Compliance in the Fishery Protection Zone Around Svalbard

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The 200-mile Fishery Protection Zone around Svalbard was established by the Norwegian government in 1977 and has been an issue of international dispute ever since. The disagreement is rooted in different interpretations of the 1920 Svalbard Treaty and has led Norway to choose a gentle enforcement of fishery regulations in the area. In practice, this has implied that violators in the Svalbard Zone are not punished. Violation statistics from the Norwegian Coast Guard nevertheless reveal a high degree of compliance by fishermen. The main question of the present article is how this compliance can be explained. It is apparently problematic to account for it through a traditional coercion-based approach since the threat of sanctions is absent. It is suggested that actual compliance is the result of such various factors as legitimacy, discursive measures, "indirect coercion" or "creeping compliance," diplomatic negotiations, and sometimes also a lack of incentive on the part of fishermen to violate the rules.

Keywords compliance, fishery control, enforcement, legitimacy, Svalbard, the Barents Sea

Compliance: A Theoretical Introduction[1]

The issue of exploitation and management of common property resources has attracted the interest of social scientists from a wide range of subfields, varying from law and economics to sociology and anthropology. The focal question in the debate is how the social setting can be organized so as to provide a favorable basis for the maintenance of conditionally renewable resources. This mainly includes the discussion of *property rights* (who shall have access to the resource?) and of *regulation* (how shall the exploitation of the resource be regulated?). However, efforts to limit participation and to manage the exploitation bring little gain if the established regulations are not complied with by those who utilize the resource.

Compliance has hardly been a major theme per se in the literature on common property resources,[2] but the main perspectives in this debate have inherent assumptions of how compliance on the part of individuals can best be achieved. Theorists within the *tragedy of the commons* or *common property* tradition stress the need for *coercion* in any management of natural resources.[3] Individuals are invariably prone to maximize their personal gain without regard to the detrimental effect of this behavior on the common good, the argument goes. Force or coercion on the part of public authorities is

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perceived as the necessary tool to induce compliance among individual actors. The rationale for *coercive measures* as the basic *compliance mechanism* in a resource management system is to make individuals choose compliance as the preferred alternative; the threat of sanctions in the event of violation is intended to render violation less attractive than compliance.

The most comprehensive alternative approach to the *tragedy of the commons* model, so-called *comanagement* or *cooperative action theory,* for its part emphasizes the role of legitimacy in bringing about compliance among individuals.[4] The main argument within this rather complex body of literature is that individuals choose to comply when they perceive regulations, or the process through which they have been produced, as legitimate. Various theorists within this tradition stress various strategies for enhancing legitimacy, such as the delegation of power to user-groups within specific functional or geographical areas, the participation of user-group representatives in bodies where regulations are formed, and the acceptance and formalization by state authorities of traditional regulation mechanisms based on social norms within the community using the commons. On a general basis, the goal of public authorities becomes one of persuading or convincing the users of the resource of the fairness of regulations. The means, or compliance mechanism, becomes *discursive measures* of various sorts.

Finally, it is acknowledged that compliance will sometimes emerge as a preferred option on the part of individuals even in the absence of external influence.[5] Subjects may simply conclude that the expected value of compliance outweighs that of violation. Hence, we can sum up various explanations to a compliant behavior in three main categories:

1. Users of a common property resource choose to comply with regulations *not* as a result of any measures on the part of the management regime.
2. Users of a common property resource choose to comply with regulations as a result of *coercive* measures on the part of the management regime.
3. Users of a common property resource choose to comply with regulations as a result of *discursive* measures on the part of the management regime.

The Barents Sea Fisheries: An Empirical Background

The Barents Sea is one of the world's richest fishing grounds. Extending over an area of some 1.3 million square kilometers,[6] it comprises those parts of the Nordic Ocean lying between North Cape on the Norwegian mainland, South Cape on the Spitzbergen Island of the Svalbard Archipelago, and the Russian archipelagos Novaya Zemlya and Franz Josef Land. For the purpose of discussing the management of the fish resources in the area, however, the fish banks to the west, north, and east of Spitzbergen are usually also included in the concept of *the Barents Sea.*

The basis for the abundant fish resources in the Barents Sea[7] is the high production of plankton in the area. Both groundfish and pelagic species are traditionally important in the Barents Sea fisheries. Economically, the Norwegian Arctic cod is by far the most important species in the area. Other groundfish species of importance are haddock, redfish, saithe, and Greenland halibut. Herring and capelin are the key pelagic species in the area. As they serve as food to groundfish and marine mammals, they are crucial to the functioning of the ecosystem. In addition, there is a considerable shrimp fishery, as well as a limited whaling and sealing industry, in the Barents Sea.

Since the introduction of exclusive economic zones (EEZs) in 1976, Norway and the Soviet Union/Russian Federation have undertaken a joint management of the above-

mentioned marine resources. The management regime comprises a Russian–Norwegian cooperation, in addition to management procedures on a national level, within the fields of research, regulation, and compliance control.[8] First, Norwegian and Russian marine biologists cooperate in the assessment of the Barents Sea fish stocks under the auspices of the International Council for the Exploration of the Sea (ICES). Second, the Joint Russian–Norwegian Fishery Commission meets every autumn to establish total allowable catches (TACs) for the three joint stocks: cod, haddock, and capelin. Cod and haddock are shared on a 50–50 basis, whereas the capelin quota is shared 60–40 in Norway's favor. In addition, quotas of the parties' exclusive stocks are exchanged. Russia has traditionally given a share of its cod quota to Norway in return for a share of Norway's quotas of redfish, herring, and Greenland halibut. Third, a cooperation between Russian and Norwegian authorities within the field of compliance control, mainly involving an exchange of information, has been in operation since 1993.[9]

On a national level, quotas are shared among individual shipowners, and catch limitations specified. In both Norway and the Russian Federation, this is done in corporate organs, where authorities, science, fishermen's associations, trade unions, and more are represented. In Norway, *Reguleringsrådet* ("the Regulation Council") is the enacting body, while final decisions are made in the Ministry of Fisheries. The policies implemented could be understood as "a compromise between what can be defended biologically, legitimized politically and accepted on social and economic grounds."[10] It should be noted that representatives of the fishermen are given a say in the regulation process, with the explicit aim of enhancing legitimacy of regulations. Compliance control is performed by the military Coast Guard at sea and a special control branch of the Directorate of Fisheries on shore. The Directorate keeps continuous track of the amount of a ship's or a foreign nation's quota that remains, and can take steps to halt the fishing when it is fished up. At sea, inspectors check the fishing gear (e.g., the mesh size), the catch (composition of the catch,[11] size of the fish, presence of fry), and the actual quantity of fish on board at the time of inspection.

In Russia, the association of fishery enterprises in the northern basin, *Sevryba* ("North Fish"), has so far been the primary actor in the quota distribution.[12] Control is carried out by a civilian fishery inspection service, *Murmanrybvod.* The military Border Guard is, however, at the time of writing (winter 1998) claiming the right to take over control responsibilities. A compromise between the two institutions, e.g., use of civilian inspectors on board military Border Guard vessels, is expected.[13]

As a resource management regime, the Russian-Norwegian cooperation has proven fairly successful in recent years. Most stocks have grown steadily since the late 1980s, and the Barents Sea fisheries at the moment appear to be among the most prosperous in the world.[14] The TAC of Norwegian Arctic cod has amounted to approximately 700,000–800,000 tons since the early 1990s. A slight decline has, however, been observed lately. As a result also of uncertainty connected to the estimation models, the quota for 1998 was accordingly reduced to some 600,000 tons.[15]

National Jurisdiction in the Barents Sea

At the beginning of the Third UN Conference on the Law of the Sea (UNCLOS) in 1975, the principle of 200-mile EEZs was adopted. The right and responsibility to manage marine resources within 200 nautical miles of the baselines was thus transferred to the coastal states. Both Norway and the Soviet Union established their EEZs in 1976.[16] As the two states could not agree on the principle for drawing a delimitation line be-

tween their respective zones,[17] a temporary "Grey Zone" arrangement was reached in 1977 to avoid unregulated fishing in the contended area. This arrangement implies that Norway and Russia regulate and control their own fishermen and the third-country fishermen licensed by each of them, and abstain from interfering with the activities of the other party's vessels (or vessels licensed by it). The arrangement is explicitly temporary, and the agreement is subject to annual renewal to remain in force.[18]

Another area of contention is the Fishery Protection Zone around Svalbard. Norway claims the right to establish an EEZ around the archipelago, but has so far refrained from taking this step due to protests from the other signatory powers of the Svalbard Treaty of 1920.[19] The other parties claim that the nondiscriminatory code of the Treaty applies to the ocean area around the archipelago, while it is Norway's stance that it refers only to the mainland and its internal waters.[20]

The waters around Svalbard are important grazing grounds for juvenile cod stocks, and the Protection Zone, determined in 1977, represents a "middle course" which is supposed to secure for this young fish a certain protection from unregulated fishing. In practice, most technical catch regulations applying to the Norwegian Economic Zone, e.g., limitations in mesh size, by-catch, and intermingling of undersized specimens, are introduced also under the auspices of the Protection Zone around Svalbard. Separate quotas are generally not set for the zone;[21] Norwegian and Russian fishermen can take their catch in whichever zone they prefer if they have been licensed for that particular zone, which is usually a formality. The point is that each vessel has only one quota for the entire Barents Sea.

