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Adaptive management? Observations of knowledge coordination in the communication practice of Swedish game management

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Modern management of natural resources is guided by the normative theory of adaptive management (AM). Behind this theory lies a strong, albeit implicit, expectation that organisations aiming for AM have the capacity to communicate in a way that facilitates the required coordination of the knowledge perspectives involved. The aim of this article is to discuss the extent to which the communication practice of Swedish game management organisations facilitates coordination of knowledge corresponding to AM. Based on operationalizations of communicative rationality and agonistic pluralism, we use the concepts ‘discursive closure’ and ‘discursive opening’ to investigate how the coordination of knowledge is carried out through communication in relatively recently established organisations, the Swedish Game Management Delegations (GMDs). We analyse four communication episodes from GMD meetings and notice that multiple perspectives were expressed (discourse openings) but were not evaluated in a communicative rational way before being closed. The consequences of these closures were that knowledge perspectives with potential relevance, but with unclear validity for game management, were not elaborated upon, in terms of their truth, intelligibility, legitimacy or sincerity, which inhibited AM. The concepts of discursive closure and discursive opening proved useful for investigating communicative capacity. An important question which needs to be addressed to improve communicative capacity for AM is whether it would be practically possible to keep to the agenda and rules of the GMD meetings and still admit discursive openings about differences in perspectives.

Modern management of natural resources, be it water, forests or, as in the case of this article, game, is guided by the concept of adaptive management (AM). This concept is based on a normative theory emphasising the importance of learning and of: “... integration and legitimacy of knowledge from various sources...” (Stankey et al. 2005 p. 6) for successful and sustainable management (Holling 1978, Gunderson et al. 1995, Bormann et al. 1999). Behind this theory lies a strong, albeit implicit, expectation on communication as a tool for coordination of knowledge from different perspectives. Thus, there seems to be an underlying assumption to the AM theory, that organisations and agencies aiming to follow the principles of AM have the capacity to communicate in a way that facilitates the required knowledge coordination. However, subsequent studies have concluded that this is not the case (cf. Lee 1999, Sandström et al. 2009, Hassler et al. 2013) and that there is a need for more critical analysis of the communication taking place within supposed AM processes and institutions (Cooke and Kothari 2001, Stankey et al. 2005, Arnold et al. 2012).

The aim of this article is to explore and discuss the extent to which the communication practice in Swedish game management organisations facilitates a coordination of knowledge corresponding to AM, as these organisations

were explicitly established with this intention. The theoretical assumption on which the exploration is based is that it is possible to achieve a management process characterized by adaptivity only when the communication taking place among the actors involved is orientated towards understanding the perspectives that they present, as well as the differences between these perspectives. Such communication allows the validity of different forms of knowledge to be jointly explored and, where appropriate, incorporated into the management process. This needs to occur also in situations where actors disagree (Buck et al. 2001, Capitini et al. 2004, Stankey et al. 2005). In this paper we use the concepts “discursive closure” (Deetz 1992) and “discursive opening” (Dougherty et al. 2009) to investigate how the coordination of knowledge is carried out through communication. The empirical material used in the analysis was obtained from a post hoc study of a relatively new natural resource management (NRM) organisation, the Swedish Game Management Delegation (GMD).

In recent decades, Swedish carnivore management has been characterized by disagreements and polarization between groups with different perspectives, where political decisions on preserving and maintaining carnivore populations have been of questionable legitimacy in some groups (Ericsson

and Heberlein 2003, Sjölander- Lindqvist 2009). Regional GMDs connected to each of the 21 Swedish county administrative boards (CABs) and including a broad representation of different interests were established by the government in December 2009. The aims were to generate: "... acceptance for carnivores ... providing substantial regional responsibility and local influence over carnivore management" and to support a more flexible management approach where: "...management measures can constantly adapt to changes in nature, so called adaptive management" (Proposition 2008/09:210 p. 24 and p. 26). In this paper we analyse communication episodes that we have observed in regular meetings of some GMDs, examine how discursive openings and closures are employed, and discuss how this communication practice affects opportunities for adaptive management.

The communication foundation of adaptive management

There are several different approaches to, and definitions of, AM (cf. Jacobson et al. 2009). In general, they derive from the idea that, whether generated by human or natural processes, our incomplete knowledge about ecosystems changes needs to be explicitly addressed and new knowledge should be systematically incorporated into NRM processes (Lee 1999, Williams 2011). AM is defined as an ongoing learning process where actions are iteratively planned, followed up and adjusted in a way that supports flexibility and knowledge development (cf. Stankey et al. 2005, Williams 2011). Decisions about long-term and short-term goals and measures to be implemented are continuously assessed and reassessed in relation to changes in the contexts within which the management is carried out.

