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## THREAT PERCEPTION OF LARGE CARNIVORES: ARE THERE SEXUAL DIFFERENCES?

**H**unting and defence from large carnivores historically has been a man's fate. He-man was a stronger and warlike part of mankind. Psychological treaties of men came from these roots. Based on this, we could expect differences in the threat perception between human sexes. Thus, our null-hypothesis is that woman should show bigger fear (valued like "I am afraid", "dangerous") or greater distance (valued like "alien", "ugly" etc.).

On the other hand, the current situation is quite the reverse. The feministic movement and higher status of woman's education makes a lot of woman become an active part of our society. They took an active part in social movements, including nature protection. If this activity could be extended to the issue of large carnivores, then both human sexes should have no significant differences in their views.

Data for this publication were gathered by the means of questionnaire in 2000-2001. We processed 810 answers, covering most of the Lithuania, with exception of 2 administrative districts. Out of 150 questions only those related to the threat perception were analysed. Reliability of differences between sexes were tested by chi-square criterion, used in 2 different ways:

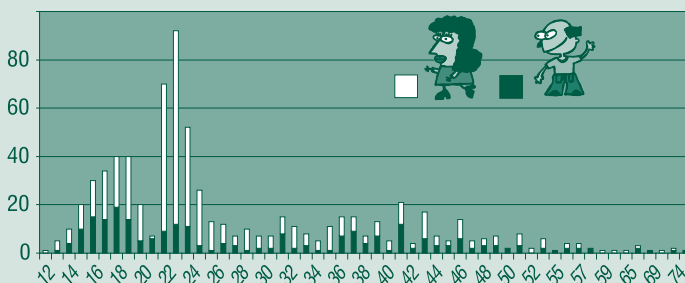
1. Forming 2x2 tables, based on two sexes and two opposite characters (e.g. men-woman, afraid-not afraid)
2. Comparing observed vs. expected series, where expected is calculated from the total according to the proportion of man and woman in the sample

### Social status of our respondents

**O**ut of 810 answers there were 243 men (31%) and 542 woman (69%). In 25 questionnaires sex of the respondent was not indicated.

Age structure of respondents is presented in Figure 1. Two

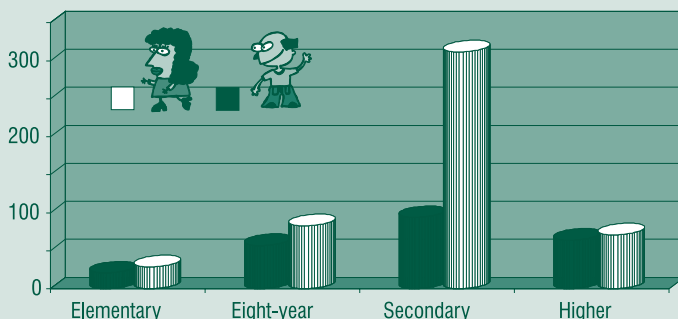
age peaks are clearly distinguished in the diagram. First is at the age of 15-17 years and formed by schoolchildren of higher grades. This group is equally represented by both sexes. The highest peak is at the age of 20-23, formed by students. Women reliably dominate this age group. Such a bias is due to a number of respondents from Šiauliai University, where pedagogical disciplines were mainly attended by young woman. The rest of the age groups were again equally represented by both sexes.



**Fig. 1**  
Age structure of the respondents (n)

age

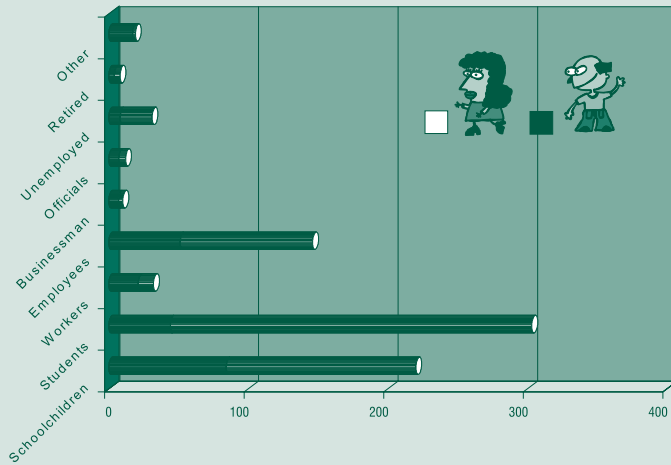
For the same reason there is a bias towards woman dominance in the group of respondents having secondary education, that is – students (Fig. 2). Other groups – elementary education (schoolchildren up to 9th grade), eight-year education (9th-12th grades of secondary schools and all gymnasium classes) as well as a group with higher education – were equally represented by both sexes.



