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Killing animals for recreation? A quantitative study of hunters' motives and their perceived moral relevance[§]

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Abstract

Hunters in the Western world today do not need to hunt to obtain food and other animal products. So why do they hunt? This paper examines the motives of hunters, the motives ascribed to hunters by members of the general public, and the role motives play for the moral acceptability of hunting among members of the general public. It draws on a nationally representative survey of the general public ($n=1,001$) and hunters ($n=1,130$) in Denmark. People with a negative attitude to hunting are more likely to take motives into account when they consider the acceptability of hunting. Three clusters of motives defining distinctive hunting motivational orientations were identified: *action/harvest*, *management/care* and *natural and social encounters*. The general public ascribed *action/harvest* motives to hunters more than hunters did. In a policy perspective, if hunters' motives are misperceived, improved dialogue may be needed to protect the legitimacy of recreational hunting.

Keywords public attitudes, Denmark, ethics, hunting motivational orientations (HMO), wildlife

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1. Introduction

Hunting can be seen as a way of taking responsibility for acquiring one's food (Ljung et al., 2012), but in modern recreational hunting obtaining food is rarely, if ever, the hunter's main motive. Given that the hunter's primary motive for hunting is not food or income, but instead some form of personal reward or enjoyment, it is scarcely surprising that many of those who do not participate in it question hunting's acceptability, and that some look upon hunters as morally dubious individuals who simply take pleasure in tracking down and killing animals. To what extent this is the case is the focus of the present paper.

The legitimacy and ethical acceptability of hunting in general, and recreational hunting in particular, has been questioned by some (Cohen, 2014; Fisher et al., 2013; Thomas, 1983) and hunts may be seen as anachronistic in modern society (Peterson et al., 2010). As Lovelock (2007: 4) observes, "hunting and shooting are not generally popular pastimes of the educated middle class". Attitudes depend, however, on various factors, such as the composition of the population and its traditions. In the US, hunting enjoys high levels of acceptance. This has been so for decades, and in some places support for hunting is increasing (Decker et al., 2015). The situation is similar in European countries with large rural areas such as Sweden (Ljung et al., 2015). The mode of hunting also plays a decisive role in shaping attitudes (Heberlein and Willebrand, 1998), and support has been found to be significantly lower for recreational hunting than it is for subsistence hunting. Moreover, the way recreational hunting is organized and carried out further affects perceptions of its acceptability. For example, hunting of wildlife that is reared and released to be hunted is less acceptable to the public than the hunting of a natural wildlife surplus (Gamborg et al., 2016; Woods and Kerr, 2010). Attitudes to hunting have been connected to different theoretical frameworks, and notably to the wildlife value orientations pioneered by Fulton et al. (1996).

These orientations tell us something about perceptions of appropriateness and acceptability in human-wildlife relations. In the Danish context, people with a so-called mutualist orientation – where the coexistence of humans and animals in a sort of community is regarded as essential – have the most negative attitude to hunting (Gamborg & Jensen, 2017). At present, less is known about the way hunters’ motives (or more accurately, people’s perceptions of those motives) shape attitudes. But clearly, the perceived motives of hunters may play an important role in determining the acceptability of hunting practices and inform moral arguments about hunting (Fischer et al., 2013).

‘Recreational hunting’ here refers to the active pursuit and killing of wild vertebrate animals other than fish (Wightman et al., 2002) when that is carried out voluntarily as a pastime without a commercial or subsistence element (Plumber, 2009). The term ‘recreational’ could therefore be taken to signal a personal motive which explains the meaning of hunting for the hunter (Reiss, 2004; Manfredi et al., 1996). This motive may be described as intrinsic in that it relates to a person’s goals, interests and values. External motives, by contrast, are formed by external factors or pressure (Batson, 2015; Deci and Ryan, 1985). In the following, when we refer to motives, we mean intrinsic motives.