The Protection Zone is not recognized by any of the other states which have had quotas in the area since the introduction of the EEZs.[22] To avoid provocation, Norway has refrained from penalizing violators in this area.[23] To secure a nondiscriminatory basis, this applies also to Norwegian fishermen. Soviet/Russian vessels, which have been fishing in the zone regularly since its establishment, do not report to Norwegian authorities about their catches in the area, and the Russian captains consistently refuse to sign the inspection forms of the Norwegian Coast Guard.[24] The Russians do, however, welcome Norwegian inspectors on board, and the same inspection procedures are pursued here as in the Norwegian EEZ.[25] In practice, then, Norway's provisions for the Protection Zone are very similar to those of its EEZ.[26] The main difference, apart from the lack of sanctions for violations, is the fact that the Svalbard Zone is not *defined* as an exclusive economic zone. See Figure 1 for an overview of Barents Sea jurisdiction.

Fishing Activity in the Svalbard Zone[27]

The fishing activity in the Svalbard Zone fluctuates widely throughout the year and with the species being caught.[28] Among the different nationalities engaged in the fisheries here, Russian vessels are by far the most numerous. In the most intensive periods, more than a hundred Russian trawlers may be fishing for cod, shrimp, or capelin in the Svalbard Zone.[29] The cod fishery usually takes place around Bear Island in late spring and summertime; the trawlers move northwards after the cessation of winter/spring cod fishery on the banks in the Norwegian and Russian economic zones.[30] Shrimp is caught all year round and in nearly all areas of the Svalbard Zone. Russian fishermen normally intensify their shrimp fishery towards the end of the year when the cod quota is coming to an end.[31] In years when capelin harvests are allowed to be caught, a considerable Russian fishery for this species takes place to the southeast of Spitzbergen Island.[32]

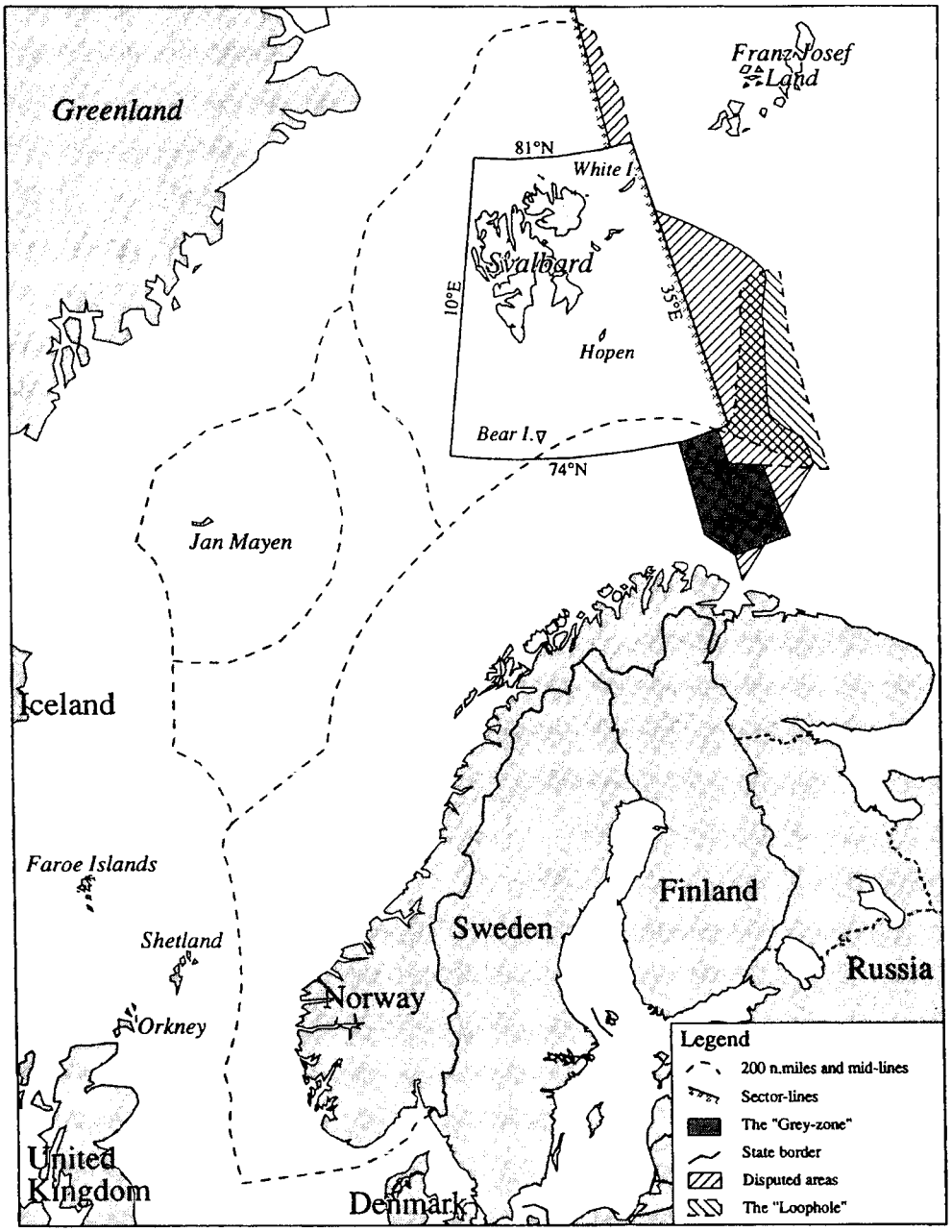

Figure 1. Legal complexities of the Barents Sea. (Source: Alf Håkon Hoel, "The Barents Sea: Fisheries Resources for Europe and Russia," in *The Barents Region: Cooperation in Arctic Europe,* ed. Olav Schram Stokke and Ola Tunander (London: Sage Publications, 1994), 117. Reprinted with the permission of the copyright holder for the map, Olav Schram Stokke, Research Director, The Fridtjof Nansen Institute, Lysaker, Norway.)

The activity on the part of Norwegian and third-country fishermen in the Svalbard Zone is far less intensive. Approximately 70%–75% of the Norwegian cod quota is allotted to coastal fishers, hence only a few Norwegian trawlers fish for cod in the Barents Sea.[33] Since the major part of this fishery takes place in the Norwegian Economic Zone (NEZ), only a very few Norwegian trawlers occasionally fish for cod in the Svalbard Zone.[34] The Norwegian shrimp fishery around Svalbard is, however, more substantial. Some dozen Norwegian shrimp vessels are at times active in the Svalbard Zone.[35] Unlike those of the Russians, Norwegian vessels take their capelin quota on the banks closer to the Norwegian mainland.[36]

The third countries' presence in the Svalbard Zone is also rather limited, the most important being the Spanish summer fishery for cod.[37] Every summer, 10–12 twin trawlers arrive in the Svalbard Zone to take the Spanish cod quota in the Barents Sea.[38] This fishery is, however, quite limited in time since the quota is usually fished up in the course of 4–6 weeks.[39] Apart from the Spaniards, vessels from other European Union (EU) countries occasionally enter the Svalbard Zone, although most of their fishing activity in the Barents Sea takes place in the NEZ.[40] To sum up, the Russian presence in the Svalbard Zone is quite heavy for considerable parts of the year, with vessels fishing for shrimp, cod, and capelin (when the latter is allowed). Furthermore. there is a relatively important Norwegian shrimp fishery in the zone. The fishery for cod by Norwegian and third-country vessels is, however, quite limited.