**Fig. 2**  
Education of the respondents (n)

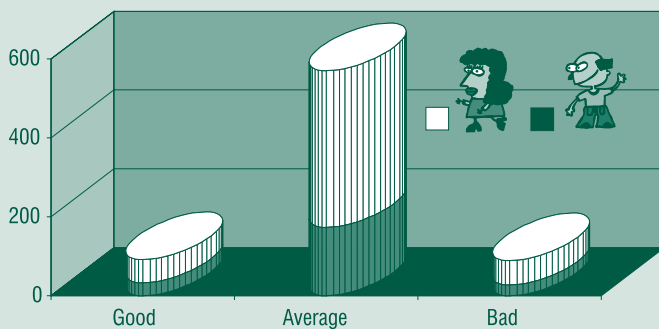
Social status of the respondents is shown on the Figure 3. Woman-dominated social groups were students (men –14.5%, woman – 85.5%, schoolchildren (38.2% and 61.6% respectively), employees (34.9% and 65.1%) and unemployed (25.8% and 74.2%). Men dominated in workers, officials and some other social groups.

**Fig. 3**  
Social status of the respondents (n)

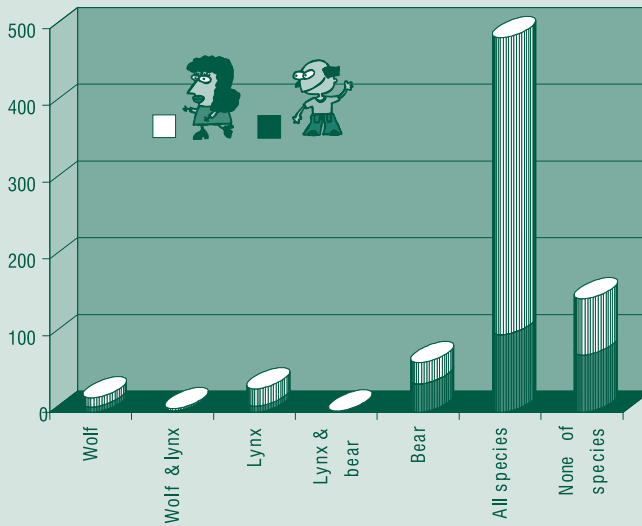


The well-being of the respondents was subjectively indicated by themselves in three-grade scale (good – average – bad) (Fig. 4). Among men, 13.9% of respondents categorised their well-being as good, 74.9% - as average and 11.2% as bad. Among woman, the proportions were the same – 11.4%, 76.6% and 12.0% respectively. From this we conclude, that equal living standard should have not affected answers to the questionnaire.

**Fig. 4**  
Well-being assessment of the respondents (n)



The number of respondents who evaluated separate carnivore species as dangerous to human is shown on the graph (Fig. 5). Most of the respondents characterised all three big carnivores as dangerous. Significantly less number of people think that only bears are dangerous. Lynx and wolf are classified as dangerous to human by a comparatively few of respondents.



## Results of general threat evaluation

**Fig. 5**

Threat assessment of separate carnivore species by the respondents (n)

There were sexual differences in the threat evaluation. To remove influence of the sample size, which makes graphical image biased, proportions for every species were calculated in both sexes as percent (Table 1).

	Wolf	Wolf & lynx	Lynx	Lynx & bear	Bear	All species	None of species
Man (n=230)	3.0	0.9	3.5		16.1	43.9	32.6
Woman (n=528)	2.3	0.6	4.35	0.4	5.3	73.3	13.8

**Table 1**

Sexual differences in threat evaluation of separate carnivore species (in %)

**Population number and trend evaluation**

Differences were statistically reliable in three cases:

1. Three times as many men suppose that bears are dangerous (chi-square = 7.58, p = 0.006);
2. Almost twice as many woman suppose that all three species of large carnivore are dangerous (chi-square = 11.23, p = 0.0008); and
3. Almost three times more man suppose, that none of these species are dangerous (chi-square = 12.93, p = 0.0003).

