)		
		Number	Tonnage	Cod equivalents
1984-1985	64	9.6	6.4	5.24
1986-1987	78	11.7	8.3	6.23
1987-1988	108	16.24	9.6	5.24
1988-1989	112	16.7	12.4	9.07
1989-1990	112	17.3	13.5	10.36

* The relative values - indicating number of vessels, tonnage, and cod equivalents involved in the sale of vessels - are based on the absolute value for the earlier year. Data for 1985 are missing.

One way to look at equity is to examine changes in the distribution of the total annual quota. This should allow us to see the aggregate result of the sale of vessels that we observed above (see Table 2). If quotas are increasingly changing hands, through the sale of vessels, where are they going? Table 3 shows changes in the number of quota holders and the relative size of the quota of the biggest companies. First, there is a significant reduction (17%) in the number of quota holders, from 542 to 451. Secondly, quotas are increasingly concentrated at the top, especially over the last years. On average, each quota holder in the top 10% increases his or her share from 0.85% in 1984 to 0.94% in 1990. The distribution of quotas becomes increasingly positively skewed and polarized (reflected by an increasing and positive values for skewness and kurtosis over the years 1988 to 1990). This means that quotas are becoming concentrated and that there is a widening gap between the small and big quota holders. This concentration would be even more stark if one considered the market value of quotas and not simply tonnage or cod equivalents. Also, it is likely that with the separation of quotas from boats in 1990 and the free market for quotas this concentration has intensified.

Table 3. Changes in the distribution of quotas*

Year	No. of quota holders	Share of 10 largest companies	Average quota-share of top 10%	Skewness	Kurtosis	St. dev.	Mean
1984	542	17.86%	.85%	5.309	43.376	.312	.169
1985							
1986	507	17.78%	.87%	5.156	37.959	.315	.159
1987	499	17.11%	.89%	4.800	33.030	.310	.159
1988	496	17.02%	.90%	4.452	27.895	.308	.162
1989	477	17.30%	.91%	4.599	29.889	.315	.167
1990	451	20.59%	.94%	4.768	33.482	.330	.178
1992		27.89%					

* The figure for 1992 is based on a newspaper report (Pressan 10 Sept. 1992). Data for 1985 are missing.

Not surprisingly, given these conclusions, national discourse on the distribution of wealth has begun to change. Now, fishworkers have called for a redefinition of the prevailing notion of 'interest group', partly as a result of recent developments in marketing and processing. Over the last years a significant part of the cod catch has been sold directly to foreign markets without being processed in Iceland. This development, which is largely a response to the demands of European consumers for fresh fish, means that employment is being reduced domestically. Also, more and more vessels process and freeze the catch at sea. Some people have, therefore, questioned the privileged access of either fishermen or boat-owners, the 'lords of the sea' (sægreifar) as the latter are sometimes called, to the most valuable national resource, arguing that fishing is becoming like third world mining where raw materials are exported with little returns to the national economy. Whether this is a likely development or not, the sheer thought of the possibility has triggered a lively debate on power and production. The 'interest groups' of those involved with fisheries management are no longer unanimously seen to be restricted to owners of fishing plants, boat-operators, and fishermen. Processing workers, many of whom are women, are demanding their share of the cake, protesting against unemployment and refusing to be treated as 'outsiders', as economic and political 'invisibles'.

Stinting or enclosure?

Berkes and Pockock observe (1987:500), one may note, in relation to the Canadian Lake Erie fisheries, that the use of 'past performance' as a criterion for quota allocation, a criterion similar to the one applied in Iceland, was a major mistake. The benefits largely go to the original participants. In Icelandic as well as Canadian political debate, the question of who owns the fish in the sea has

become a central issue. Boat owners have usually claimed that they alone are entitled to the rents produced by the quota system. The traditional usufruct rights of the owner of the equipment, they argue, should be transferred into permanent 'ownership' of the fishing stocks in the form of a fixed share of the catch, a transferable quota. For them, the quota system is only a logical extension of the cod wars and the arguments favoured by the Icelandic government; a 'rational' use of resources, they claim, can only be expected as long as the ones who use them are dependent upon them as owners. Fishermen often insist, on the other hand, that as the 'real' producers of wealth they are entitled to quotas. As one skipper put it: 'who has more rights concerning quota-payments . . . , the man who hires crew-men, the one who finds the fish and brings the catch ashore, or the boy who inherits the boat of his father but has never been at sea . . . ?' (Jónsson 1990). The allocation of quotas to skippers on the basis of their fishiness, some skippers have argued, would be economical in the long run; costs and effort might be significantly reduced by making fishing the privilege of the most efficient skippers.