Violation Rates in the Svalbard Zone

Violation statistics from the Norwegian Coast Guard are the best indicator of compliance with regulations by the fishermen in the Barents Sea.[41] In the following discussion, some figures from an investigation I have conducted on the violation rates in the Barents Sea fisheries from 1986 to 1992 are rendered.[42] The investigation involved the categorization of each violation revealed by the Coast Guard during this period into four main types of violation. Some of the most important trends concerning compliance vs. noncompliance will be provided here. Figures for the NEZ/Grey Zone are occasionally given for the sake of comparison.[43]

As indicated in Table 1, the inspection activity of the Norwegian Coast Guard re-

Table 1
Number of inspections carried out by the Norwegian Coast Guard in the NEZ/Grey Zone and the Protection Zone around Svalbard (the Svalbard Zone) in the period 1986–1992

	NEZ/Grey Zone	Svalbard Zone
1986	525	573
1987	509	548
1988	778	489
1989	810	481
1990	551	580
1991	545	557
1992	596	604

mained at a relatively stable level in the period. The number of inspections has generally been around 500–600 per year in each zone; in 1988 and 1989 it increased to around 800 in the NEZ/Grey Zone, but was simultaneously somewhat reduced in the Svalbard Zone.

In this context, we shall not focus on the development over time, i.e., the increase or decrease in violations from year to year.[44] Rather, our intention is to get a grasp of the total average level of violations. As follows from Table 2, the percentage of inspections that have resulted in the revealing of a violation was around 20%–25% in NEZ/Grey Zone and 40%–45% in the Svalbard Zone. The difference between the two zones is mainly explained by the fact that all Soviet/Russian fishermen in the Svalbard Zone receive a written warning for not having reported to Norwegian authorities before commencing fishing activities there, due to the unsettled jurisdictional dispute concerning this zone arrangement. Indeed, these absent reports are more a matter of contention between the governments of Norway and the Russian Federation than of noncompliance on the part of individual Russian fishermen. If we correct for this factor by leaving out all reactions given for lacking reports in both the NEZ/Grey Zone and the Svalbard Zone, we find that violation rates do not differ dramatically between the two zones.

The above figures indicate the share of inspections that have resulted in a reaction of some sort on the part of the Coast Guard. One should, however, also take a closer look at the seriousness of the violations. The numbers in Tables 2 and 3 include the following three types of reaction: *oral warning, written warning,* and *arrest.*[45] The distribution between the types of reaction in the Svalbard Zone is shown in Table 4. Table 5 then gives an indication of which types of violations for which these reactions are given.

Tables 4 and 5 show that the majority of reactions in the Svalbard Zone are given in the form of written warnings (around 40%), and that most of these are given for lacking reports (around 30%). Fishing with illegal gear has also been discovered in quite a few instances, but it was only in 1987 and 1988 that the amount of inspections resulting in a reaction to such violations exceeded 10%. This is particularly interesting since Soviet fishermen were instructed by their authorities to use 125-mm mesh size in the Svalbard Zone (this was the legal size in the Soviet Economic Zone and the Grey Zone),[46] which is 10 mm less than the minimum size determined by Norwegian authorities for both the NEZ/Grey Zone and the Svalbard Zone. One might therefore have expected the violation rates for lacking reports and fishing with illegal gear to lie at approximately the same level; Soviet/Russian fishermen, who predominate in the Svalbard Zone fish-

Table 2
Percentage of inspections resulting in a reaction of some sort

	NEZ/Grey Zone	Svalbard Zone
1986	22%	44%
1987	31%	40%
1988	24%	46%
1989	21%	36%
1990	21%	34%
1991	19%	42%
1992	26%	55%

Table 3
Percentage of inspections resulting in a reaction except for failure to report and other violations not detrimental to the resource basis[a]

	NEZ/Grey Zone	Svalbard Zone
1986	14%	7%
1987	16%	20%
1988	9%	28%
1989	10%	16%
1990	11%	8%
1991	11%	11%
1992	16%	16%

[a]Violations "not detrimental to the resource basis" mainly include the infringement of claims aimed at improving conditions for the control body to conduct inspections (for instance, insufficient marking of the vessel), the use of incorrect flags or signalling, and practical details such as a broken rung in the ladder by which the inspector boards the vessel.

ery, are instructed both to use an undersized trawl net mesh and not to report to Norwegian authorities, *and should fear no sanctions from the Norwegian Coast Guard for either violation.* I shall return to possible explanations for this divergence. Finally, it should be noted that reports of underreporting of catch and fishing in closed areas are very rare in the Svalbard Zone.[47]

To the extent that we accept these statistical data on methodological grounds (see next section), we can draw the conclusion that *most fishermen in the Svalbard Zone comply with most regulations most of the time.* In the following discussion, the three

Table 4
Percentage of inspections in the Svalbard Zone resulting in oral warning, written warning, or arrest[a]

	Oral warning	Written warning	Arrest
1986	3%	41%	0%
1987	2%	37%	0%
1988	6%	38%	2%
1989	3%	34%	0%
1990	2%	32%	0%
1991	1%	41%	1%
1992	2%	52%	1%

[a]As noted, Norway has refrained from punishing violators in the Fishery Protection Zone around Svalbard. However, the figures in this table include inspections in the internal waters of Svalbard, where there have been a handful of arrests over the years.

Table 5
Percentage of inspections in the Svalbard Zone resulting in a reaction to four different types of violation[a]

	Lacking reports	Underreporting of catch	Fishing in closed areas	Fishing with illegal gear
1986	29%	0%	0%	7%
1987	29%	4%	2%	14%
1988	29%	4%	1%	23%
1989	29%	6%	0%	10%
1990	31%	2%	0%	6%
1991	36%	3%	0%	9%
1992	47%	7%	0%	9%

[a]The variance between these figures and those presented in Table 2 is explained by the fact that one inspection sometimes results in the detection of several different types of violations.

main categories of explanations for the compliant behavior already mentioned will be addressed in relation to the Svalbard Zone fishery.[48] First, however, a brief discussion of the validity of the statistical data will be presented.

Do Violation Rates Reflect Actual Compliance?

The point of departure for this study was that statistics have something to tell us about the events that actually take place in the Svalbard Zone fisheries and its surveillance. They provide an indication of inspection frequency, the share of inspections that result in the detection of some kind of violation, and what types of violations predominate. However, such statistics are too often taken at face value by both researchers and others. In order to get a more comprehensive grasp of them, it is essential to understand what they *do* say something about, and what they do *not* say anything about. Here is an example of the interpretive process to which such data should be subjected in this particular case.

"Ninety-nine Percent of Russians Fishing in the Svalbard Zone Violate Norwegian Law" might be a possible headline to a story from the Barents Sea fisheries in a Norwegian newspaper.[49] How is this to be understood? First, these figures reflect the international dispute over the Svalbard Zone. Russia has not formally acknowledged it, and all Russian fishermen are obliged by their government to *not* notify Norwegian authorities before they start fishing there. Accordingly, they are given a written warning when inspected by the Norwegian Coast Guard because Norwegian fishing regulations require such notification. It could be argued, however, that this practice functions to the satisfaction of both Norway and Russia. Russia is not forced into a formal acceptance of the Svalbard Zone, while the responsibility for managing the fishing resources there is, in effect, vested with Norway. Thus, the fact that statistics show that 99% of Russian fishermen are violators merely reflects the intergovernmental dispute; the Russians nevertheless comply with the rules of the "tacit regime" of the Svalbard Zone.

