

## EMOTIONS, EMOTION TERMS AND EMOTION CONCEPTS IN AN ESTONIAN FOLK MODEL<sup>1</sup>

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**Abstract.** The article examines the Estonian folk model of emotions as it presents itself in the Estonian emotion vocabulary. The results of an empirical study are presented and two interrelated topics discussed: the role of emotions, emotion terms and concepts in the layperson's model and the relevant facets of the popular emotion category in Estonian.

### Introduction

Emotions can be treated as a natural part of human experience. It is equally natural to constantly experience emotions and to think and talk about this experience. Words and concepts can be treated as the main tools of talking and thinking, respectively. Yet what are the interrelations of ubiquitous experiential units (emotions), units of cognitive processing (concepts) and units of verbal communication (words) is far from obvious.

There are figurative and literal expressions in languages for both expressing and describing emotional experience (Kövesces 2000). Though there are differences across languages in the range and scope of specific emotion terms, the very principles of conceptualising emotions have been claimed to be universal (Wierzbicka 1999). Some cognitive linguists have argued that in the vocabulary of a specific domain a folk theory or layperson's model of the domain is built up (Öim 1999).

A layperson's model represents the socially relevant common sense of a topic in a given culture, the basic level knowledge that most people share and by which most part of their everyday experience is interpreted. It is not clear, however, whether a layperson's model is mostly influenced by the realm it intermediates (e.g. emotions), the realm it serves (social norms and interactions) or the realm it is carried by (a specific language).

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The universality vs specificity of emotions, emotion terms and emotion concepts across cultures and languages is a topic of interdisciplinary interest to anthropologists, psychologists and linguists (e.g. Scherer & Wallbott 1994, Russell et al 1995, Hupka et al 1999, Wiercicka 1999). The field methods originally used in anthropology and psychology have been introduced into linguistics. A tradition of empirical studies based on field methods and reliable data was derived from the cross-cultural study of folk colour terms by Brent Berlin and Paul Kay emphasising the evolutionary universality of vocabularies (Berlin & Kay 1969). Different semantic fields have been studied with similar methodology, e.g. terms of botanical and zoological life-forms (C. H. Brown, 1977, 1979), etc. Also an attempt has been made to demonstrate the universal development of emotion categories in 64 natural languages (Hupka et al 1999).

The present study explores the folk model of emotions as it presents itself in the Estonian emotion vocabulary. Two interrelated topics are discussed: the role of emotions, emotion terms and concepts in the layperson's model and the relevant facets of the popular emotion category in Estonian.

## 2. A case study: emotion vocabulary of Estonians

### 2.1. Background

Estonians are a nation of about 1 million situated on the southern coast of the Gulf of Finland. Although they speak a Finno-Ugric language, relation to Western cultures (especially German) is supposed to be dominant by some researchers (e.g. Ross 2002). As in any other language there are plenty of words in Estonian, referring to and differentiating between the qualitative and quantitative aspects of emotional experience. The boundaries of the natural category "emotions" itself are yet not clear in Estonian as this category seems to be mixed and blended with another closely related natural category "feelings".<sup>2</sup>

There is no linguistic nor anthropological analysis of Estonian emotion terms available so far. The earlier attempts to explore the Estonian vocabulary referring to emotional experience (Veski 1996, Allik 1997, Kästik 2000) belong to the field of psychology. The goal of these investigations has been to ascertain not a layperson's emotion vocabulary *per se*, but the use of the vocabulary for the description of experience. Jüri Allik has found out that most of the variation of emotion vocabulary is accounted for by two dimensions: Positive Affect and Negative

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<sup>2</sup> There are three competing terms in contemporary Estonian referring generally to emotional experience: *tunne* 'feeling, sensation', *emotsioon* 'emotion, feeling' and *tundmus* 'sentiment, feeling'. All three are roughly synonymous; differences lie in the scope of use and social status of the words. Two of the terms *tunne* and *emotsioon* are common terms referring to any type of emotional experience. *Tunne* is a trivial native word with a lower social status than *emotsioon*, which is a non-native word also used in the (socially higher) sphere of psychology. The word *tundmus* is proposed as a label for a higher order category of 'feeling, sensation' in contemporary Estonian psychological literature, whereas the meaning of *emotsioon* is defined to be narrower as 'an act or short process of experiencing *tundmus*' and thus this term is subordinate to *tundmus* (Kidron 2001).