During debates on the fisheries laws in 1990, some members of Parliament raised doubts about the 'legality' of the quota system, arguing that proposed privileges of access might imply permanent, private ownership which contradicted some of the basic tenets of the Icelandic constitution regarding public access to resources. Lawyers concluded that the kind of quota system under discussion in Parliament was in full agreement with the constitution and that quotas did not represent permanent, private property (Gunnarsson and Líndal 1990). The laws which eventually were passed reinforced such a conclusion by stating quite categorically that the aim of the authorities was not to establish private, government-protected ownership.

It seems clear that boat owners have become de facto owners of the fishing stocks. The tax-authorities have decided, one may note, that quotas are to be reported as 'property' on tax-forms and that the selling of quotas involves a form of 'income'. While in the early stages, quota systems only imitate private property rights, later on true property rights, similar to those found in western agriculture, may develop. As Scott points out (1989:33), such an evolution of appropriative regimes 'can be expected to continue until the owner has a share in management decisions regarding the catch; and, further still, until he has an owner's share in management of the biomass and its environment'. In a popular phrase from the political campaigns for the last Parliamentary elections two years ago, the quota system represents 'the biggest theft in the history of Iceland'.

The most serious challenge to the hegemony of the boat-owners in the political arena has come from the academia, in particular from economists favouring the selling of fishing licences (Hjelgason and Jónsson 1990). The selling of access in the form of licences on an open market, the economists have argued, would not only maximise efficiency, it would also ensure that the rents produced by the quota system were distributed among the public, the real owners of fish and other national resources. This argument, however, has not received much public approval. For one thing, an important counter-argument has been offered by rural politicians who fear that in the future power and economic resources will

be increasingly concentrated in the capital city, and, possibly, even abroad. A fully free market, they claim, where the right to fish in Icelandic waters would be sold to the highest bidders on international markets, would mean that the trawlers of multinational companies that were expelled during the cod wars would be invited to revisit Icelandic waters. Another reason why the argument of those who favour the selling of fishing licences has not been met with general approval has to do with the rhetorical use of language in debates on management. The opponents of a free market solution - the boat owners, in particular - have emphasised that selling licences would in effect represent a 'resource-tax' (auðlindaskattur), catching on the present dislike of taxes of all kinds and the dangers of the 'socialist', authoritarian state. Why should the extraction of fish, they say, traditionally a free enterprise, now be subject to taxation and governmental control, in an age of bankruptcies and general economic difficulties? For the time being, it seems, boat owners have won the battle over 'ownership' and economic rents with their skilful manipulation of political parties and the mass media.

The history of the quota system in the Icelandic cod fishery indicates some of the potential political implications of a narrowly technical or 'scientific' approach to the problem of management, even in a relatively democratic system. A discriminatory but seemingly fair and neutral policy has been adopted. The fear of environmental disaster has not so much resulted in successful attempts to redress the ecological balance; rather it has instituted a policy which radically alters the balance amongst social groups. Skocpol points out (1988) that neo-Marxist analyses that present the politics of advanced capitalist states as automatic, functional responses to 'class' interest often fail to adequately deal with particular historical realities. This is not to say, however, that social discourse is immune to capitalist interests and that class politics are irrelevant for the understanding of state policies; only to allow for important contextual differences in forms of discourse and the function and design of institutional structures. In the Icelandic fishery, I have argued above, a small and well-defined class has managed to appropriate a highly important national resource for themselves, through skilful lobbying vis-à-vis the state and various interest groups, through intervention in party politics, and firm control of public discourse.