If we, then, omit violations of this kind, we might find that, say, 10% of Russians are still accused of violations of some sort. Does this imply that the hypothesis "Ten

Percent of Russian Fishermen in the Svalbard Zone Violate Norwegian Law" is established as a fact? Hardly. A whole range of questions have to be answered if we are to approach an assessment of the hypothesis. First, the selection of inspected vessels may be highly unrepresentative of the total population. Inspectors may, for instance, have concentrated their effort on expected violators (which implies that the actual violation rate is probably lower), or the really notorious violators may have their techniques for escaping inspection (which implies that the actual violation rate is higher).[50] Second, we can ask whether inspectors are adequately prepared for their task of uncovering violations. To the degree that fishermen's shrewdness exceeds inspectors' knowledge and experience, actual violation rates are probably higher than statistics indicate. Third, it is not given that inspectors in all situations are sufficiently motivated in detecting violations. What if inspectors have themselves previously been fishermen and "recognize" the difficulties of always sticking to established procedures? What if they have become acquainted with the fishermen they are supposed to control and find it more agreeable to chat over a cup of coffee than check the catch? What if they do check the catch, and detect a violation, but choose to disregard it in order not to spoil the good atmosphere? What if they find a specific rule stupid and decide not to report violations of it? Or what if they generally have no motivation to look for violations and find it more important to give an impression that "control is going on" (i.e., performing and recording inspections while not really looking for violations)? The result would, once again, be that the actual violation frequency is higher than reflected in official statistics. Finally, we can question whether reporting routines are reliable. For instance, if a vessel is given a warning for several different violations, is it not possible that the computer operator on shore chooses to record only one or two of them? For this operator, it may be argued, the important thing is that once it has been indicated on the screen that the vessel was given a warning, the "reason for warning" column has to be filled in as well. The accuracy of recording may not be considered an issue of importance because measures towards the vessel have already been taken, and the Coast Guard statistics are mainly intended to reflect the frequency of given reactions, not which types of offense they were given for.

The one thing we can be sure of in this respect is that statistics do not offer a "photograph," but at best only an indication, of actual fisherman behavior. Inspection frequency is never "sufficiently high" as long as each catch vessel does not have an inspector permanently on board.[51] Furthermore, it is probably naive to assume that inspectors possess the competence to reveal every violation committed. There might also be instances where inspectors choose to disregard detected violations, but the fact that inspectors of the Norwegian Coast Guard are military personnel to some extent speaks against this. Officers are usually strongly committed to carrying out orders, and the organization culture of the control body thus functions as a sort of buffer towards lenient control practices.[52] In conclusion, then, we should maintain our initial assumption that violation statistics give us a relatively valid indication of fisherman compliance, but be aware that actual compliance is probably somewhat lower (although we cannot exclude that it is in fact higher) than these figures indicate.[53]

Compliance Unaffected by Management Measures

To the extent that fishermen in the Svalbard Zone actually do comply with regulations, we can assume that compliance partly stems from calculations that are unaffected by the efforts of the management regime. In such cases, the preferred behavior of fishermen more or less accidentally coincides with the type of behavior prescribed by authorities

as legal; it is not the result of particular management efforts to guide their behavior in such a direction. Under given circumstances, especially in periods with ample fish resources, fishermen have little to gain economically in violating the rules. There is no need to underreport fish and overfish quotas if the allotted quota is perceived as adequate in the first place. In some situations, this might even be detrimental to fishermen within quite a short time frame since great quantities of fish flowing into the market usually lead to a reduction in prices. Likewise, if resources are plentiful, fishermen would hardly violate the rules of fishing gear and the size of fish since undersized specimens are usually less valuable than larger ones. For the same reason, fishing in closed areas (usually containing a high proportion of undersized fish) might not be perceived as an option to be considered.

It is, however, not obvious that this type of explanation can be used to account for compliance in the Barents Sea fisheries during the actual period of investigation. Quite to the contrary, resources were exceptionally scarce at the end of the 1980s and the beginning of the 1990s.[54] A serious resource crisis set in in 1986–1987; quotas were cut dramatically and set at an all-time low in 1990. Only in 1993 did they reach the level of 1986. As a result, one can assume that it was necessary for the fishermen to take all they could possibly get.

Still, one should not exclude this explanation completely. When Soviet/Russian fishermen chose to use 135-mm instead of 125-mm nets, as permitted by Soviet/Russian authorities, the reason may have been that they simply did not bother to change gear when entering the Svalbard Zone from the NEZ; the expected value of decreasing the mesh size by 10 mm might have been exceeded by the costs in terms of time and labor needed to perform this operation. Furthermore, the planned economy of the Soviet system might itself to some degree have functioned as an incentive structure that rendered violations unprofitable. The possible profit Soviet fishermen could gain by overfishing their quota or using illegal fishing gear might not have made up for the effort it took to do so.[55] Once again, however, there is a counterargument. Soviet fishermen were obliged to fulfill their plans and were rewarded when they overfulfilled them. In the severe resource situation at the end of the 1980s and the beginning of the 1990s, the expected extra gain of using illegal catch gear might well have made a difference. In sum, then, it appears problematic to argue that compliance unaffected by management efforts is a main explanation for fisherman compliance in the Svalbard Zone in the period 1986–1992.

Indirect Coercion

It is obvious that compliance among fishermen in the Svalbard Zone cannot be explained as a result of coercive measures involving sanctions by management authorities in the event of violation. Norwegian authorities simply do not punish violators in the Svalbard Zone.[56] We may, however, discern a certain amount of compliant behavior here that can be said to follow from a sort of "indirect coercion." By this, I mean that violators are not punished directly by the executing management authorities in the ocean area in question, but nevertheless face the possibility of certain reactions to their behavior there from authorities within their own state.

While Soviet/Russian authorities urge their fishermen to use 125-mm nets and to not report to Norwegian authorities while fishing in the Svalbard Zone, they hardly instruct them to underreport catch or fish in areas closed by Norway due to an excessive presence of undersized fish. On the one hand, it is important for Russia to stand firm on

its position concerning the legal status of the Protection Zone around Svalbard, and to see that Russian fishermen act accordingly (not succumbing to Norwegian claims). On the other hand, however, it is as important for Russia as it is for Norway to preserve the fish stocks at an acceptable level, as well as to maintain an effective and stable management regime. Hence, it should be in the interests of Russian authorities to secure compliance among fishermen in all parts of the Barents Sea, including the Svalbard Zone. If we disregard reporting to Norwegian authorities and fishing with 125-mm nets, it is to be expected that Russian authorities disapprove of violations committed by their own fishermen here. Admittedly, an exchange of information between the control bodies of the two states has only been institutionalized since 1993. There is, however, a reasonable possibility that Soviet/Russian authorities before that time were also informed of inspection results in the Svalbard Zone through notes made in the catch log by Norwegian inspectors. To the extent that this was the case and Soviet/Russian authorities took steps to sanction these violators, there might have been a certain element of indirect coercion towards Soviet/Russian fishermen in the Svalbard Zone in the period of investigation.[57]

It can be argued that a similar type of indirect coercion has been in operation in the Spanish summer fishery around Bear Island. In the mid- and late 1980s, there were several incidents of severe underreporting on the part of Spanish fishermen.[58] Norwegian authorities then used diplomatic channels to make the Spanish government place stronger pressure on their own fishermen. In this case, Norway could threaten Spain to withdraw the latter's Barents Sea quota if compliance did not increase, and as a result, Spanish fishing authorities started to send their own inspectors along with the fishing fleet to the Svalbard Zone.[59] A reasonable explanation thus seems to be that Spanish fishermen comply with Norwegian regulations basically because they can be sanctioned by their own authorities, and not by the Norwegian Coast Guard, in the event of detected violation.

Legitimacy and Discursive Measures

Finally, we have the possibility that fishermen in the Svalbard Zone comply with regulations as a result of discursive measures on the part of the management regime; for various reasons, they perceive the rules regulating the fisheries as legitimate and hence choose to behave in accordance with them. Such a legitimacy can be attained through efforts at different levels of the management regime. First, one can assume that the above-mentioned research activities of Russian and Norwegian marine biologists contribute to increasing the legitimacy of rules; they communicate to the fishermen that the establishment of quotas and other regulation measures are not arbitrary, but based on scientific findings from well-regarded researchers. Second, the participation of fisherman representatives in the process of setting quotas and elaborating other types of rules in both Russia and Norway is at least *intended* to enhance the legitimacy of these regulations. This is an issue that has been at the heart of much of the cooperative action theory.