Whether motives for recreational hunting affect a person’s view of its moral acceptability will, of course, depend on that person’s moral perspective. For present purposes two moral perspectives stand out. From a consequentialist point of view, actions are made right by their consequences, or results, not by the intention or purposes of the agent. Motives can have an indirect relevance, because they can steer a person toward actions with specific outcomes. But they have no inherent moral significance. Deontologists, on the other hand, hold that an action can be judged right, or wrong, for reasons other than its consequences, and thus within

the deontological framework the acceptability of an action may hinge directly on the agent's motives. Those with a deontological outlook may, for example, emphasize 'good' or 'virtuous' motives expressing benevolence or care for others (Slote, 2001). From this point of view, a course of action may be judged unacceptable, or wrong, in spite of promoting happiness or resulting in desirable outcomes of some other sort. A relevant deontological view, so far as the present discussion is concerned, would need to consider certain motives morally problematic in themselves, i.e. independently of the outcomes of pursuing these motives.

Although they are connected, motives are not necessarily the same thing as justifications (Wood, 1997). Justifications of hunting sometimes address its expected or actual impact on affected parties, such as people, wildlife or the rest of nature. These impacts may be taken to show that a certain kind of hunting is justified. Hunters' motivations may very well vary independently of such justification. Thus, two hunters may differ in their motives for hunting so-called surplus wildlife. One may do it for the meat. The other may do it for the sport. But they may agree that the ultimate justification of their participation in hunting is that it manages wildlife and maintains the health of the game population.

In the literature on the relationship between hunting and motives two main types of study can be found: conceptual studies of hunting motives (e.g. Cartmill, 1995; Causey, 1995) and empirical studies identifying hunters' motives, most often as these are expressed by hunters themselves. In a study of the first kind, Kheel (1996) addressed motives as part of a critique of hunting. She made philosophical distinctions between the "happy hunter" (who reflects psychological needs), "the holist hunter" (who is motivated by ecological aspects of the hunt) and the "holy hunter" (who has needs that can be seen as spiritual). Subsequently, Wood

(1997) presented four archetypal motives based partly on selective, qualitative readings of hunters' own accounts of their activities: "being part of nature", "following a tradition", "being a provider of food", and "being a predator" (the last involves the acting out of instinctive behavior). Reflecting on his results, Wood considered the relation of them to the ideas of the game management specialist turned nature philosopher Aldo Leopold, who in the 1930s, again in a US setting, saw four components in hunters' motives: "trophy", "feeling of wilderness", "fresh air", and "perception of natural processes" (*Ibid.*).

Empirical studies of hunter's motives based on social science methods are more common. Early on, in the US, Kellert (1978) distinguished between "nature hunters", who seek to be close to nature, "meat hunters", whose aim is to obtain food, and "sports hunters", whose motive is mainly recreational. In another American study, Decker and Connelly (1989) identified three sets of motives: "affiliative-orientated", stressing companionship and tradition; "achievement-orientated", focusing on meat, trophies and sightings; and "appreciative", wanting to be part of nature, to get a sense of place, and to enjoy also the aesthetics of the hunting experience. Later studies have examined motives related to trophy hunting (Radder, 2005) and other types of hunting in Africa (Radder and Bech-Larsen, 2008), as well as the motives of recreational hunters of various kinds in North America (e.g. Bhandari et al., 2006), New Zealand (Woods and Kerr, 2010), Australia (Finch et al., 2014), and Europe (e.g. Grandy et al., 2003). In general, empirical studies of hunters' motives examine mainly Western hunting culture, possibly as a result of the authors' recognition that hunting is a "cultural activity with significant social contexts" (McCorquodale, 1997: 568). Examples include Kerr and Abell (2014), Harper et al. (2012), Grilliot and Armstrong (2005) and Gigliotti (2000).

The existing studies are lacking in two ways. *First*, none, to our knowledge, makes an empirically grounded *and* statistically based attempt, using e.g. factor analysis, or the like, to reveal clusters of motives – i.e. what Decker et al. (2013) call “hunting motivational orientations” and what Fedler and Ditton (1994) term “motivational profiles”. These orientations can be thought of in parallel with value orientations (as described by Schwartz, 2006). As has been mentioned in connection with wildlife value orientations (Fulton et al., 1996), they can also be used to connect motives with their meaning to the agent. Unlike core motives, motivational orientations may be linked to behavior, if that is understood as an expression of more fundamental intrinsic motivations. Motivational orientations thus form part of an individual’s structure of reasons for initiating and performing voluntary behavior in the course of an activity (here: hunting) and help to explain the tendencies and intensity of one’s motives. *Secondly*, previous studies do not ask specifically how motives affect perceptions of the acceptability of hunting. Where they do touch on this question, they fail to separate the general public’s beliefs about hunters’ motives from hunters’ self-professed motives, and so they do not differentiate their findings and connect them to the perceived moral acceptability of recreational hunting.