Adaptive capacity is dependent on information and descriptions of the system from many different knowledge sources. Therefore participation by stakeholders is emphasised, as they are assumed to bring in essential knowledge about the resources and about the ecological and socio-economic effects of different measures. Failure to include experiences of stakeholders would therefore reduce the possibilities of reaching the goals of AM (Norton 2005, Stankey et al. 2005). The extent to which a management body fails or succeeds to take various stakeholder experiences into account depends on, among other aspects, how knowledge is coordinated in the management procedure. By knowledge coordination we mean how claims of validity (that is, narratives, questions and statements postulating how 'things' are and ought to be) are dealt with in management processes and how this in turn affects the direction of conversations about what to do and why.

Based on the reasoning above, we conclude that the concept of AM can only be realised if the management process is supported by communication that facilitates exploration, understanding and coordination of the knowledge contributions of the actors involved in the process.

Communicative action, pluralistic agonism and discursive openings and closures

When defining a conceptual framework for analysing knowledge coordination in game management we have two

starting points: Jürgen Habermas' concept 'communicative rationality' and Chantal Mouffe's concept 'pluralistic agonism'. Communicative rationality describes a situation in which: 1) all participants can make validity claims (descriptions and estimations of reality); 2) all validity claims can be questioned by participants regarding whether the claims are intelligible, true, legitimate, and/or sincere; 3) validity claims are excluded from discourse only if there is consensus among the participants about their invalidity – that is, if the argument for the validity of the description of reality is considered unclear, false, illegitimate and/or insincere (Habermas 2001, p. 88). Habermas' theory is normative, suggesting that the way knowledge is coordinated in situations characterized by communicative rationality is to be preferred in societal decision making, as such communication is supposed to be the vehicle generating deliberative democracy.

From a pluralistic agonistic perspective, knowledge coordination should be carried out in a way that recognises differences in perspectives in order to be constructive and democratic (Mouffe 2000). From this point of view, the very purpose of dialogue is to acknowledge social conflicts, disagreements and other differences rather than to generate consensus (Ganesh and Zoller 2012). Although it is a normative perspective, agonism is useful for analytical purposes, as it describes the character of situations where disagreeing actors are aware of their disagreement and understand the differences in their respective perspectives. Consequently, when analysing a process of knowledge coordination from this viewpoint, it is relevant to be attentive to the extent to which the actors acknowledge the meaning of their disagreements as well as their foundation. Therefore, in line with this analytical normativity, attention should be paid to how initiatives to present alternative perspectives are treated through social interaction, and to what extent actors understand and are able to investigate the meaning of disagreements and perspective differences. An agonistic approach to adaptive management would imply that, for an NRM process to qualify as adaptive, it should include recognition of disagreements and investigation of differences in perspectives.

Chantal Mouffe has explicitly criticised Habermas' (Mouffe 2000 p. 66 f) normative theory of deliberative democracy and the role he gives consensus in democratic processes, which might make one question the wisdom of combining Habermas' concept of communicative rationality with agonistic pluralism. However, for the actors to understand the meaning of their differences in perspective (agnostic pluralism) they need to investigate their respective descriptions and claims of reality, and why they make different assumptions with regard to the validity of these claims. This can be done in the way described by Habermas; that is, through communicative rationality. We argue that pluralistic agonism emerges only if the social interaction of a situation is to some extent characterized by 'communicative rationality' in that the interactants develop at least a minimum of consensus about: 1) the meaning (not the validity) of their respective perspectives; and 2) the meaning of the situation/interaction. In our view, typical of pluralistic agonism would be a situation where actors make different claims regarding descriptions and estimations of reality and recognise that they fail to reach consensus about the validity of these claims (Horowitz 2013). If the interaction is characterized

by communicative rationality, actors continue to investigate their different perspectives, not for the purpose of reaching consensus about action, but rather to understand those perspectives and differences through a joint investigation of the validity claims. Thus discourse about the disagreement remains open, and pluralism is maintained.

The counter concept to communicative rationality is strategic rationality; situations where claims regarding descriptions of reality are rejected through other means than consensus about their invalidity; that is, through distortion of communication (Habermas 1984). In cases of systematically distorted communication, perspectives will be excluded from the discourse and the plurality of agonistic situations will not be recognised by the involved actors. In such a situation, the coordination of knowledge results in reduced opportunities for adaptivity and in reduced pluralism.

To operationalize the theories on communicative rationality and pluralistic agonism for the purpose of investigating knowledge coordination in supposed adaptive NRM institutions, we use the concepts 'discursive openings' and 'discursive closure'. Discursive closure is proposed by Deetz (1992) as an operationalization of Habermas' theory: Discursive closures: "...exist whenever potential conflict is suppressed" (Deetz 1992, p. 174). Without explicitly relating to Mouffe's concept of pluralistic agonism, Deetz discusses systematically distorted communication in similar terms: "The oneness becomes reproduced rather than opened by conflicting representations" (Deetz 1992 p. 174). Thackaberry (2004) makes a distinction between systematic distortion, as a term describing the character of "an entire communicative system", and discursive closure which "usually refers to the suppression of a particular conflict". Deetz suggests eight different ways in which discursive closure operates, for example, "disqualification", "naturalization", and "neutralization" (Deetz 1992, Ångman 2012). In our study we have chosen not to make such a categorisation of the means by which closures are exercised, but rather to focus on describing the dialectic between discursive openings and closures and how this dialectic affects the direction of the conversation depending on whether investigations of different validity claims are facilitated or constrained. We define discursive openings as communicative moves which: 1) introduce alternative perspectives/validity claims to the dominant perspective of a situation and/or; 2) facilitate the evaluation of validity of dominant or alternative perspectives. We define discursive closure as communicative moves which inhibit the evaluation of validity of validity claims and use Habermas' criteria for communicative rationality to identify these.