Third, and discussed both in the literature and among decision makers, discursive measures at the control level can also contribute to compliance. Discursive measures appear to be used extensively by Norwegian Coast Guard inspectors in the Svalbard Zone.[60] The most striking examples are the attempts to avoid killing of undersized groundfish in fishing for capelin and shrimp in the Svalbard Zone. A considerable share of this fishery (when capelin fishery is allowed at all) takes place in the grazing grounds of cod, haddock, redfish, and Greenland halibut, and Norwegian authorities have set up

rules limiting the permitted intermingling of undersized groundfish in capelin and shrimp catches (where, of course, a much closer mesh is allowed than in the catch for groundfish).[61] The challenge of enforcing these regulations without coercion is left with the Coast Guard, whose reports reveal numerous accounts of how extensive killing of undersized groundfish was halted after intensive argumentation with the fishermen. Normally, Coast Guard inspectors board the fishing vessels, present the captains with their calculations of how much undersized fish was caught, and attempt to convince them of the fruitlessness of continuing such a fishery. Almost always, this strategy is reported to succeed.[62] An example of how the Coast Guard persuaded a Soviet capelin fleet of some 45 trawlers to stop a slaughter of groundfish fry in November 1991 is rendered in the following extract from a Coast Guard report, which shows how Soviet/Russian fishermen tend to operate "in flock" and only agree to change fishing grounds when instructed to do so from land. Nevertheless, it is a brilliant example of how Norwegian Coast Guard inspectors use argumentation measures to convince Soviet/Russian fishermen of the fairness of their request, and how these in turn use the same arguments towards their ship owners on shore.

> Before noon on 071191, we were informed that the Directorate of Fisheries would request all Russians to halt the fishing for capelin in an area extending from N7600 to N7630 and from E1700 to E2200, and that "Sevryba" had already been notified by telex. Before we received a written confirmation of the request, we inspected MB-0129, "Polesye", and took the opportunity to ask the captain how he thought the Russians would react to such a request. He answered that they would leave the area only if they were instructed to do so from land. However, this could not happen until after the weekend since 7 and 8 November are official holidays in the Soviet Union (in connection with the Revolution Day, celebrated for the last time this year). He said that there would not be anyone at "Sevryba's" offices to make a decision concerning our request until Monday 11 November.
>
> Immediately before the "catch soviet"[63] of the Russian capelin fleet at 1930B, we broadcasted the request to the fleet and received a couple of comments expressing doubt as to the scientific basis for closing such an extensive area.
>
> . . . The "fleet master"[64] was on board MA-0060, "Kapitan Telov", and we boarded it at 2100B the same evening. . . . When we presented him with our calculations of how much fry was killed by the fleet every day (4-5 mill. specimens of cod), he agreed that it was unreasonable to continue the fishery. He had sent a telex to Murmansk about the Coast Guard's request, but said that only telegraph operators would be on duty at the moment. It would be difficult to get in touch with any of the superiors since they were probably out celebrating. However, he promised to make a phone call the next morning when there would be operational personnel at work.
>
> We contacted the "fleet master" in the afternoon of 081191. He said he had been told to send a research vessel to the eastern part of the request area and let it conduct a couple of hauls before a decision would be made concerning our request. Later the same day, we inspected a Russian and a Latvian vessel and found that the presence of fry had risen dramatically. (On our last inspection, 76 specimens of cod, 27 of haddock, 115 of red fish and 2 of herring were found per 10 kg capelin.)[65] We immediately informed the

> Soviet "fleet master" about these results, and repeated our request that the fishery be halted without further delay. He promised to take another phone call to land. Shortly afterwards, he contacted us and said that all vessels would leave the area by midnight.[66]

The effort to make Russians comply with Norwegian fishing gear regulations in the area might be regarded as another example of successful argumentation measures in the Svalbard Zone. As we have seen in the preceding sections, there are several competing interpretations of the statistical variance between lacking reports and use of illegal fishing gear by Soviet/Russian fishermen. First, statistics may be wrong due to lenient recording. Second, Russians may have no interest in changing to 125-mm nets when entering the Svalbard Zone after fishing in the NEZ. Third, however, the use of 135-mm nets might in fact be the result of discursive measures, i.e., repeated efforts by Norwegian inspectors to persuade or convince them to comply with Norwegian fishing gear regulations. The use of nets with a greater selection ability thus becomes an example of *self-imposed restrictions* (in order to comply with Norwegian regulations) on the part of Russian fishermen.

The challenge of Coast Guard inspectors to induce compliance without resorting to coercive measures is probably facilitated by the fact that the Coast Guard is much more than a control body to the fishermen. Above all, the Coast Guard ships serve as rescue boats in the Barents Sea. Furthermore, they can offer several other services ranging from medical assistance to transportation and ice breaking.[67] These services are all free of cost for the fishermen, and they may contribute to a certain obligation to the control body. This may especially be the case in the Svalbard Zone, where climatic conditions are harsh and the presence of other auxiliary bodies more limited than closer to the mainland. This may also influence the relationship between fishermen and inspectors. Fishermen may be more heedful of inspectors' instructions in a desire to be on good terms with the Coast Guard.[68]

However, rather than stressing the fishermen's possible sense of obligation, one may accentuate *the spontaneous spirit of community* that may arise between people who have their occupation in these deserted areas, regardless of their functional roles. The very desertedness along with the extreme climatic conditions may render such roles less important here than in many other situations of human interaction. When inspector and fisherman meet in the polar night and over a cup of coffee discuss when the ice will come in from the east, the situation is more reminiscent of a meeting between polar sea colleagues than of one between a watchdog and a potential criminal. In such a situation, it may be argued, it becomes awkward for the captain to be revealed as a violator, or to turn down a request by the inspector.[69]

Conclusion: A Creeping Compliance?

My main conclusion is that Norwegian authorities have been able to maintain a relatively successful management of the fish stocks in the Protection Zone around Svalbard, including a relatively high degree of compliance on the part of individual fishermen, despite the disputed status of this jurisdictional arrangement. The conclusion is particularly interesting considering the absent threat of sanctions in the event of violation here. In line with a traditional tragedy of the commons–oriented approach, one should expect a considerably higher violation rate in the Svalbard Zone than in the NEZ or the Grey Zone, where a sanctioning system is in operation. Although violation statistics should be

treated with some care, they provide us with reasonably valid evidence to the contrary. Theorists within a cooperative action research tradition would probably account for this compliance as following from the general legitimacy of regulations and management procedures, brought about particularly through the participation of fisherman representatives in the establishment of quotas and technical catch limitations.[70] It has been my special concern with this article to demonstrate that compliance can also follow from discursive measures at the control level. The very concept of control is often perceived by comanagement theorists as a symbol of undesirable Hardinian coercion. I hope that this can be my contribution to adding control procedures as a theme within the cooperative action research program.[71]

On a general basis, one might perhaps speak of a "creeping compliance" which extends to most parts of the Barents Sea, encompassing fishermen of all states with quotas there. In the Norwegian and Russian EEZs as well as the Grey Zone, management competence is clear and compliance is generally high due to a well-functioning management regime and relatively elaborate control procedures. In the Svalbard Zone, jurisdiction is disputed (and sanctions lacking in the control system), but there is a "tacit agreement" between the two management partners that practical management measures here are performed by Norway, and thus constitute part of the overall Russian-Norwegian regime. To the extent that the Svalbard Zone regulations are perceived by fishermen as an integral part of the regime and not as a separate *free zone,* a creeping compliance, brought about through a mixture of legitimacy, discourse, and indirect coercion, may be the result.

Notes

1. The theoretical backdrop to this discussion is further elaborated in Geir Hønneland, *A Model of Compliance in Fisheries—Theoretical Foundations and Practical Application* (Lysaker, Norway: Fridtjof Nansen Institute, 1998).

2. The concept of compliance has attracted an increasing interest within political science in recent years, but the discussion focuses primarily on the international level, the object of study being *state* compliance with international regimes. See, e.g., Abram Chayes and Antonia Handler Chayes, "On Compliance," *International Organization* 47 (1993): 175–206. Contributions on compliance on the part of individual actors are less common; one work which combines the two levels is Oran R. Young, *Compliance and Public Authority: A Theory with International Applications* (Baltimore: Johns Hopkins University Press, 1979). A discussion of compliance in fisheries is found in Jon G. Sutinen, Alison Rieser, and John R. Gauvin, "Measuring and Explaining Noncompliance in Federally Managed Fisheries," *Ocean Development and International Law* 21 (1990): 335–372.