Respondents were asked to give numbers of wolf and lynx populations in Lithuania. 28 men (14.4% of those, who answered this question) and 86 women (23.1%) wrote that they did not know the number of wolves. 37 men (19.5%) and 113 women (31.7%) stated that they did not know the number of lynxes. So, 1.6 times more women were unaware of large carnivore population numbers.

More or less, the correct number of animals was reported in about a twenty percent of answers (Table 2). Speaking about wolf, ca. 30 percent of woman and more than 40 percent of men underestimated current number. Wolf numbers were overestimated in about a quarter of answers from both sexes.

**Table 2**  
Assessment of wolf and lynx numbers by respondents (n, %)

	Wolf				
	0-100	101-500	501-1000	1001-5000	>5000
Man	12 (6.2)	75 (38.4)	<b>36 (18.5)</b>	26 (13.3)	18 (9.2)
Woman	21 (5.7)	83 (22.3)	<b>83 (22.3)</b>	55 (14.8)	44 (11.8)
	Lynx				
	0-10	11-50	51-150	151-500	>500
Man	10 (5.2)	28 (14.7)	<b>44 (23.2)</b>	37 (19.5)	34 (17.9)
Woman	9 (2.5)	28 (7.9)	<b>60 (16.9)</b>	83 (23.3)	63 (17.7)

Lynx numbers were more overestimated than wolf numbers – ca. 40 percent of answers of both sexes. Underestimates were less frequent, especially in women answers. The percentage of correct answers was about the same as in wolf.

Knowledge of Lithuanians about population trends of large carnivores is presented in Table 3. More than half of woman respondents and about 40 percent of men respondents confessed their ignorance in this matter. The greater part of the rest, both men and women, know that lynx numbers are decreasing. The same proportion of men and women suppose that wolf numbers are decreasing – in fact all of them are wrong. An increase or stability of wolf numbers were reported by more men than woman.

	Increasing		Stable		Decreasing		I do not know	
	Man	Woman	Man	Woman	Man	Woman	Man	Woman
Wolf	24.9	12.8	14.8	5.7	25.7	28.9	34.6	52.6
Lynx	3.4	3.6	13.6	3.4	41.7	33.8	41.3	59.2

Based on the presumption that overestimation of animal body weight may reflect unconscious fear, from the Table 4 we may conclude, that:

1. Those who overestimated wolf and lynx weight were dominated by woman;
2. Men were better informed about wolf's and lynx's body weight;
3. The percentage of woman who confessed their ignorance in this question was twice as high in comparison with men.

Wolf					
	< 30 kg	31-60 kg	61-90 kg	> 90 kg	I do not know
Man	6.7	62.3	20.5	2.5	8.0
Woman	6.5	41.7	28.3	4.7	18.8
Lynx					
	< 15 kg	16-25 kg	26-35 kg	> 35 kg	I do not know
Man	15.0	38.2	23.2	9.0	14.6
Woman	12.0	22.0	23.4	16.0	26.6

**Table 3**

Assessment of wolf and lynx population trends (% of total answers)

**Table 4**

Knowledge of the wolf and lynx body weight (%)

**Personal attitude to the population management and the future**

The next three questions were devoted to clarify how many aggressive measures of population management could be tolerated by respondents (Table 5). Most respondents do not think that the current number of wolves is too high. Even more of them would not like to pay rewards for hunted wolves. More than 80 percent of respondents of both sexes disagree with wolf extermination. Only 1.5% of women and 1.7% of men definitely approve extermination of wolves in Lithuania.

**Table 5**  
Personal attitude of respondents towards wolf population numbers and management (%)

	Definitely disagree		Disagree		No opinion		Approve		Definitely approve	
	M	W	M	W	M	W	M	W	M	W
Wolf numbers are evidently too high and should be diminished	15.8	11.0	48.8	45.2	18.8	32.3	12.5	9.5	4.1	2.0
I'd like to give money to the hunter's reward for hunted wolves	33.6	29.0	44.1	50.9	10.9	13.6	9.3	6.1	2.1	0.4
Wolves must be exterminated, leaving only a few in deepest forests	43.2	34.8	41.5	47.4	7.2	8.5	6.4	7.8	1.7	1.5

Opinion about lynx numbers and their population measures was surprisingly similar to that of wolf (Table 6). Only 1.3% of woman and 3% of man definitely approved lynx's extermination in the country, but more than 80 percent of respondents of both sexes disagreed with this measure. 60 to 70 percent of respondents did not support diminishing lynx numbers.