Method

This study is a post hoc study in the sense that when data was generated it was not planned that it would be analysed using the theoretical framework presented here. The data generation was conducted with the idea of analysing the communication practice of the game management delegations (GMD) from an interactional, socio pragmatic perspective, but without specified theoretical operationalization. When considering the transcripts from the GMD meetings, we recognised opportunities to analyse them using the concepts

of discursive openings and closures. When the theoretical framework was established, with criteria for selection of episodes and coding (see below), the more specific analysis was conducted. This approach to knowledge development is called 'abduction', an iterative process between theory, data, theory specification and interpretation (Alvesson and Sköldbberg 1994).

The analysis of GMDs was based on data from participant observation of GMD meetings, interviews with focus groups (members drawn from the GMDs), and related documents, as described below.

Participant observation

During observation of GMD meetings, we took notes on laptop computers. After each meeting, the notes were compared and combined into one document. Four sessions, eight hours in total, were observed, but only three sets of notes of sufficient quality for further analysis were generated.

Focus groups

Group interviews with GMD members took place in connection with the observed GMD meetings. We asked open-ended questions and facilitated discussion about GMD members' perspectives on game management and experiences of communicating in GMDs. These focus groups were documented in notes made by the GMD members themselves, as well as by. The interviews lasted between half a day and one day, in the premises of each County Administration Board (CAB). The majority of the members of the GMDs in question, including their deputies, and 3–5 CAB officers belonging to each GMD, took part in the focus groups. In total, the focus groups included 62 GMD members, 35 deputies and 15 CAB officers.

Document studies

Official minutes of GMD meetings are available on the websites of the CABs. To assess how well the meetings that we observed fitted into the overall performance of meetings of the GMDs in question, we compared the official minutes of the studied meetings with minutes from three additional meetings held within each GMD.

From the transcripts of the three accepted sessions, four episodes which were considered to be of potential relevance for adaptive management, were selected for further analysis of discursive openings and closures. The criteria for selection of episodes were that: 1) more than one actor contributed with knowledge and value claims to the conversation; 2) there was some kind of exchange of meanings between actors; 3) there was disagreement about the validity claims made; 4) the content of the interaction had some importance for game management; 5) pre-analysis indicated that the situation involved dynamics between discursive closures and openings.

In the selected episodes we investigated how validity claims were presented, responded to and elaborated upon by the GMD members. After selecting an episode, the transcript from that episode was scrutinised and exchanges which met the criteria for discursive openings and closures were marked.

The criteria for identifying discursive openings are that statements, or exchanges of statements and/or questions, introduce validity claims which are new in the conversation; thus, they are propositions about how 'things' are or are not, how things ought to be or ought not to be. Further, we looked at the responses to the discursive openings, and to what extent they resulted in further investigation of the validity of the claims made in the discursive opening; to what extent questions were raised about whether those claims were true, intelligible, legitimate and sincere, and in cases of disagreement about validity, to what extent the differences in perspective were explicated. When discursive openings were closed without their validity being investigated, and when there was no invitation to further investigate the validity at another time, we considered it to be a discursive closure. When we noticed discursive openings and closures we tried to consider what role this exchange of statements may have in the process of adaptive management.

Mandate and function of the GMDs

The establishment of the GMDs was ratified by the Swedish parliament in 2009, and most delegations had their constitutive meeting during the first four months of 2010. The constitution of the GMDs is determined by the 'Regulation on game management delegations' (SFS 2009:1474). Each county in Sweden has its own GMD, which is an agency of the county administrative board (CAB) and collaborates in matters relating to game management in the county. Among others, the tasks of the GMD are to decide on the general guidelines for activities such as licensed hunting and culling within the county). The GMD is also to consider approval of the minimum levels for bears and lynx, suggested by the CAB, as well as to consider the presence of wolves and wolverines in their respective counties. The GMD of each county has 12–16 ordinary members with a four year mandate. Each member has their personal deputy. Five of the members are elected by the regional political parliament [landstinget], and the rest represent various interests, such as 'agriculture', 'hunting and game management', 'nature conservation', 'tourism', 'forest industries' and, where relevant, 'reindeer herding' and 'fisheries'.

In interviews, county governors and civil servants at the CABs affiliated to the GMDs involved in this study explained that the GMD members are, when on duty at the GMD, employed by the CABs and are therefore expected to act in the interest of the CAB. This was something they had to emphasise to the GMD members when the GMDs was established, to avoid false expectations. The minutes of the first meeting of several GMDs, record that the chief solicitor of the CABs talked about what was involved in working for a state agency. In focus group interviews, GMD members expressed (collectively) the view that their mandate is unclear and/or too narrow. They told us that they had thought the mandate was wider and stronger when they accepted nomination as GMD members.