In addressing the perceived moral relevance of motives for killing animals in recreational hunting, our work falls within the field of empirical ethics. Our aim is to ask whether, and if so to what extent, members of the general public think motives matter to the acceptability of recreational hunting. We also aim to discover what motives hunters actually have, or at least state that they have, and what motives the general public perceive hunters to have.

In general terms, then, our goal is to understand what goes on in actual discussions about the legitimacy of recreational hunting. Also, we wish to expose mismatches, if there are any,

between what members of the general public take to be the driving motives of recreational hunters and what the hunters themselves see as their motives. In this way, our findings may help to remove misunderstandings between hunters and the general public. Throughout our investigation, however, we have avoided the normative question whether motives should or should not be seen as morally relevant – both in general and when it comes specifically to hunting – as we do not see it as our role to advocate a position in this context: our purpose is the more limited one of determining hunters' actual motives and then ascertaining what moral relevance these motives are perceived to have.

On the basis of a national survey among hunters and the general public, we addressed the following questions: 1) Does it matter to public attitudes to the acceptability of hunting what motives hunters have? 2) What motives do the general public perceive hunters to have, and how do these compare with the motives hunters declare? 3) At a more aggregated level, focusing on clusters of motives, or hunting motivational orientations, we ask: What orientations do the public ascribe to hunters? And 4) What relationship, if any, is there between hunting motivational orientations and attitudes to hunting?

2. Methods

2.1 Sample selection and representativeness

A national survey of the general public ($n=1,001$) and hunters ($n=1,130$) was carried out. The questionnaire designed for the general public (see next section) was sent to a sample of the Danish population aged 18-79 years by a polling firm, AnalyseDanmark. As we wanted to relate our results to a representative sample of the general public – and not, for instance, only to non-hunters or the urban population – the sample included hunters in proportion to the

national frequency (4%) and proportionate numbers of urban and rural residents. Responses were collected until a sample of 1,000 respondents had been obtained which was representative in terms of the age and gender of panel-members of AnalyseDanmark (see more on representativeness in the next paragraph of this Section). During August 2012, the questionnaire was sent to 3,595 people, of which 1,001 (27.8%) responded. In the hunter survey, 2,000 hunters younger than 80 years old, who had taken out a license in 2011, were randomly selected from the Danish national hunting license register. Since it is mandatory for Danish hunters to renew their licenses every year, this register would have included all licensed hunters in the country. Female hunters were oversampled by a factor of three to obtain a sufficient number of responses from that particular group. In October 2012, the selected hunters received a letter with a request to complete the online questionnaire via a personal link. After five weeks a reminder was sent to non-respondents. The survey generated a total of 1,130 responses (with 19 via printed questionnaires sent to respondents on request), corresponding to an overall response rate of 56.5%.

Demographic characteristics of the sample representing the general public were compared with those of the 2012 general Danish population using *Statistics Denmark*. As the test for gender ($p=.09$) showed a slight overrepresentation of males, and the test for age ($p<.0001$) showed a clear overrepresentation of people between 50 and 79 years of age, the sample data set was subsequently weighted for age and gender. Additional checks on income and level of education showed an overall bias with underrepresentation of lower income groups and of people whose highest level of education was vocational training. However, the sample was not weighted to correct for income and education bias owing to a lack of sufficiently detailed cross-population statistics. Hence all results for the general public presented here are based

on weighted data that is representative of the Danish general public in respect of gender and age (18-79 years).

The hunter survey was weighted to overcome bias resulting from the oversampling of female hunters. All hunter results presented here are based on the weighted data representative of the Danish hunting population in respect of gender and age (<80 years).

2.2 Instrument

The data were collected in late 2012 and early 2013 in two separate web-based questionnaires prepared in SurveyXact (a data-gathering system designed for use in web-based questionnaire surveys: see <http://www.surveymxact.com/>). A draft of each questionnaire was pilot-tested on approximately 20 people with key similarities to the target population. Before and after the piloting, advice from hunting experts was sought (jury inspection of content validity).