Affect, which are claimed to be unipolar dimensions, not to be regarded as opposites (Allik 1997, Allik & Realo 1997). Ly Kästik takes Russell's model (Russell 1980) as an example and argues for the crossing dimensions pleasantness/unpleasantness and high/low activation constituting the so-called subjective space of emotion terms, in which every single term can be located.

The principles of selecting linguistic data for those psychological inquiries have carried out by experts so far. This means that people are questioned about what they have experienced (Veski 1996) or what they count as emotions (Kästik 2000) using certain test words selected beforehand by one or more "experts". Veski and Allik established a structural correspondence between the Estonian word selection and the English word selection of Watson's and Clark's PANAS-X scale (Watson & Clark 1994).

## 2.2. Object

The object of the present study is to explore the layperson's model of emotions as it presents itself in the Estonian emotion vocabulary. In order to find out what words the Estonians consider as belonging to the category of emotions, an empirical study was carried out (Vainik 2001). Several more specific goals were stated for the study: to collect the vocabulary of emotions being "actively used" by real native Estonian speakers; to examine the basic emotion terms and concepts in Estonian, taking into account their frequency and mean position of being mentioned by the subjects. The resulting data are examined from both psychological and linguistic points of view.

## 2.3. Method

As the focus of the present investigation is on layperson's terms and concepts of emotional experience the selection of the relevant vocabulary for the current research has also been made by laymen. For collecting data and to best meet the specific goals of the empirical investigation the field method of Urmas Sutrop (2001) was used. The ordinary task of free listing of category members was complemented by several additional detailed list tasks, three of which are reported here:

A. The list task of category (emotions/feelings) members.

B. Naming antonyms (if any) for the concepts listed in the first task.

[...]

Listing the subcategories of positive, negative and neutral emotions (if the subject accepts such a division).

## 2.4. Procedure

The list tasks were carried out (01.05.2001–22.06.2001) in the form of oral interviews without previously informing the subjects of the theme. The essence of the list task was first illustrated with a trivial sample of listing members of the "fruits" category: *apple, pear, plum*, etc. As the tentative inquiry showed that it was difficult for the respondents to list members of a rigid category labelled "*emotsioonid*" 'emotions', so in the working inquiry the category label was

replaced by a more flexible one “*emotsioonid/tunded*” ‘emotions/feelings’ and the subjects were encouraged to mention everything that came to mind in association with that category label, without considering if the words coming to mind were “proper” emotion terms or not. The interviewer documented everything mentioned by the subjects in the same form and sequence.

## 2.5. Subjects

There were 100 subjects (average age 39.4 years, in the range from 14 to 88) involved, 50 men and 50 women. All of them were native Estonian speakers; most were inhabitants of Tallinn or its suburbs. The proportion of men and women in different age groups is presented in Table 1. In this report the age and gender differences possibly reflected in the results are not considered. No observable deviance of mental health of the informants was detected. Informants seemed to be in their ordinary mood, as in most cases the inquiry took place in their own familiar? environment (schools, working places, homes, a club for retired people). Though some of the respondents had difficulties with some parts of the list task series, nobody failed totally and all 100 interviews were counted valid.

**Table 1. The distribution of respondents across age groups**

Age group	men	women
14–24	13	14
25–39	18	13
40–59	12	11
60–	7	12
Total	50	50

As the first goal of the empirical study – collecting easily memorable and usable emotion terms as part of emotional vocabulary that is in “active use” – was completed with creating a database, the next step was to analyse the data in order to make a distinction between basic and non-basic emotion terms. There are many criteria a word should meet to qualify for the category of basic vocabulary (Sutrop 2000, 2002).