Episodes of discursive openings and closures

The meetings we observed lasted between one and three hours. In two of the meetings, the agenda was only of an

informative character, comprising updates from the CAB and the Swedish Environmental Protection Agency (SEPA) about new policies and regulations relating to game management. The agenda for the other two meetings we observed included items on which a decision was needed. All four meetings observed followed a relatively strict procedure, regardless of their purpose, and interviews and minutes from other meetings indicate that this is the norm. Each meeting started with: 1) the chairperson (usually the County Governor) opening the meeting; 2) a review of the minutes of the previous meeting; 3) agreement of the agenda for the current meeting, including additional items raised by the members; and 4) election of a minutes adjuster. Episodes from the three meeting sessions are analysed and discussed below.

Episode 1, GMD of County A

This episode took place at the beginning of a meeting, during one of the regular items on the agenda ('Review of minutes of previous meeting'). During the previous meeting, management of the bear population had been discussed and the GMD had decided upon some general recommendations for population management. A couple of weeks after the meeting, one of the delegation members (DM2, representing the interest 'tourism and business'), who did not attend the meeting, but was represented by his/her deputy, sent in a reservation to the CAB officer responsible for the minutes, expressing disagreement with the decision made. The CAB officer added the reservation to the minutes, an action which was formally incorrect (as explained below). When the minutes of the previous meeting were being discussed, this action by the CAB officer was challenged by another GMD member (DM1, representing 'hunting and game management'):

There was a diverging opinion expressed by tourism and business. How did you handle that? The diverging opinion was not expressed during the meeting.

The CAB officer and chairperson admitted that a formal mistake had been made and clarified that, to be included in the formal minutes, diverging opinions regarding an item on the agenda have to be announced during the meeting, prior to the chairman stating that decision has been made, before the issue closed. DM2 (who had submitted the reservation) explained that s/he had made a mistake by not discussing the reservation with the deputy before the meeting. After a short, clarifying discussion about the formal rules for recording diverging opinions, the chairperson ended this agenda item to focus on the next.

In this episode we notice a discursive opening for meta-communication: a perspective on formal procedures and frameworks for decision making in the GMD was initiated by DM1. This discursive opening was further elaborated upon by other members, and questions about legitimacy of the rules for decision making and reservations were discussed. The discussion shows that there are differences in the level of understanding of these rules. In the discussion, the legitimacy of the 'reservation' as part of the decision making procedure was questioned, and there seemed to be consensus that it was not legitimate.

However, although the validity of the reservation was investigated, the validity of the perspective (that is, claims of certain knowledge and values, which the reservation

expressed) was not. The meeting rules worked as a discursive closure against the perspective represented in the reservation that was sent in by DM2. The information included in the reservation can be seen as potentially opening a discourse representing a new perspective on bear management that differed from those that led to the decision. The formal rules and frameworks for communication in the GMD did not allow the group to explore the validity of that perspective in relation to the perspective on which the decision was made. The legitimacy, intelligibility, truth and sincerity of the 'perspective' behind the reservation were not investigated. As a consequence of this discursive closure, the differences in perspectives on the goals and methods of bear management held by DM1, in relation to those involved in the decision made in the previous meeting, were not clarified. It is apparent that there is a difference in views (agonism) about bear management, but the 'plurality' of the agonism is not acknowledged, since the content of the differences in perspectives is not made clear. If this difference in perspectives is not investigated in other meeting situations it will reduce the level of adaptive management.

Episode 2, GMD of County A

The conversation in this episode concerned a document written by a CAB officer (CABO1). The purpose of the document was to present guidelines explaining and clarifying the criteria for culling and to help applicants understand both the procedure and when it is worth the effort of applying for a culling permit. The CAB is the authority responsible for approving applications, for instance from livestock owners, for culling of individual bears and wolves considered to be threatening farm production. The criteria on which the CAB bases its decisions about culling are specified by SEPA.

In this episode, the GMD had to decide whether to approve the guidelines written by CABO1 for publication. Note that the decision was not whether to approve the criteria for culling, which are prescribed by SEPA. The role of the GMD is to explain and clarify the criteria currently in use.

The document prepared by CABO1 had been processed in the previous meeting and two comments had been made by delegation members. One of these comments had been incorporated into the revised version of the guidelines presented by CABO1 at the current meeting. The other comment (made by a delegation member (DM3) representing the interest 'landowners') was an objection to a paragraph in the document stating that if culling is approved and carried out, the applicant (for example, a farmer) is responsible for the costs involved. CABO1 explained:

We know that DM3 has pushed for the state to take that cost but we cannot find any way to include it in the guidelines. SEPA will present their new culling policy on 15 November [2011]. Then the policy might be entirely changed depending on SEPA, but the current policy will be valid until then. The moose hunting season starts on Monday and then things might start moving... One application for culling has already been sent in.