**Emotional attitude to large carnivores**

We expected that sexual differences in threat perception should be most expressed as an emotional plain. All examined emotional characteristics were expressed verbally, on the

	Definitely disagree		Disagree		No opinion		Approve		Definitely approve	
	M	W	M	W	M	W	M	W	M	W
Lynx numbers are evidently too high and should be diminished	26.6	17.3	48.5	47.4	21.0	29.1	2.6	5.8	1.3	0.4
I'd like to give money to the hunter's reward for hunted lynxes	35.8	30.1	47.4	51.3	11.2	15.2	4.3	3.0	1.3	0.4
Lynxes must be exterminated, leaving only a few in deepest forests	43.8	37.6	42.9	44.4	6.9	9.9	3.4	6.8	3	1.3

**Table 6**

Personal attitude of respondents towards lynx population numbers and management (%)

scale of five grades, from the best to the worst. Answers are generalized into Table 7.

Speaking about wolf and lynx, more men than women used the expressions "I admire" and "I like". Totally, acceptance of wolf was expressed by 73.7 % of man and 48.5% of woman (chi-square = 30.48,  $p = 0.0000$ ); acceptance of lynx by 83.4% of man and 71.3% of woman. Expression "I do not like" was used more in woman, but the strongest degree of dislike, the expression "I hate" was slightly higher in men.

In valuation, how nice large carnivores are, respondents show the same preferences. The percentage of men who agreed with valuation "beautiful" and "nice" was slightly higher than those of women. For wolf this is 77.8% vs. 71.3%, for lynx 93.2% vs. 93.1, and the differences are not reliable. The valuation "not nice" was used by twice as high a percentage of women. Again more men than women stated that wolf is "ugly".

The cleanliness of big carnivores was assessed similarly. Slightly more men think that wolf and lynx are "clean" ani-

**Table 7**  
Emotional point of view  
to some characteristics  
of the large carnivores  
(%)

	Wolf		Lynx	
	Man	Woman	Man	Woman
I admire	12.4	4.7	24.2	14.8
I like	61.3	43.8	59.2	56.5
I do not care	14.3	23.7	11.9	15.2
I do not like	10.6	27.4	3.8	12.9
I hate	1.4	0.4	0.9	0.6
Beautiful	11.1	8.6	32.3	27.3
Nice	66.7	62.7	60.9	65.8
I do not care	11.6	14.1	5.5	4.1
Not nice	8.3	13.6	0.9	2.4
Ugly	2.3	1.0	0.4	0.4
Very cleanly	2.4	2.1	17.3	11.0
Cleanly	44.0	36.1	59.3	58.2
I do not care	34.3	28.1	19.6	23.3
Unclean	16.9	30.5	3.3	7.3
Dirty	2.4	3.2	0.5	0.2
Sweet	1.9	0.6	4.2	2.9
Friendly	10.3	8.4	23.9	19.5
I do not care	26.6	11.7	30.1	17.2
Not friendly	30.8	41.9	23.0	36.7
Aggressive	30.4	37.4	18.8	23.7
Very good	2.4	0.7	2.8	0.9
Good	27.3	23.0	33.7	25.0
I do not care	42.1	37.8	40.8	41.5
Bad	25.8	36.8	19.4	30.0
Very bad	2.4	1.7	3.3	2.6
I am not afraid at all	10.9	3.0	11.2	3.3
I am not afraid	43.8	17.7	46.0	18.0
I do not care	10.0	5.8	15.8	9.1
I am afraid	32.4	58.6	22.8	56.8
I am horrified	2.9	14.9	4.2	12.8
Very safe	5.1	1.4	9.2	0.8
Safe	31.6	10.0	32.2	10.9
I do not care	12.6	6.2	13.8	8.4
Dangerous	45.6	76.0	39.2	70.8
Very dangerous	5.1	6.4	5.6	9.1
Very useful	14.5	8.5	10.7	3.1
Useful	61.7	66.8	60.9	63.7
I do not care	12.6	13.9	18.6	24.3
Not useful	5.1	5.4	5.1	5.0
Harmful	6.1	5.4	4.7	3.9

imals. And vice versa, twice as many women characterise both carnivore species as “unclean” (chi-square = 12.24,  $p = 0.0005$  for wolf). As “dirty”, wolf was valued in 3.2% of woman respondents and 2.4% of men. In general, both sexes supposed that lynx is more clean than wolf.