3. Garrett Hardin, "The Tragedy of the Commons," *Science* 162 (1968): 1243–1248, has given name to this tradition. Other classics with similar basic assumptions include H. Scott Gordon, "The Economic Theory of a Common-Property Resource: The Fishery," *Journal of Political Economy* 62 (1954): 124–142; and Mancur Olson, *The Logic of Collective Action: Public Goods and the Theory of Groups* (Cambridge: Harvard University Press, 1965). See Geir Hønneland, *The Interaction of Research Programmes in Social Science Studies of the Commons* (Lysaker, Norway: Fridtjof Nansen Institute, 1997), for an evaluation of the *tragedy of the commons* tradition as a research program.

4. Major contributions within this perspective include Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge, England: Cambridge University Press, 1990); Bonnie J. McCay and James M. Acheson, eds., *The Question of the Commons: The Culture and Ecology of Communal Resources* (Tucson: University of Arizona Press, 1987); and Evelyn Pinkerton, ed., *Co-operative Management of Local Fisheries: New Directions*

for Improved Management and Community Development (Vancouver: University of British Columbia Press, 1989). Discussions of various forms of institutional arrangements that user-group participation can take are provided by Svein Jentoft and Bonnie McCay, "User Participation in Fisheries Management," *Marine Policy* 19 (1995): 227–246; and Sevaly Sen and Jesper Raakjaer Nielsen, "Fisheries Co-Management: A Comparative Analysis," *Marine Policy* 20 (1996): 405–418. See Hønneland, *Interaction of Research Programmes,* for an evaluation of the *cooperative action theory* as a research program.

5. This is what Oran R. Young refers to as acting on the basis of *self-interest,* unaffected by efforts of public authorities, as opposed to authorities guiding the behavior of individual actors in a certain direction through the use of *enforcement* or *inducement.* See Young, *Compliance and Public Authority.*

6. Gerard J. Mangone, *Mangone's Concise Marine Almanac,* 2d ed. (New York: Taylor & Francis, 1990), 23.

7. For an overview of the marine resources of the Barents Sea, see "Status—Fishery Resources 1998" (summary in English), *Fiskets Gang* (Journal of the Norwegian Directorate of Fisheries), no. 3 (1998): 14–16.

8. Recent studies of the bilateral management regime include Olav Schram Stokke and Alf Håkon Hoel, "Splitting the Gains: Political Economy of the Barents Sea Fisheries," *Cooperation and Conflict* 26 (1991): 49–65; Alf Håkon Hoel, "The Barents Sea: Fisheries Resources for Europe and Russia," in *The Barents Region: Cooperation in Arctic Europe,* ed. Olav Schram Stokke and Ola Tunander (London: SAGE Publications, 1994), 115–130; and Olav Schram Stokke, *Fisheries Management under Pressure: A Changing Russia and the Effectiveness of the Barents Sea Regime* (Lysaker, Norway: Fridtjof Nansen Institute, 1995).

9. A discussion of this cooperation, as well as an introduction to Russian fisheries management in the Barents Sea, is provided in Geir B. Hønneland, "Autonomy and Regionalisation in the Fisheries Management of Northwestern Russia," *Marine Policy* 22 (1998): 57–65.

10. Alf Håkon Hoel, Svein Jentoft, and Knut H. Mikalsen, *User-Group Participation in Norwegian Fisheries Management* (Tromsø: University of Tromsø, 1994), 10.

11. This refers to the percentage of different species in the catch. Certain types of fishing gear are adjusted to catching a specific species and should not be used in fishing for other species. When fishing for redfish, for instance, a smaller mesh size is allowed than when catching other groundfish species, and the by-catch of cod, haddock, and Greenland halibut should thus not exceed 10% in this fishery. "Forskrift om maskevidde, bifangst, fredningstid og minstemål m.v. ved fangst av fisk og sild" (Provision on mesh size, by-catch, closed season, and minimal size of fish and more in the catching of fish and herring) (Norwegian Directorate of Fisheries, Bergen, Norway, Sept. 2, 1996).

12. Cf. Hønneland, "Autonomy and Regionalisation."

13. Geir Hønneland and Frode Nilssen, *The Fisheries Sector of Northwestern Russia: Norway's Political Challenge* (Lysaker, Norway: Fridtjof Nansen Institute, 1998).

14. The capelin stock, with its rapid fluctuations, represents a departure from this general trend. Furthermore, direct fishing for Greenland halibut was stopped in 1992; the stock had suffered a threatening decline and is now only allowed to be taken as by-catch, except for a very limited amount permitted in the inshore fishing by passive gears. "Status—Fishery Resources 1998," 14–16.

15. Ibid.

16. See Robin Churchill and Geir Ulfstein, *Marine Management in Disputed Areas: The Case of the Barents Sea* (London: Routledge, 1992), for an extensive elaboration on the legal setting of the Barents Sea fisheries.

17. In short, Norway claims the delimitation line to follow the *median line* from the mainland border, while the Soviet Union/Russian Federation sticks to the so-called *sector line* principle, implying the line of delimitation to run along the longitude line from the tip of the mainland border to the North Pole. A recent elaboration on the Russian stance is provided in Leonid Timtchenko, "The Russian Arctic Sectoral Concept: Past and Present," *Arctic* 50 (1997): 29–35.

18. *St meld nr 49 (1994–95): Om dei årlege fiskeriavtalene Noreg inngår med andre land* (Report to the Storting No. 49 (1994–95): On the annual fishery agreement Norway concludes with other countries) (Oslo: Norwegian Ministry of Fisheries, 1995). Negotiations on a final settlement have been conducted throughout the whole period since 1977. Towards the end of the Soviet era, the parties reported that they were approaching a solution. However, the strengthening of Russian nationalism that followed the dissolution of the Soviet Union has made a compromise with the Norwegians less feasible for the Russian negotiators. To the best of the author's knowledge, the ne-gotiations (the reports of which are classified) have remained more or less at a standstill since then.

19. Traktat mellem Norge, Amerikas Forente Stater, Danmark, Frankrike, Italia, Japan, Nederlandene, Storbritannia og Irland, og de britiske oversjøiske besiddelser og Sverige angående Spitsbergen (Treaty between Norway, the United States of America, Denmark, France, Italy, Japan, the Netherlands, Great Britain and Ireland, and the British overseas dependencies and Sweden concerning Spitzbergen), Feb. 9, 1920, *Norges Traktater* (Norway's Treaties) (Oslo: Norwegian Ministry of Foreign Affairs), 1 (1661–1944): 409–417; T.S. No. 686 (U.S.); 2 L.N.T.S. 7 (entered into force in 1925) [hereinafter Svalbard Treaty].

20. The Svalbard Treaty gave Norway sovereignty over the archipelago, which had hitherto been a no-man's land in the European Arctic. However, the Treaty contains several limitations in Norway's right to exercise this jurisdiction. Most importantly, all signatory powers enjoy equal rights with Norway to extract natural resources there. Furthermore, the archipelago shall be demilitarized, and there are certain limitations in Norway's right to impose taxes on its citizens in Svalbard. Original signatories were Norway, the United States, Denmark, France, Italy, Japan, the Netherlands, Great Britain, and Sweden. Today, more than 40 states have signed the Treaty. For a recent and elaborate discussion of the legal status of the Treaty, see Geir Ulfstein, *The Svalbard Treaty: From Terra Nullius to Norwegian Sovereignty* (Oslo, Norway: Scandinavian University Press, 1995). A discussion of the creation of the Svalbard regime is provided in Elen C. Singh and Artemy A. Saguirian, "The Svalbard Archipelago: The Role of Surrogate Negotiators," in *Polar Politics: Creating International Environmental Regimes,* ed. Oran R. Young and Gail Osherenko (Ithacha and London: Cornell University Press, 1993), 56–95.

21. The only exception is some third countries, for which Norway may specify the share of their total Barents Sea quota allowed to be taken in the Svalbard Zone. *St meld nr 49 (1994–95): Om dei årlege fiskeriavtalene Noreg inngår med andre land* (Report to the Storting No. 49 (1994–95): On the annual fishery agreement Norway concludes with other countries). The rationale for such a specification is not legal in nature. It is rather a result of the simple fact that the fish closer to the mainland are bigger; hence, Norway prefers that the bulk of the third countries' catches be taken here in order to reduce potential harm to the stocks.