We interpret CABO1's reference to SEPA's expected new policy as an attempt to investigate and question the validity of the objection raised by DM3. CABO1 inferred that the objection lacked legitimacy and should not be considered

a valid contribution to the guidelines, because only SEPA (not the GMD or the CAB) has the mandate to change the current policy. In so doing, CABO1 closed the perspective suggested by DM3. In the next sentence CABO1 introduced an alternative perspective about the usefulness of moving on with the guidelines, as the moose hunting season is approaching (with the associated increased risk of hunting dogs being killed by wolves). DM3 immediately responded:

We have checked this up and there are no legal reasons for the state not to carry the cost burden for culling. The only reason is that CAB lacks resources. I do not accept that my contribution is not included in the document.

Here, a discursive opening takes place when DM3 questioned CABO1's reasoning by claiming that SEPA's current policy actually does not include any regulations regarding who is responsible for paying for culling, and that a decision on who should pay can be made by the CAB/GMD. DM3 also indicated that the information given by CABO1, which s/he considered to be false, is based on the fact that the CAB does not have the resources to finance culling. At that stage, other members of the delegation asked to speak, arguing that the suggested guidelines be rejected in anticipation of the new culling policy from SEPA. The apparently inconsistent discourses of DM3 and CABO1 about whether or not the CAB/GMD had the mandate to decide who should be responsible for the costs of culling was therefore closed. The facts and assumptions on which DM3 and CABO1 reached their positions were not stated and the validity of their claims, or of their criticism of the other's claims, was not clarified. So although there is a discussion about the discursive opening, it does not seem to result in evaluation of validity claims. In summary, the different perspectives expressed are:

Perspective 1: There is a need for the current rules to be expressed in a comprehensive way.

Perspective 2: The current rules are illegitimate. Illegitimate rules should not be expressed.

The opponents of perspective 1 also seem to understand this perspective as: 'The current rules are legitimate'. The proposer of perspective 1, CABO1, seems to try to demonstrate that the question about expressing the rules in use, and the legitimacy of the rules in use, should be dealt with as two different questions. According to our notes this idea was not picked up by anyone during the meeting.

After a while the chairperson broke the discussion and announced that the meeting would be prorogued and that s/he wished to discuss the item with the attending CAB officers in private. When the meeting was reconvened the chairperson suggested that the GMD vote for one of two alternatives: 1) to approve the suggested guidelines aimed at clarifying the SEPA directive on culling; or 2) to reject the document and wait for the new policy from SEPA. One GMD member voted for approval, 12 for rejection.

The prorogue of the meeting and the voting procedure work as a discursive closure towards investigation of the relation between the different perspectives, and the result is that it is never made clear whether it would be possible to deal with the two perspectives as separate issues. The way the voting procedure is set up makes perspective one and perspective two mutually exclusive.

Directly after the vote, one member asked a question related to the current culling application format and the chairperson interrupted: "A decision has been taken". The question was asked by the member anyway and, whether the chairperson liked it or not, the discussion about the application form for culling continued for about 5 minutes. At the end of that discussion, the chairperson repeated that a decision had been taken, and indicated that it was time to continue with the other items on the agenda. DM4 (representing the interest 'hunters') stated:

As a member of the delegation I have an opportunity to influence. CAB will be trapped. Our discussion about compensation is an example. We [the GMD] ought to be able to make an expression of will that if it is possible [to change and make the state pay for culling] we should strive for it. [...] But instead of helping us, the CAB just says 'stop'.

The chairperson responded by confirming the importance of the perspective raised by DM3 and concluded by saying:

We would like what DM3 said to be minuted, that there is in fact an opportunity for the state to finance culling.

Although the chairperson's statement is confirming that there is a need for further investigation of the legitimacy of the rules, this confirmation does not work as a discursive opening in this situation. For the members of the GMD the validity of the different perspectives is still not investigated.

A paragraph in a letter sent by the CAB to SEPA stated that the CAB considers it important to have a review of the responsibility for financing culling, so obviously this discussion affected game management, but did the knowledge coordination in this situation generate comprehension of the differences in perspectives? Was this a pluralistic agonistic situation and did it contribute to adaptive management? A number of discursive openings emerged during the conversation about the item, representing different perspectives on the culling procedure. However, evaluations of validity claims behind the perspectives did not take place. Although it is apparent that the claim made by DM3 may influence the next step of policy formulation (offering a new perspective to SEPA), there were limited attempts by GMD members and CAB staff to investigate the validity of the claim in terms of whether it was true and legitimate. It is possible that the CAB staff found the claim to be true and legitimate, but they did not let the members of the GMD know this. It is also possible that the reason for the CAB accepting and forwarding the claim to SEPA was to bring an end to the discussion and move forward to the next item on the agenda. All the delegation members were told that the chairperson regarded the claim as "important".