In general, both lynx and wolf were treated as “not friendly” animals. Negative valuations dominated in this group of answers. 61.2% of men and 79.3% of women characterised wolf as “not friendly or aggressive” (chi-square = 4.47,  $p = 0.03$ ). Lynx was supposed to be a bit friendlier: 41.8% of men and 60.4% of women used negative expressions about lynx (chi-square = 6.89,  $p = 0.003$ ). Quite a high percentage of respondents characterized lynx as “friendly” or even “sweet”, but they do not think so about wolf.

On the scale “good or bad”, valuations dispersed in the same order. More men characterised both species as “good”, more women as “bad”, but there were no extreme differences. In this question a lot of respondents answered “I do not care”. In the direct expression of fear (valuated from “I am not afraid at all” to “I am horrified”), the differences between men and women were expressed to a higher extent. While 54.7% of man were not scared of wolf, the same is true for only 20.7% of woman. And vice versa – fear of wolf was expressed in 35.3% of answers in men and 73.5% of answers in women. The ultimate evaluation, “I am horrified”, the answers were shown in women in a five-fold higher proportion.

56.2% of men and only 21.3% of women were not afraid of lynx. Fear was expressed in 27.0% of men’s answers, but in 69.6% of woman’s answers (chi-square = 90.27 for wolf and 109.94 for lynx, both  $p = 0.0000$ ). The highest expression of fear was characteristic by a three-fold greater proportion in women.

The same distribution of values between men and women was found in valuation of large carnivores on a scale “safe-dangerous”. Noticeably, a higher proportion of men characterized wolf as a “safe” animal – 36.7% vs. 11.4% in woman (chi-square = 72.17,  $p = 0.0000$ ). Speaking about lynx, this disagree-

ment was even higher: lynx was characterised as safe animal by 41.2% of men and 11.7% of women (chi-square = 92.02, p=0.0000). As “dangerous”, these animals were characterised by women mostly. The ultimate expression “very dangerous” was used by almost the same proportion in both sexes.

But, despite of fear, wolves and lynxes were regarded as quite useful animals by both sexes of respondents. Men differed from women only in the ultimate positive valuation – more men regarded wolf and lynx as “very useful”.

The last two questions to be analysed in this report are:

1. Is the issue of wolf and lynx numbers, management or species conservation important to you personally?
2. Is it important for you personally to know news on wolf or lynx, their number dynamics, species conservation or extermination?

Answers to these questions are presented as Table 8 and Table 9.

**Table 8**  
Expression of personal importance of an issue of large carnivore management and species conservation (n, %)

	Wolf		Lynx	
	Man	Woman	Man	Woman
Absolutely insignificant	6 (2.5)	17 (3.2)	9 (3.9)	11 (2.0)
Insignificant	17 (7.2)	37 (6.8)	19 (8.1)	48 (9.0)
I am not interested	89 (37.4)	310 (57.3)	82 (35.0)	307 (57.3)
Important	114 (47.9)	169 (31.2)	107 (45.7)	159 (29.7)
Very important	12 (5.0)	8 (1.5)	17 (7.3)	11 (2.0)

From the Table 8 we may see that issues of large carnivore management and species conservation were more important to men than to women. More than 45% of men regarded these issues as personally important, but the same was true to less than 30% of woman. Sexual difference was even more expressed between persons who characterized the issue as “very important”. Also, a lot more of woman answered that they are not interested in this issue.