The part of the survey discussed in the present paper consisted of a set of questions about hunters' motives for recreational hunting. The list of motives presented was based on an analysis of current public and stakeholder debates together with two focus group interviews with hunters and members of the general public completed by the authors in 2011.

In the survey, respondents from the general public were asked if hunters' motives affected their attitude to recreational hunting. They answered on a 4-point scale from "no, not at all" to "yes, very much". Before being asked about specific motives, respondents were provided with an introduction: "There may be various motives for hunting. Below are a number of motives listed in random order. How important do you think these motives for hunting are for most hunters?" Respondents were asked to indicate for each of the 13 motives how important

they thought the motive was on a 4-point scale, ranging from 1 “not important” to 4 “very important”. There was an option to state motives “other” than those listed, and respondents also had the option of answering “don’t know”. However, the “other” motive and “don’t know” responses were excluded from the statistical analysis in order to focus on the views of respondents who had taken a stance on the listed motives. Finally, the general public were also asked about their general attitude to hunting on a scale ranging from 1, “very negative”, to 5, “very positive”.

Respondents involved in recreational hunting were presented with the same list of 13 motives and the same introductory text, apart from the last part, which needed to be changed to: “How important are these motives for you to go hunting?” Like for the general public, the hunters had the option to state “other” motives and answering “don’t know”. The same procedure was followed (exclusion from data analysis).

2.3 Data analysis

Statistical analysis was carried out using SAS version 9.3. Chi²-tests (PROC FREQ), *t*-tests (PROC TTEST), and analysis of variance (Tukey’s HSD, PROC GLM) were used to examine representativeness, differences between the two sample-groups, and the relationship between the general public’s overall attitude to recreational hunting and motives, as well as hunting motivational orientations.

Hunting motivational orientations were identified by a factor analysis (PROC FACTOR, Varimax rotation). This analysis was based on the general public sample as we wanted that to be the general baseline for all subsequent analysis (both in the present paper and in any future

analyses).¹ To analyze the internal consistency of the three orientations derived from the 13 specific hunting motives, Cronbach's alpha values were calculated (PROC CORR).

The data set includes a number of socio-demographic variables. These variables were only used in the analysis of representativeness, as the focus of the present paper was on the national level.

3. Results

Overall, it was found that a slight majority (54%) of respondents from the general public stated that the hunter's motive for hunting did not really affect their attitude toward hunting (33.6% "No, not at all"; 20.7% "No, just a little"). However, among the respondents with a negative attitude to hunting (8.6% "Very negative"; 16.8% "Somewhat negative") a relatively higher percentage confirmed that motives mattered in their judgment (Table 1). Thus, there was a relationship between having a ("very") negative attitude to hunting and taking motives to be more important (to matter "very much").

¹ An additional factor analysis based on the hunter sample was performed to test whether that would provide a more elaborate picture of motivational orientations which could undermine our decision to have the general public as the baseline. The test was negative, as it only revealed a 2-factor solution which explained less of the variance (26.4%) than the chosen general public solution (44.6%) (see Results section).

Table 1 Importance of hunters' motives for the general public's attitude to hunting.

"What is – all in all – your attitude to hunting?"									
	Very negative (8.6%)	Somewhat negative (16.8%)	Neither/nor (31.2%)	Somewhat positive (25.5%)	Very positive (17.9%)	<i>n</i>	χ^2	<i>p</i> value	Cramer's <i>V</i>
"Does the hunter's motive for hunting play a role in your attitude to hunting?"							101.7	<.0001	.184
No, not at all (33.6%)	31.3	17.0	42.2	32.1	37.5	336			
No, just a little (20.7%)	10.3	21.0	26.9	20.9	14.1	207			
Yes, to some degree (30.5%)	21.7	43.8	25.1	33.6	27.4	306			
Yes, very much (15.2%)	36.7	18.2	5.8	13.4	21.0	152			
<i>n</i>	86	168	313	255	179				

When the motives the general public attributed to hunters were compared with those expressed by hunters themselves, there was a statistically significant difference in the importance of every motive except motive 11 ("social aspect") (see Table 2). However, the general public and hunters did agree over which motives are the most important drivers of participation in hunting and which are the least important: the mean values show that both groups rated motives 1 ("nature experience") and 11 ("social aspect") highest, and motives 8 ("identity"), 7 ("business relations") and 4 ("killing") lowest.