Much of the critical scholarly discussion of privatization and quota systems hinges on what exactly is meant by terms such as 'commons', 'private', and 'individual'. Among students of European history, there is a tendency to blindly adopt fairly recent definitions, viewing such concepts 'through a nineteenth-century - that is, bourgeois - lens, defining them as essences rather than relations' (Roseberry 1991:21). Williams points out that the term 'individual' originally meant 'indivisible', that which cannot be divided, like the unity of the Trinity. The change in meaning, he suggests, the adoption of the modern meaning emphasizing distinction from others, 'is a record in language of an extraordinary social and political history' (Williams 1976:133). The concept of the 'commons' has been through a similar treatment. While in medieval Europe it referred to

'community property subject to community control' (Hanna 1990:159), nowadays it is frequently associated with 'tragedies' and 'open access'. Such problems of 'translation' have also been discussed with respect to the anthropological literature on property relations among contemporary hunter-gatherers (Ingold *et al.* 1988).

The relationship between nature and society is another thorny issue in modern debates on resource management. Indeed, there is a strange paradox in Western environmental discourse in this respect. On the one hand, we tend to project an image of resource management as an a-political enterprise, the 'rational' application of mathematical equations independent of social discourse, assuming at the same time that the 'optimum' use of resource-bases necessitates that they are parcelled up and privatized. On the other hand, modern environmental discourse is very much characterized by the 'postmodern condition' (Harvey 1989) and 'neototemic' thought (Willis 1990:6), a discourse that emphasizes, much like medieval European discourse, the interrelatedness of nature and society (Merchant 1980) - the 'individual' nature of human life, in the original sense of the term. As Gurevich shows, in medieval societies 'man thought of himself as an integral part of the world . . . His interrelation with nature was so intensive and thorough that he could not look at it from without; he was inside it' (Gurevich 1992:297). While such a view seems to have been regaining ground, for a variety of reasons, some scientific communities stubbornly stick to Baconian notions of scientific methods, of 'observation', and the domination of nature. Economists, marine biologists, and policy makers in fisheries often remain firmly committed to a positivist and modernist stance, curiously innocent of recent developments in social and ecological theory, presenting themselves as detached observers, as pure analysts of the economic and material world (Durrenberger 1990, McGuire 1991). The view, however, which presents the pursuit of environmental knowledge as a relatively straightforward accumulation of 'facts' and radically separates knowledge of nature and the social context in which it is produced has come increasingly under attack in several fields of scholarship, including anthropology and environmental history. One illustration of this kind of scientism in the discourse on resource management is the fact that inequality and distribution are pushed to the margin or simply ignored - as irrelevant externalities or theoretical distractions, comparable to the category of 'society' in structural linguistics (Pálsson 1991, Pálsson and Durrenberger 1992).

While scientific knowledge is often conceived as an 'objective' representation of the external world, in reality the scientific enterprise cannot be fully separated from its social environment. McEvoy contends (1988:214), for instance, that Hardin's thesis of the tragedy of the commons represents a 'mythology' of resource use, a model 'in narrative form for the genesis and essence of environmental problems'. The claim that access to the ocean is open for everyone in most fishing societies, and that this is the root of all environmental problems, clearly needs to be qualified. The theory of the tragedy of the commons, then, is an important means for making history, an authoritative claim with a social force of its own, and not simply an attempt to understand the

world. Indeed, the argument of the tragedy of the commons has been forcefully used by governments, companies, and individuals when pressing for fishing quotas or for leasehold or freehold rights to be granted to individuals on areas formerly used by the local community. A scholarly model of nature and resource-use like the tragedy of the commons is no more a straightforward or 'factual' representation of reality, independent of the social context in which it is produced, than the 'folk' models of indigenous producers (Bird 1987, Worster 1988). Paradigmatic, discursive change is not simply a progressive movement from ideology to science, from ignorance to truth, for scientific models are themselves the products of history.

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Note

1. The notion of 'contracting' is borrowed from Libecap (1989) who develops a micro-oriented approach for understanding the bargaining and lobby efforts involved in the dormation of property rights.

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