Episode 3, GMD of County B

The items on the agenda for this meeting were information matters. An officer from SEPA (SEPAO) was invited to present the frameworks for a reorganisation of moose management. In the new system, local groups (moose management groups; MMG) consisting of three landowners and three hunters would coordinate and decide local moose management issues, such as how many animals each hunting team can kill. One of the slides presented by SEPAO showed the criteria for election of members to the MMGs. Two criteria

were: 1) MMG members should be local, and 2) a person can only be a member of one MMG. However, Swedish forest companies own many forests in each county and on a national level these companies have stated that they disagree with these criteria for electing MMG members and want the same person to represent them in all the MMGs belonging to the same county. After the presentation by SEPAO, GMD member DM5 (representing the interest 'forest industry') asked what was meant by 'local'. SEPAO answered that if it proves to be impossible to find candidates for the MMGs, it is possible for the same person to be elected to more than one MMG. SEPAO noted that this issue had been widely debated and referred to some of the arguments made, namely that it is important to avoid some MMG members having more information than others and that MMG members have to be available locally. DM5 then clarified the question:

I mean, what do you mean by 'local' in relation to the moose management area? Does one have to live in or work in the area?

SEPAO answered that the members of the MMG should have some kind of "platform" which makes them affiliated to the moose management area. Now the chairperson (CP) of the GMD contributed:

I will make sure we apply a great deal of pragmatism in this. When it comes to 'local', the meaning of local was apparent when a journalist at Ölandsbladet [a newspaper; distributed on Öland, a rural island in another part of Sweden] asked the editor if they should write about the murder of John F. Kennedy. The editor asked: 'Has Kennedy ever visited Öland?' No-one had heard that he had, and the editor replied: 'Then that is no news for this newspaper'. This is a parallel to how one can understand 'Locally affiliated member'.

DM5: I am questioning the values behind this list of criteria. There might be advantages with persons being members of several MMGs.

CP: As I said, very pragmatic. One has to use one's head for thinking. Any other questions? No, then we will take the next issue. Carnivores...

When asking about the meaning of 'local', DM5 opened up a new perspective, implicitly suggesting the need for an investigation of the validity of the list of criteria for election of MMG members and especially the legitimacy of the definition of 'local'. SEPAO accepted the invitation to investigate legitimacy and tried to argue why the criteria are legitimate. SEPAO also confirmed an understanding of some of the criticisms raised, but not particularly the question asked by DM5. DM5 seemed to think the question was misunderstood and offered a clarification. When the chairperson intervened, the discourse about the legitimacy of the criteria for electing MMG members was closed. Guaranteeing pragmatism, without clarifying what was meant, implied that GMD members should trust the judgment of the CAB (or even that of the chairperson). The anecdote about the newspaper did not provide any clear answer to the question raised by DM5 and also prevented DM5 from responding. However, it seems that DM5 recognised the closure of the discourse about the legitimacy of 'local', and tried to open it again, by

explicitly expressing disagreement with the values behind the criteria. The chairperson again closed the discourse by guaranteeing the quality of the CAB (chairperson's) judgment, but without demonstrating an understanding or acceptance of the validity claim made by DM5. The closure became definite when the CP asked: "any other questions? No, then ...". This implicitly stated that the issue was closed. If DM5 had tried to open the discourse for a third time, this would have implied questioning the authority of the chairperson.

Episode 4, GMD of County C

This episode took place in a meeting where members of the GMD were expected to appoint appropriate wolf territories for the release of wolf cubs from zoological gardens to be adopted by wild wolves. The item was commissioned by the Swedish government and all GMDs of counties with a permanent wolf population were asked to undertake the assignment. SEPA had developed a list of criteria to guide the selection of territories. A CAB officer (CABO2) had prepared for the selection by investigating the conditions of the wolf territories in the county in relation to these criteria. At the meeting, the GMD had to decide whether the territories suggested by CABO2 met the criteria.

The political background to the release of wolf cubs comprised a decision within the Swedish Parliament on improving the genetic status of the Swedish wolf population (more or less all individuals of which originate from one breeding pair in the 1980s). Three years before the episode described here, a government decision was made to legalise licensed wolf hunting in combination with efforts to reduce inbreeding by incorporating foreign genes/wolves into the population. The Swedish hunting organisations supported this policy and agreed to collaborate in its achievement. One wolf hunt took place in 2009 and one in 2010, but hunting was then cancelled due to a reprimand from the European Commission. At the time of the episode described, there was doubt about whether licensed hunting would be carried out in 2012. The hunting organisations claimed that the cessation of licensed hunting violated their agreement with the government and declared they would therefore not support any efforts to improve the genetic status of the Swedish wolf population.

The item was introduced by the chairperson, who described the nature of the assignment the GMD had to undertake and continued:

We are to recommend two territories for the release of wolf cubs. We are obliged to do it. You might think no cubs at all should be released in this county. However, our task is to decide upon the two sites we find most suitable. If you disagree with the decision you can make a reservation.