Table 2 The general public's and hunters' rating of importance of hunting motives.

	General public	Hunters			
		Mean ¹	<i>n</i>	<i>t</i> -value	<i>p</i> -value
Hunters go hunting...					
1. for the nature experience	3.29	3.77	928/1120	-15.51	<.0001
2. for the sport	3.19	2.20	907/1080	25.09	<.0001
3. to have peace and quiet in stressful everyday life	2.99	3.12	889/1101	-3.43	.0006
4. for killing	1.75	1.21	874/1108	14.65	<.0001
5. for wildlife care/management	2.75	3.00	900/1090	-5.87	<.0001
6. for the meat	2.72	2.36	913/1114	8.98	<.0001
7. to manage business relations	2.31	1.27	802/1093	26.77	<.0001
8. to maintain an identity	2.42	1.55	796/1091	20.30	<.0001
9. to conserve nature	2.55	2.88	875/1094	-7.70	<.0001
10. to work with dogs	2.55	2.26	881/1063	6.06	<.0001
11. for the social aspect – fellowship with friends	3.22	3.18	918/1114	.99	.32
12. to experience excitement	3.00	2.43	899/1112	13.74	<.0001
13. for the trophy	2.77	1.75	895/1111	25.21	<.0001

The following introduction text was given:

“There may be various motives for hunting. Below are a number of motives listed in random order.”

General public: “How important do you think these motives for hunting are for most hunters?”

Hunters: “How important are these motives for you to go hunting?”

¹ Calculation of mean was based on the response-scale: 1=Not important; 2=Somewhat important; 3=Important; 4=Very important.

Factor analysis of the ratings provided by the general public showed that hunters' motives could be grouped into three clusters, or hunting motivational orientations. We labelled these: 1. *action/harvest*, 2. *management/care*, and 3. *natural and social encounters* (Table 3). The first orientation incorporates action-related motives, including sport, killing, and excitement, as well as harvest motives related to meat or trophies. The second gathers together the management or care both of human-animal relations, such as working with dogs or wildlife

management, and of human-nature relations, such as conservation. The third orientation focuses on the hunter's encounters with the natural world, peace and quiet, and the enjoyment of social interaction with friends and fellow hunters.

Table 3 Factor analysis of the general public's rating of importance of hunting motives.

Hunters go hunting...	Factors		
	1. "Action/harvest"	2. "Management/ care"	3. "Natural and social encounters"
8. to maintain an identity	.69	.11	-.05
7. to manage business relations	.69	.08	-.16
13. for the trophy	.68	-.12	-.10
12. to experience excitement	.66	-.22	.13
4. for the killing	.44	-.21	-.44
6. for the meat	.36	.16	-.08
2. for the sport	.36	-.04	.20
9. to conserve nature	-.08	.81	.29
5. for wildlife care/management	-.07	.79	.21
10. to work with dogs	.26	.55	.27
1. for the nature experience	-.14	.28	.59
3. to have peace and quiet in stressful everyday life	-.04	.29	.54
11. for the social aspect – fellowship with friends	.40	.17	.45
Eigenvalue	2.55	1.91	1.33
Explained variance (%)	19.7	14.7	10.3

The factor solution (Varimax rotation) explained 44.6% of the total variance. $n=662$. Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO)=0.788.

The three orientations represented a valid clustering of the measured motives, as the factor solution explained 44.6% of the total variance. Calculation of Cronbach's alphas indicated an adequate internal consistency among the hunting motivational orientations of the general

public (alpha values ranged from 0.81 to 0.59).² At this more aggregated level we compared the general public's and hunters' ratings of the importance of motives in these motivational orientations and found that all three orientations differed significantly between the two groups (Table 4). The general public attributed *action/harvest* motivational orientations to hunters to a higher degree than the hunters did themselves, and the hunters emphasized the *management/care* and *natural and social encounters* orientations more highly than the general public.

Table 4 The general public's and hunters' rating of three hunting motivational orientations.