22. For many years, Finland had been the only state to recognize the Svalbard Zone. Churchill and Ulfstein, *Marine Management in Disputed Areas,* 115. In the preamble to the 1995 bilateral fisheries agreement between Norway and Canada, however, the recognition of the Svalbard Zone by the latter is established. Agreement between the Government of Canada and the Government of the Kingdom of Norway on Fisheries Conservation and Enforcement, Jan. 9, 1995 (text available from the Norwegian Ministry of Foreign Affairs, Oslo, Norway). The agreement was not in force as of September 1997. Most important in this context, however, is the fact that neither Finland nor Canada conducts any fishery in the Svalbard Zone.

23. Force has been used only towards vessels from states that have no quota in the Barents Sea. This happened for the first time in the summer of 1993, when Icelandic trawlers and Faeroese vessels under flags of convenience started fishing in the area. Warning shots were fired at the ships by the Norwegian Coast Guard, and they left the zone. The following summer, an Icelandic fishing vessel was for the first time arrested for having fished in the Svalbard Zone without a quota. *Årsrapport for Kystvakt Nord 1993* (Annual report for the northern branch of the Norwegian Coast Guard for 1993) (Sortland: Norwegian Coast Guard, 1994); and *Årsrapport for Kystvakt Nord 1994* (Annual report for the northern branch of the Norwegian Coast Guard for 1994) (Sortland: Norwegian Coast Guard, 1995).

24. Author's own observation; author's personal communication with Norwegian Coast Guard inspectors.

25. Norwegian inspections of Soviet/Russian vessels in the Svalbard Zone seem on the whole to take place in a friendly atmosphere. Coast Guard inspectors report that Soviet/Russian captains often apologize to them for not having sent active reports to the Norwegian Directorate of Fisheries and for not signing the inspection form. They explain that they are under strict instructions, presented to the captain in written form before every trip, not to comply with these prescriptions from Norwegian authorities and that the handful of Soviet/Russian captains who over the years actually *have* complied, have subsequently been penalized at home. Author's own observation (see note 27 below), personal communication with Norwegian Coast Guard inspectors (see note 27 below), and interviews with Russian fishermen in Båtsfjord, Norway, Nov. 26–28, 1997. For a discussion of these problems, see the section on "Indirect Coercion" below.

26. Amendments in the Norwegian regulations concerning the Protection Zone around Svalbard were introduced after the first arrests there in the summer of 1994 (see note 23 above). As fishing activity by fishermen from states without a quota in the Barents Sea had not been a relevant problem until then, it turned out that the existing regulations did not give Norwegian authorities a mandate to arrest violators in the Svalbard Zone. Such a mandate was immediately introduced in the regulations, although it is still not used towards fishermen from states with a quota in the Barents Sea as a whole. "Forskrift om regulering av fiske i Fiskevernsonen ved Svalbard" (Provision on the regulation of fishing in the Fishery Protection Zone around Svalbard) (Norwegian Directorate of Fisheries, Bergen, Norway, Oct. 31, 1994).

27. The empirical information concerning fishing activity in the Svalbard Zone is mainly based on the author's general personal knowledge acquired through his several years' work as a Russian interpreter for the Norwegian Coast Guard and other organs of fisheries administration (1988–1993) and through his experience as a researcher in the field of fisheries policy (from 1994 to the present). Hence, sources for some empirical data are simply referred to as "author's own observation" or "author's personal communication with Norwegian Coast Guard inspectors." The current article is part of the author's doctoral work. A discussion of the methodological approach for this research project is presented in more detail in Geir Hønneland, *Methodological Considerations: The Case for Cautious Variants of a Positivist and an Interpretivist Approach* (Lysaker, Norway: Fridtjof Nansen Institute, 1997).

28. There seems, however, to have been a relatively stable pattern during the 20 years the zone has existed. The greatest variance has occurred in the capelin fishery due to the wide fluctuation in the size of this stock. In periods when the capelin fishery has been permitted, i.e., until 1987 and from 1991 to 1993, there has been considerable fishing for this species by Soviet/Russian vessels. Moreover, a certain increase in the shrimp fishery, mainly from Soviet/Russian vessels, has been seen since the late 1980s due to decreasing cod quotas. Author's personal communication with Norwegian Coast Guard inspectors. The relatively intense shrimp fishery has been maintained even after cod quotas rose to a more acceptable level toward the mid-1990s. This can largely be explained by the fact that due to increased fuel costs, the Northwest Russian fleet practically halted its long-distance fishery after 1991–1992 and concentrated its fishing efforts in the Barents Sea. See Hønneland, "Autonomy and Regionalisation." To the extent that cod quotas have not permitted all vessels to fish cod all year round, quite a considerable number of vessels have for parts of the year resorted to Svalbard Zone shrimp, a species not yet limited by quotas. Author's personal communication with Norwegian Coast Guard inspectors.

29. Author's own observation. See also Churchill and Ulfstein, *Marine Management in Disputed Areas.*

30. Author's own observation.

31. Ibid.

32. Spitzbergen (spelled "Spitsbergen" in Norwegian) is the main island in the Svalbard archipelago. This was the common name of the whole group of islands from their discovery by Willem Barentz in 1596 until Norway was granted sovereignty over them in 1925. The name was then changed to the old Norwegian *Svalbard* ("land of the cold shores"), used in Icelandic annals

and assumed by Norwegian historians to denote the islands which now bear the same name. *Svalbard* rather than *Spitzbergen* is becoming increasingly common also in other languages. For an introduction to Svalbard's history, see Thor Bjørn Arlov, *A Short History of Svalbard* (Oslo, Norway: Norsk Polarinstitutt, 1994).

33. Author's own observation. See also Churchill and Ulfstein, *Marine Management in Disputed Areas.*

34. Author's own observation.

35. Author's own observation and personal communication with Norwegian Coast Guard inspectors. Norwegians often fish for shrimp in the fjords of Svalbard, particularly in the grand Isfjord and Kongsfjord. This implies that they operate within the territorial waters of the archipelago and not in the Protection Zone. Author's own observation and personal communication with Norwegian Coast Guard inspectors.

36. Author's own observation and personal communication with Norwegian Coast Guard inspectors.

37. Author's own observation and personal communication with Norwegian Coast Guard inspectors. After the establishment of the present regime, Spain was granted a quota in the Svalbard Zone due to the traditional presence of Spanish fishermen in the area. This quota share is formally included in the total European Union (EU) quota. *St meld nr 49 (1994–95): Om dei årlege fiskeriavtalene Noreg inngår med andre land* (Report to the Storting No. 49 (1994–95): On the annual fishery agreement Norway concludes with other countries).

38. Author's own observation and personal communication with Norwegian Coast Guard inspectors. In the last couple of years, the Spanish fishery in the Barents Sea has no longer been restricted to the area of traditional Spanish presence in the Svalbard Zone. As a result, it has tended to shift southwards and today primarily takes place in the NEZ. Author's own observation and personal communication with Norwegian Coast Guard inspectors.

39. Author's own observation and personal communication with Norwegian Coast Guard inspectors.

40. Author's own observation and personal communication with Norwegian Coast Guard inspectors. In terms of vessel tonnage, the EU fishery in the Barents Sea is quite modest. Besides the Spanish, a handful of British, German, French, and Portuguese vessels, operating in the Barents Sea for only a very limited part of the year, take up the EU quota here. Author's own observation and personal communication with Norwegian Coast Guard inspectors. See also *St meld nr 49 (1994–95): Om dei årlege fiskeriavtalene Noreg inngår med andre land* (Report to the Storting No. 49 (1994–95): On the annual fishery agreement Norway concludes with other countries).

41. Violation rates from the Russian Economic Zone have so far not been published. A presentation is, however, being prepared by Anne-Kristin Jørgensen of the Fridtjof Nansen Institute, in Lysaker, Norway. It will be published during fall 1998.