	Wolf		Lynx	
	Man	Woman	Man	Woman
Absolutely insignificant	4 (1.7)	11 (2.0)	3 (1.3)	9 (1.7)
Insignificant	16 (6.7)	39 (7.2)	19 (8.1)	36 (6.7)
I am not interested	80 (33.6)	264 (48.8)	81 (34.6)	293 (54.7)
Important	123 (51.7)	217 (40.1)	114 (48.7)	186 (34.7)
Very important	15 (6.3)	10 (1.9)	17 (7.3)	12 (2.2)

**Table 9**

Expression of personal importance to know new about large carnivores, their number and management measures taken (n, %)

Several conclusions may be drawn from this short and preliminary presentation:

1. Both sexes were inadequately informed about carnivorian population trends
2. Both sexes were quite tolerant to current numbers and do not support strict measures of population control/management
3. **Women were more afraid of the large carnivores than men, and this is clearly expressed by their emotional valuation of wolf and lynx (in most cases, differences are statistically reliable).**
4. In general, people are more afraid of lynx and it is characterized as a dangerous animal.
5. Despite the negative emotional valuation and well-expressed fear of both species, men and women do not question the usefulness of wolves and lynxes. They also give quite positive characteristics of the exterior of these animals (nice and clean) and enjoy them.

## Conclusions

### STAMBIŪJŲ PLĖŠRŪNŲ PAVOJAUS SUVOKIMO SKIRTUMAI TARP VYRŲ IR MOTERŲ

Pranešime pateikiami stambiujų plėšrūnų pavojaus suvokimo skirtumų tarp vyrų ir moterų analizės rezultatai. Duomenys buvo surinkti anketinės apklausos būdu. Iš 810 atsakymų paašškėjo 243 vyrų ir 542 moterų požiūrių skirtumai.

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- Dauguma atsakiusių mano, kad žmogui pavojingos yra visos trys stambiųjų plėšrūnų rūšys – lokiai, vilkai ir lūšys. Taip teigia dukart daugiau moterų negu vyrų. Triskart daugiau vyrų mano, kad žmogui pavojingiausi yra lokiai. Be to, triskart mažiau moterų mano, kad plėšrūnai nėra pavojingi.
- Daugiau ar mažiau teisingą stambiųjų plėšrūnų skaičių žino tik apie 20% apklaustųjų. Apie 30% moterų ir apie 40% vyrų mano, kad vilkų skaičius Lietuvoje yra mažesnis nei iš tikrųjų. Ketvirtis vyrų ir moterų mano, kad vilkų yra žymiai daugiau. Lūšių skaičių pervertina apie 40% vyrų ir tiek pat moterų. Dauguma abiejų lyčių apklaustųjų žino, kad lūšys Lietuvoje nyksta.
- Tarp išsivaizduojančių, kad vilkai ir lūšys yra stambesni nei iš tikrųjų, daugiau yra moterų. Tikrąjį šių žvėrių dydį geriau žino vyrai.
- Daugiau atsakiusių nemano, kad vilkų Lietuvoje yra per daug. Daugiau nei 80% abiejų lyčių atstovų nemano, kad vilkus reikėtų išnaikinti – tokį sprendimą paremtų tik 1.5% moterų ir 1.7% vyrų. Šie skaičiai idealiai atitinka požiūrį į lūšis.
- Neigiamus emocinius stambiųjų plėšrūnų vertinimus pateikia daugiau moterų nei vyrų. Dvigubai daugiau moterų teigia, kad vilkas ir lūšis yra negražūs arba bjaurūs ir nešvarūs. Abu gyvūnai laikomi nedraugiškais – taip mano 61.2% vyrų bei 79.3% moterų. Lūšies vertinimai yra švelnesni.
- Tiesiogiai plėšrūnų baimę akcentuoja daugiau moterų. Vilko nebijo 54.7% atsakiusių vyrų ir tik 20.7% moterų. 35.3% vyrų bei 73.5% moterų vilko bijo, o labai vilkų bijančių moterų yra net penkis kartus daugiau. Lūšies nebijo 56.2% vyrų ir 21.3% moterų, o bijo atitinkamai 21.0% ir 69.6%. Žymiai daugiau vyrų nepavojingu laiko vilką, o ypač – lūšį.
- Nepaisant baimės ir negatyvių emocinių vertinimų, ir vyrai ir moterys stambiuosius plėšrūnus laiko naudingais.
- Vyrams labiau rūpi tiek patys plėšrūnai (jų skaičius ir populiacijos kontrolė), tiek ir naujienos šioje srityje.