		<i>n</i>	Mean	Median	SD	Cronbach's alpha	Tukey's HSD ⁴
<i>(A) Action/harvest</i> ¹	General public ²	689	2.58	2.57	.58	.75	GP>H
	Hunters ³	1036	1.82	1.86	.48	.64	
<i>(B) Management/care</i>	General public	835	2.62	2.67	.80	.81	H>GP
	Hunters	1031	2.71	2.67	.79	.71	
<i>(C) Natural and social encounters</i>	General public	879	3.17	3.33	.60	.59	H>GP
	Hunters	1097	3.36	3.33	.55	.45	

¹ The three orientations (*A*, *B* and *C*) were formed on the basis of the factor analysis (Table 3). *A* consisted of motives no. 2, 4, 6, 7, 8, 12 and 13; *B* consisted of motives no. 5, 9 and 10; and *C* consisted of motives no. 1, 3 and 11. Calculations were based on the response-scale: 1=Not important; 2=Somewhat important; 3=Important; 4=Very important.

² General public: "How important do you think these motives for hunting are for most hunters?"

³ Hunters: "How important are these motives for you to go hunting?"

⁴ Tukey's HSD: GP=General public; H=Hunters. Significance level: .05

Turning to the relations between hunting motivational orientations and attitudes to hunting (Table 5), we found that respondents from the general public with a negative attitude to

² Since factors were established based on the responses of the general public, Cronbach alphas for hunters might be lower than those of the general public (alpha values ranged from 0.71 to 0.45).

recreational hunting endorsed the *action/harvest* motivational orientation as the most important driver for hunters more than those with a positive attitude to recreational hunting.

Table 5 The general public’s beliefs about hunters’ three motivational orientations by attitude to hunting.

What is – all in all – your attitude to hunting?''							
	Very negative	Somewhat negative	Neither/nor	Somewhat positive	Very positive	<i>n</i>	Tukey’s HSD ¹
<i>(A) Action/harvest</i>	3.09	2.80	2.55	2.51	2.31	689	1>2>3,4>5
<i>(B) Management/care</i>	1.86	2.34	2.49	2.76	3.11	835	5>4>3,2>1
<i>(C) Natural and social encounters</i>	2.64	2.93	3.17	3.29	3.41	879	5>3,4>2>1

¹Attitude towards hunting for Tukey’s HSD: 1=Very negative; 2=Somewhat negative; 3=Neither/nor; 4=Somewhat positive; 5= Very positive. Significance level: .05

Respondents with a more positive attitude to hunting, by contrast, perceived the *management/care* or *natural and social encounters* motivational orientations to be the most important drivers of hunters. Indeed, hunters seemed to follow this latter alignment (see Table 4).

4. Discussion

Our aim was to evaluate the perceived moral relevance of motives for recreational hunting. To this end, we identified the motives of Danish hunters and compared these with the general public’s perception of hunters’ motives. We performed the comparison at an aggregated level with a factor analysis, which allowed us to compare clusters of motives, or motivational orientations, and to look at the relationship between these orientations and attitudes to hunting.

The first research question was: Does it matter to public attitudes to the acceptability of hunting what motives hunters have? The main result here was that for those members of the general public who had a negative attitude to recreational hunting motives were a key factor; and that members of the public with a more positive attitude to recreational hunting did not place the same emphasis on motives. Thus, in those who had a negative attitude to recreational hunting the negative attitude was strongly coupled with a certain perception of the motives of hunters. Some non-hunters, for example, found it difficult to see the point of spending time in the countryside shooting at other living beings (Emborg and Gamborg, 2016). So the typical negative attitude to recreational hunting found among members of the Danish public may be accompanied by two elements: it emphasizes the hunter's motive as the basis of moral assessment (reflecting, as explained in the Introduction, a deontological approach to moral judgment), and it ascribes to hunters motives that are regarded as unattractive.

Although purpose is not quite the same thing as motive (the immediate purpose of ingratiating behavior is to please, while it is motivated by self-interest), it is clear that the hunter's purposes can be translated into corresponding motives. This means that understanding the way purposes correlate with attitudes to hunting can help to explain our results. Previous studies have found that acceptance of recreational hunting declines when hunting is viewed as a recreational pastime in which wild animals are killed for sport or pleasure (Fischer et al., 2013; Delibes-Mateos et al., 2015 and Lundhede et al., 2015), rather than being pursued out of 'necessity' for subsistence purposes (Ljung et al., 2012). In a similar vein, it has been found that when hunting is conducted to cull individuals or populations to prevent the spread of disease or for ecologically desirable population control it

is viewed as more acceptable by the general public than it is when it is pursued ‘merely’ for recreation (Jensen, 2009).