42. General statistical data are, of course, available from more recent years than 1992. The data presented here are, however, the result of a more elaborate examination of results punched from each inspection carried out in the period. The purpose was to single out those violations relevant in a fisheries context. For practical reasons, it has not been possible to conduct a corresponding investigation for the most recent years. Also, new inspection procedures (involving mainly checkpoint inspections of foreign vessels before they leave the NEZ) were introduced in the NEZ in 1993, making comparison both between years and between the two zone arrangements more difficult. As for the main conclusions of this article, however, these are confirmed also by statistics from recent years (although these are available only in a somewhat less elaborated form).

43. Some of the material is adapted from Geir Hønneland, "Enforcement and Legitimacy in the Barents Sea Fisheries," in *Northern Waters: Management Issues and Practice,* ed. David Symes (London: Blackwells Science, in press).

44. Such a discussion would have to involve an evaluation not only of changes in the fishermen's incentives, but also of changes in the organizational structure and culture of the control body, as well as changes in regulations. In short, a general rise or decline in reported violations would not necessarily imply changes in fisherman behavior. Alternative explanations

would be changes in the control body's ability to detect violations or in the regulations themselves, rendering compliant behavior either easier or more difficult for the fishermen.

45. Oral warnings are given for violations of a formal type that do not in themselves have a negative impact on the fish resources (cf. Table 3 above, note a) or for minor inaccuracies of various sorts. Written warnings and arrests are used for violations that more severely affect the state of the resources or the possibility for public authorities to manage and control their exploitation. The internal guidelines used by the Coast Guard to decide between the different forms of reaction are not available to the public.

46. Author's interviews with Russian fishermen in Båtsfjord, Norway, Nov. 26–28, 1997.

47. As far as the practical absence of violations of closed area arrangements is concerned, it should be noted that this regulation measure is particularly widely used in the Svalbard Zone due to the large amounts of fry there. Of course, this renders our results more interesting than would have been the case if areas were closed for fishing only on rare occasions.

48. A similar, though somewhat less elaborate discussion for the Barents Sea as a whole is provided in Hønneland, "Enforcement and Legitimacy in the Barents Sea Fisheries."

49. In fact, such headlines were quite frequent in Norwegian newspapers in the 1980s. During the Cold War, stories of "Ivan" committing violations in the sensitive Arctic area were always good media stuff, especially for the conservative press. The context in which these particular violations occurred was not always sufficiently presented.

50. This is a question that for all practical purposes is impossible to answer convincingly. Assessments can be made, but "reality" will remain inaccessible, probably even with the use of modern surveillance technology, such as satellite tracking of catch vessels. Present tracking instruments reveal to control authorities where fishing vessels are located, but not the kind of activity they are engaged in. More sophisticated methods will probably be developed in the future, but it is difficult to see how the detection of all noncompliant behavior can be made possible.

51. The alternative of having an inspector on board each catch vessel all the time has not been seriously considered by Norwegian authorities. This would entail enormous costs due to the large quantity of Russian vessels operating in either one of the Norwegian zones most of the time. Furthermore, the permanent presence of an inspector on board is no solution to the compliance problem, as some tend to assume. There is still no guarantee that inspectors possess the competence to detect all violations, and their socialization in the crew may negatively influence their propensity to reveal and report noncompliance.

52. The fact that inspections are performed by officers with a general naval training, and not by, for example, persons with a background in the fishing industry, represents one positive and one negative element concerning the effectiveness of the control. On the one hand, the inspectors may lack a familiarity with the fishing industry and hence not always know what to look for at an inspection. On the other hand, they would probably be strongly committed to the carrying out of orders, including the detection and reporting of violations. With inspectors with a background in the fishing industry, the case would be the opposite. They would be acquainted with the line of thought of fishermen and immediately know where to look, but probably be more prone to identify with the fishermen and disregard violations.

53. The mentioned recording problem should also be kept in mind, particularly concerning the disparity between lacking reports and fishing with illegal mesh size. While there is no doubt that many Soviet/Russian fishermen have refrained from reporting to Norwegian authorities but complied with the gear regulations, there is a possibility that the difference between these two types of violation is less than that reflected in the statistics. The computer operators on shore may be so accustomed to recording the invariable "lacking report" under the "reason for warning" column that they fail to pay sufficient attention to the simultaneous detection of other violations.

54. See, for instance, the annual reports of the Havforskningsinstituttet (Marine Research Institute) of Bergen, Norway, for the years in question.

55. See Hønneland, "Autonomy and Regionalisation," for a further discussion of these issues.

56. As mentioned, vessels from states allotted no quotas whatsoever in the Barents Sea constitute an exception to this rule. See note 23 above.

57. The author's interviews with Norwegian Coast Guard inspectors tend to confirm this assumption.

58. Author's personal communication with Norwegian Coast Guard inspectors and representatives of the Norwegian Directorate of Fisheries. See also Churchill and Ulfstein, *Marine Management in Disputed Areas.*

59. Author's personal communication with Norwegian Coast Guard inspectors and representatives of the Norwegian Directorate of Fisheries.

60. This is confirmed by the author's own observation and personal communication with Norwegian Coast Guard inspectors.

61. "Forskrift om maskevidde, bifangst og minstemål m.m. ved fiske i Fiskevernsonen ved Svalbard" (Provision on mesh size, by-catch, and minimal size of fish and more for fishing in the Protection Zone around Svalbard) (Norwegian Directorate of Fisheries, Bergen, Norway, Aug. 30, 1996).

62. Author's own observation and personal communication with Norwegian Coast Guard inspectors.

63. Daily "council" on the radio where all fishermen provide information on their position and catches.

64. "Sevryba's" representative at sea; not furnished with the decision-making power that the term "fleet master" might indicate. His main responsibility is to function as a communicating link between the fishing fleet and the top leadership of "Sevryba."

65. The legal intermingling of fry was only 10 specimens of groundfish (including all species) per 10 km of capelin.

66. Report from Norwegian Coast Guard vessel K/V *Stålbas* on Soviet fishing activity in the Barents Sea, Nov. 1991.

67. For instance, the Coast Guard's annual report for 1992 shows 24 search-and-rescue operations, 25 tows of fishing vessels with engine problems, 23 instances of diver assistance to vessels whose fishing gear had become entangled in the propeller, 13 ambulance flights, 85 transportations by helicopter, 8 transportations to land of fishermen who had fallen ill, and 8 other types of technical auxiliary operations. *Årsrapport for Kystvakt Nord 1992* (Annual report for the northern branch of the Norwegian Coast Guard for 1992) (Sortland: Norwegian Coast Guard, 1993).

68. A certain stability in the fishing fleet over time is necessary for such a relationship between a control body and fishing vessels to develop. This precondition is to a large degree present in the case of the Barents Sea. Author's own observation and personal communication with Norwegian Coast Guard inspectors. The trawlers' part of the Norwegian cod quota is shared between a limited number of vessels being allotted quotas year by year. The shrimp vessels also are quite few in number. The same is true of third-country quotas. *St meld nr 49 (1994–95): Om dei årlege fiskeriavtalene Noreg inngår med andre land* (Report to the Storting No. 49 (1994–95): On the annual fishery agreement Norway concludes with other countries). A small number of vessels (from two to five) from Germany, France, Great Britain, and Portugal every year take the main share of the EU's quota in the NEZ. The same Spanish twin trawlers, for their part, return to the Barents Sea every summer to take their quota. The Russian fleet is considerably larger, but again it is mainly the same vessels that year after year fish in the Barents Sea. The Coast Guard may thus become more than an "occasional control body" to the fishermen. Russian fishermen, for instance, do not use the Russian translation of the words *Coast Guard* when they mention the Norwegian control body in their mother tongue; they use the Norwegian word *Kystvakt,* pronounced with a Russian accent. With its distinctive features, it can be argued that the Coast Guard becomes an institution for the fishermen in the Selznick sense (see Philip Selznick, *Leadership in Administration: A Sociological Interpretation* (New York: Harper & Row, 1957)), rather than just an anonymous, mechanical *organization.*

69. On the other hand, it may be argued that it becomes awkward for the inspector to reveal

violations in such situations. The choice situation for the inspector is, however, also influenced by the previously mentioned institutional factors of the control body.

70. The various explanations are further tested through interviews with fishermen in my ongoing doctoral work, of which the present article is also part. Further work on the topic will also include a discussion of whether experiences from the Svalbard Zone are unique or transferable to other ocean areas.

71. At least as a theme that deserves further research; the scope and validity of my findings can, of course, be debated.