DM6: *Is it the government or SEPA who has assigned us?*

CP: *It's the government [continued with what we understand to be feigned severity:] Then you do not mess around!*

[GMD members laugh]

DM7: [Imitating a characteristic local dialect] *Yes you do, if you come from County C*

[laughs]

This initial sequence constructed a discursive closure as well as a discursive opening. When the chairperson pointed out that the GMD is obliged to undertake the assignment, this opened a certain, very narrow format for the members to express alternatives, namely to make reservations against the decision expected to be taken. Implicitly, this meant there was no space for elaboration on alternative views ('these rules are set by the government and cannot be waived'). When DM7 responded that it is in fact possible to challenge the government if you come from county C, this opened up a meta-communicative perspective, while simultaneously reminding GMD members that they share an identity as citizens of County C, who are well-known for questioning and disobeying the authorities. The widespread laughter among the members indicated that this implied perspective was recognised and appreciated.

After this, CABO2 described the SEPA criteria on appropriate territories for releasing wolf cubs and adult animals. Some of the GMD members pointed out inconsistencies in the criteria and CABO2 agreed, for instance by noting that the criteria are not "spot-on" but still needed to be followed.

After going through the criteria, CABO2 presented a map showing all wolf territories confirmed in county C so far, and went through these one at a time, explaining why they cannot be regarded as appropriate for adopting foreign wolf cubs. CABO2's reasoning regarding the protected territories and numbers of wolves was questioned by GMD members, based on a fairly widespread belief that the CABs (which are responsible for predator surveys) consistently hold down the official number of wolves in the county. CABO2 replied:

This is according to our current knowledge, but we have had indications from hunters which we have not had time to confirm yet.

Up to this point the episode was full of examples of discursive openings which were elaborated upon further; for instance, delegation members raised questions about the validity of the knowledge represented by CABO2 and CABO2 in turn acknowledged the questions by clarifying the level of validity. The presentation was then completed by CABO2 proposing two territories for the GMD to recommend to SEPA, but adding that it was too late for the release of wolf cubs in the coming spring. This was because the wolf females suggested as adoptive parents would already be pregnant and also lacked transmitters and could not be exposed to the transmitter operation whilst in a pregnant condition. CABO2 continued:

Therefore we have asked SEPA if we can delay the appointment of territories until next year, but they have not listened.

The chairperson asked for opinions on this suggestion from CABO2. One GMD member stated that it was not possible for him/her to participate in any decision on recommended territories as the licensed hunting for the next season was still uncertain. Another argued that it would be impossible to gain acceptance for such a recommendation from the group s/he represented, as there were too many wolves in the county already. Other members questioned the whole idea of releasing wolf cubs by arguing that the costs

associated with the operation would be high and that it was highly unlikely that the cubs would survive. The chairperson asked the members to confine their discussion to what they had been asked to decide upon (that is, the recommendations), but suggested that they might submit their concerns alongside their decision.

After further objections, a GMD member (DM8) suggested that the GMD fulfil the commission by agreeing to the two territories selected by CABO2, but add a clarification stating that the recommendation was only valid under conditions that were currently known. If the conditions were to change (for instance if the next CAB survey reported a different number of permanent wolves in the county than the current estimate), the GMD should demand the right to reconsider the agreement. This contribution opened up what we perceive to be quite a relieved discussion, when GMD members who were critical about releasing wolf cubs realised that they could comply with the given assignment but ensure that the recommendation remained useless. With this solution, no cubs would be released in the present year or in the next year, since the GMD could then claim that conditions had changed, which would revoke their decision. In their view the mandate was too limiting, as they were given no space to express their dissatisfaction or their doubts about the whole idea of releasing wolf cubs.

The chairperson declared the suggested approach constructive and satisfactory and recommended that the GMD submit the recommendation together with a declaration that its proposal only applied under the prevailing circumstances. The GMD was then asked to vote on the proposed recommendation and the majority voted in favour.

A discourse questioning the legitimacy of the actual assignment allocated to the GMD seemed to remain open throughout this episode, although not explicitly expressed from the beginning. A number of questions were asked during the presentation by CABO2, apparently in order to explore the intelligibility and truth of CABO2's presentation. The way in which CABO2 responded to the questions gave the GMD members opportunities to understand more about the reasoning of SEPA (when developing the criteria) and CABO2 (when trying to follow them). It was only when the chairperson asked for the members' opinion about CABO2's suggestion that a number of alternative discourses opened up, questioning among other matters the legitimacy of the government assignment and the veracity of the wolf surveys reported by the CAB. The chairperson closed all of these in an attempt to follow the mandate of the government assignment (yes or no to CABO2's suggestion). DM8's solution to the dilemma, to avoid meeting the assignment without "messing around", may have satisfied the members. However the limited mandate provided no opportunities to explore and develop understanding about a number of issues that were raised, which seemed vital for the members of the GMD.

Reasons for discursive closures

In the four episodes described, we noted a number of discursive closures. The consequences of these closures were that knowledge perspectives with potential relevance, but with unclear validity, for game and game management were

not elaborated upon in terms of their truth, intelligibility, legitimacy or sincerity. Perspectives which are closed cannot contribute to the agonistic pluralism of game management, to borrow the language of Mouffe (2005). Subsequently the level of adaptive management, including potential for joint learning, was limited in these situations. The reason for the limitations is not primarily lack of knowledge or information, but rather low communicative capacity of the institution to which the GMDs belong, which does not allow elaboration of the validity claims available.