The results can also be understood in relation to the goal implicit in the latest major revision of the Danish Act on Hunting and Game Management (1994), where a non-legally binding standard for good hunting practice was set out. Although it is not binding, this standard seems to have played an important role in legitimizing and justifying recreational hunting in the broader societal context (Hansen et al., 2012), and the Act’s principles are often referred to in discussions of hunting. Interestingly, the Act not only specifies ‘good and right’ hunting *behavior*, but also discusses the ‘right’ *purposes* of hunting. It states that all hunting must have a purpose which amounts to more than simply killing wildlife (for the fun or excitement of it), and that all killed animals are to be collected and used for food, fur and other recognized purposes (with the exception of diseased animals or animals killed because they cause harm).

The suggestion that recreational hunting can be justified with reference to utility (cf. Ljung et al., 2015; Ljung et al., 2012) leads naturally to a discussion of the conditions under which hunting can be seen as useful or required. This discussion is likely to have a certain cultural bias: the hunting of wildlife may be accepted because it is part of a culture in which these activities have traditionally played a major role.

The second research question asked what motives the general public perceive hunters to have, and how these compare with the motives hunters actually declare. It was found that there was a mismatch in the degrees of importance assigned to motives here. Overall, however, the motives ranked as most important by the public and hunters – nature experience and the

social aspect – accord with those found in other studies (Bhandari et al., 2006; Woods and Kerr, 2010, Finch et al., 2014; Grandy et al., 2003).

Moving to the more aggregated level, the third question asked: What hunting motivational orientations do the public ascribe to hunters? Three hunting motivational orientations were identified, and all three differed significantly in terms of emphasis between the two groups. Other studies have also attempted to group motives, sometimes on the basis of subjective assessments, and to arrive at stereotypical sets of hunters’ motives (e.g. Kellert, 1978; Decker and Connelly, 1989). It should be noted, though, that the clusters and results of the studies we have referred to were not obtained via the kind of methodology (including factor analysis) we deployed. Clearly, the composite orientation, *action/harvest*, although it is not perhaps intuitively recognizable does not correspond well with Kellert’s (1978) motivational framework; but it does align more readily with Decker and Connelly’s (1989) “achievement-oriented” hunter motive.

The interplay of hunting motivational orientations and respondents’ attitudes to hunting was the subject of our fourth research question. We asked: What relationship, if any, is there between hunting motivational orientations and attitudes to hunting? Here, a statistically significant correlation was found between attitudes to hunting and each of the three orientations. To understand these correlations, it is useful to examine the modes of reasoning that might underlie an attitude to hunting, and then to align these arguments to the hunting motivational orientations. Of course, we recognize that respondents will employ different modes of reasoning and form different attitudes as a result. We nevertheless found that, among members of the general public, those who attributed to hunters a higher degree of *action/harvest* orientation than their own were also likely to have a negative attitude to

hunting. This may reflect a more deontological view according to which certain motives are morally problematic in themselves, i.e. independently of the consequences of pursuing these motives. In the following, we examine this in relation to each of the motivational orientations found.

As explained earlier, *action/harvest* is a composite orientation. It includes elements both of utility (obtaining meat) and of action and enjoyment. This makes it more difficult to see how this orientation is related to motives affecting the acceptability of recreational hunting.

Negative evaluations of the action dimension of the *action/harvest* motivational orientation may be related to the view that hunters are motivated by personal benefit – a motive which might be construed as selfish (see Slote, 2001). Hunters, in other words, seek enjoyment of a kind quite unlike the enjoyment described in the *natural and social encounters* orientation (which focuses more on peace and quiet). The enjoyment may be perceived as a ‘primitive’ form of excitement at taking the life of an animal for personal pleasure (Batson, 2015).

Equally, the harvest dimension can be viewed in a negative light. For example, it might be felt that treating nature as something to be ‘harvested’ is denigrating to the animals and instrumentalizes them, and the fact that the hunt is paid for, if it is, may be seen as a sign that nature is being commodified (Kheel, 1996). The ‘harvesting’ of a trophy may be perceived as a form of bragging (Radder, 2005). ‘Utility’ quite generally may come to be viewed less positively in the future, in increasingly urbanized societies, as the use-values of wildlife are questioned (Grandy et al., 2003). These potential associations may help to explain why the *action/harvest* motivational orientation was associated with a negative attitude to hunting.

More positive connotations have been attached to the *management/care* motivational orientation. This may explain why a greater proportion of hunters than the general public stressed these motives, and why members of the general public who did associate hunting with the *management/care* orientation tended to have a more positive attitude to recreational hunting. The explanation could be that recreational hunting is seen as something that furthers human-animal relations – for example, in the form of hunter and hunter’s dog – and deepens human-nature relations (Ericsson and Heberlein, 2002). The *management/care* orientation may also be perceived positively because it assumes that others will be able to enjoy the outcome of the nature management being envisaged (cf. Fischer et al., 2013). The possibility of mixed attitudes to the *management/care* orientation is also reflected in the higher standard deviation of this orientation as compared with that of the two other orientations (SD in Table 4). Attitudes here will probably depend, however, on whether the management undertaken by the hunting community is seen as something that furthers nature conservation in a broad sense or as an intervention focusing narrowly on game management. For some the latter is questionable, because it is seen as leading to a ‘distortion’ of nature (Gamborg et al., 2016). Equally, some may feel that nature is simply better left alone. Being natural may not be the same as being ‘in need’ of management.

Positive connotations can also be connected with the *natural and social encounters* motivational orientation, and this may help us to understand why a greater share of the public with a more positive attitude to recreational hunting emphasized the importance of motives clustered in this hunting motivational orientation. In relation to the nature encounters, wanting to be immersed in nature, and seeking peace and quiet, are well-known motives for many types of outdoor recreation and are generally evaluated positively, including by non-participants (Parnabas et al., 2016). The same can be said about the attraction of the social

encounters aspects, i.e. building and consolidating relations with friends and family by taking part in recreational hunting together (Woods and Kerr, 2010) or sustaining rural socialization (Stedman and Heberlein, 2001).

The hunting motivational orientation variables we have developed and introduced here certainly seem to contribute to our understanding of attitudes to hunting. Most of their alpha values are above .60, which would be taken by some statisticians to demonstrate “adequate” reliability. However, the alpha values for the motivational orientations of the hunters are generally lower than the values for the general public, and this indicates that the results for the hunters’ motivational orientations are slightly less reliable (especially the *natural and social encounters* orientation). It should be borne in mind that Cronbach’s alpha is “an estimate of the consistency of a set of items when they are administered to a particular group of respondents at a specific time under particular conditions for a specific purpose” (Vaske 2008: 518).³

5. Conclusion

Our findings indicate that motives do indeed play a role in shaping attitudes to the acceptability of recreational hunting: there was a relationship between having a (“very”) negative attitude to hunting and taking motives to be more important (to matter “very much”). Given the difference between the motives attributed by the public to hunters and the motives hunters themselves declare, communication and understanding between hunters and

³ Repetition of the survey would permit greater certainty about its reliability. In assessing the validity of the survey, we have relied on pilot tests and jury inspection of the instrument by experts. However, we cannot be certain that, for example, all respondents understood the terms we used in the way we assumed.

the public could be improved. Hunters are engaged in a lawful activity, and hence are not strictly required to justify their behavior to the wider public. But in some occasions, hunting is increasingly controversial and under pressure. This can be seen, for example, in arguments promoting limits to the numbers of game species and licensed types of hunting (Gamborg et al., 2016). In these cases, hunters might be interested in presenting their case effectively so that they protect their right to hunt. If they wish to do this, the present study suggests that motives related to *management/care* and *natural and social encounters* have more positive connotations than motives related to *action/harvest*. It also suggests that an emphasis on the former motives might help to cultivate more positive attitudes to hunting. On the other hand, if a significant number of members of the public perceive a mismatch between hunters' stated motives and their actual practices, or if the importance hunters attach to motives and practices continues to be misunderstood by their critics, this may undermine the legitimacy of recreational hunting.

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