The institutional structure for GMD meetings - that is, the rules and procedures for distribution of mandate, meeting frameworks and roles - thus supports a communication practice that promotes discursive closures. In episodes 1-4, discursive openings of potential relevance for adaptive game management were closed when the need to discuss these perspectives contradicted the framework for the meeting. Discourses were closed: 1) when they were not articulated in the right way, at the right time or place (episode 1); 2) when a decision had to be made and the structure for decision making demanded simple decision alternatives (episode 2); 3) when the item on the agenda simply comprised information (episode 3); and 4) when the decision making mandate was too narrow (episode 4). In addition, in the meetings we observed there was an atmosphere of time pressure and the chairpersons interrupted conversations in order to allow all the items on the agenda to be dealt with (episodes 1-4).

Another aspect related to the meeting frameworks concerned the way conversation was coordinated and permission to speak was granted. During the meeting, the members were invited to speak by the chairperson according to the order in which they raised their hands. This led to recurrent discursive closures, as members focused on putting forward their individual arguments once they were granted permission to speak. Many aspects of the issue at hand were discussed simultaneously.

In focus groups, GMD members expressed a desire to talk to each other about game and management questions, as well as their individual views on these issues. However in GMDs no time was set aside for this on the agenda. There seemed to be a conflict between GMD members' need to discuss basic game and game management issues, and the official demand for effective, focused meetings that supply answers to requests from policy level. This is another reason why discursive closures occurred, as GMD members seized their chance to ask questions relevant to their area of interest about basic game management issues not included on the, often narrow, agenda of the GMD meetings. Discourses reflecting a need for information about basic management were repeatedly closed by the chairperson.

The observations of the dynamic between discursive openings and closures in these episodes in GMD meetings raises some questions about practical normativity. Theoretically we have discussed the suggestion that for adaptive management to occur, as it is described in the normative literature (cf. Gunderson et al. 1995, Lee 1999) there is a need for discursive openings to be elaborated upon through investigation of validity claims. In the observed episodes we notice that discursive openings are closed when the GMD is insisting on following rules and procedures which

are constructed in order to generate transparent and legally certain decision making procedures, with reduced opportunities for meeting the criteria of AM as a consequence. The question that emerges from this is: Is there any way for the GMD to create, and maintain, procedural rules which simultaneously meet the need to elaborate upon the validity claims of discursive openings and also the requirement for meetings which are legal and transparent? This needs to be investigated further.

Conclusions

This study investigated how the communicative capacity of natural resource management institutions constrains adaptive management, using Swedish game management delegations (GMDs) as a case study. The concepts of discursive closure and discursive opening proved useful for investigating communicative capacity. Our analysis of four episodes in GMD meetings revealed that discursive closures arose and affected the adaptive capacity of game management. The expectations of GMD members, and the institutional frameworks of the GMD, generated a communication practice that admitted and supported the exercise of discursive closures. When discursive closure was introduced, it resulted in reduced pluralism of perspectives and subsequently reduced opportunities for adaptive management. In these situations, clearly not all knowledge and values presented are relevant and valid. The problem with a communication practice which admit discursive closures is that the relevance and validity of knowledge and value contributions are not evaluated, which means that decisions about the knowledge that should be included in management considerations is based on something other than assessment of validity and relevance. The scope of the study did not allow us to evaluate the level of adaptive management in Swedish GMDs in general. However, we have no reason to believe that the influence of discursive closures in the observed meetings was extraordinary, so it can be assumed that discursive closures are reducing the adaptive capacity of GMDs in other situations too. In order to generate a transition of communication capacity in GMDs, changes are needed in the institutional framework of GMDs to allow procedures and tools explicitly supporting the communicative rational management of discursive openings to be introduced.

It is beyond the scope of this study to decide whether the way in which the chairperson and GMD members dealt with issues was right or wrong. However, we observed that multiple perspectives were expressed and that there was no function operating in the meeting for admitting agonistic pluralism to develop and instead discourses representing perspective differences were closed. An important question is whether it would be practically possible to keep to the meeting agenda and rules AND admit discursive openings about the differences in perspectives. This issue needs to be addressed in future studies.

Previous studies of AM often focus on how agreements and other outcomes of processes that are claimed being adaptive, affect the understanding and management of the natural resources in question. The point of departure for our study is to highlight the supposed adaptivity in the management process in terms of knowledge coordination through

communication. We see this exploration as promising as it clearly displays the importance of understanding communication as an intersubjective, social process for understanding adaptive management. We suggest monitoring and analysis of changes in communication, and the consequences of these changes on the dynamic between discursive openings and closures, to be essential parts of the assessment of AM processes. Such approach would provide understanding about how the design of the communicative procedures of AM processes relates to the opportunities for the actors involved to explore and coordinate different knowledge representations, thus contributing to fulfilling the very meaning of the AM concept, shared learning.

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