## 2.6. Cognitive salience and basic terms

The basic parameter used in this study is called *cognitive salience* of a word or concept. If a unit has a relatively high cognitive salience, it has a tendency to be mentioned in first positions and most frequently in tasks of free listing. The field method of Urmas Sutrop provides several ways for calculating cognitive salience indices (S) in order to make relative cognitive salience as a parameter exactly measurable and comparable across different list tasks (Sutrop 2001). The important initial data are: the frequency (F) of an item throughout all data of a given list task, the number of subjects (N) participating in the list task (usually 30–50 is recommended) and the mean position of an item (mP), which takes into account the varying ranks of an item across individual lists. The cognitive salience index is calculated by the following formula:

$$S = F / (N \cdot mP)$$

How to calculate the mean position of an item has been the most problematic and changeable aspect of the cognitive salience indices. The cognitive salience index used in this survey has been proposed by Sutrop (2001) stating that the mean position of an item is a quotient of the sum of all individual ranks ( $\sum R_j$ ) and the frequency of an item in a given list task (F).

$$mP = (\sum R_j) / F$$

The procedure ranks the results of a given list task by the value of their relative cognitive salience indices in descending order. The distinction between the basic and non-basic units appears as an observable difference in their values. As the basicness of a word is a psycholinguistic parameter (Sutrop 2000) there are some other important characteristics besides the relatively high cognitive salience that have to be considered. Notably, a basic term should be:

- monolexemic (not analysable into identifiable lexical parts);
- morphologically simple (not a derivative);
- a native word;
- refer to an easily identifiable basic level object, quality or phenomenon;
- applicable in all relevant domains.

In this study cognitive salience is treated as a primary characteristic feature of basicness, while the linguistic criteria are treated as subsidiary.

The cognitive salience indices were calculated for all most frequent ( $F \geq 3$ ) items appearing in all tasks of free listing used in the inquiry. The task of naming antonyms (B) was exceptional, because the results of the first free listing task (A) were used as stimuli and so the sequence of items in task B was not free. Among the results of the antonym-naming test the frequency of antonyms and the strongest relationships were examined.

### 3. The results

#### 3.1. Listing the members of the category “emotions/feelings”

A hundred subjects named 844 words, so the average length of an individual list was 8.44 items. The actual length varied from 2–23. During the task 390 different word forms were mentioned, 58 of which were named by three individuals at least ( $F \geq 3$ ). For those 58 words the cognitive salience indices were calculated.

As the instruction encouraged people to mention everything that came to mind in association with the label “emotions/feelings” in addition to proper emotion terms, also words designating several emotion-associated phenomena (behavioural expressions, sensations, personality traits, activation level, etc) were elicited. These expressions were counted as meaningful for the Estonian layperson’s model of emotion in the case of a frequency rate  $F \geq 3$ .

### 3.1.1. Cognitive saliency of emotion terms

The average value of the indices was 0.018. The 13 most salient items had values equal or above the average, while 45 items scored less than the average. Table 2a presents the 13 most salient items in the results of the first list task, ordered according to their cognitive saliency indices (S). Also the overall frequency rate (F) and mean position (mP) are presented in the table. Four of the most salient items (*viha* ‘anger’, *armastus* ‘love’, *rõõm* ‘joy’ and *kurbus* ‘sadness’) are treated as Estonian basic emotion terms, due to their relatively higher index values ( $S \geq 0.1$ ) and are highlighted in Table 2b. There is, however, a remarkable difference in the cognitive saliency among the basic terms themselves, too: *viha* ‘anger’ and *armastus* ‘love’ are far more salient ( $S \geq 0.145$ ) than the other two: *kurbus* ‘sadness’ and *rõõm* ‘joy’ ( $0.108 \leq S < 0.1$ ). The tendency of basic emotion terms to occur as pairs is very clear. People tend to remember and mention emotion terms by their relation of antonymity. The most salient pair of lexemes to be co-elicited was *viha* >< *armastus* ‘anger >< love’ and the runner-up was *kurbus* >< *rõõm* ‘sadness >< joy’.

Table 2. Results of list task A

Words:	F	mP	S	P	Y
<i>viha</i> ‘ <b>anger</b> ’	56	3.61	0.155	1	95%
<i>armastus</i> ‘ <b>love</b> ’	43	2.95	0.145	23	72%
<i>kurbus</i> ‘ <b>sadness</b> ’	40	3.70	0.108	6	86%
<i>rõõm</i> ‘ <b>joy</b> ’	43	4.12	0.104	2	93%
<i>naer</i> ‘laughter’	25	5.80	0.043		
<i>raev</i> ‘rage’	14	4.07	0.034		
<i>nutt</i> ‘weeping’	19	5.74	0.033		
<i>rõõmus</i> ‘joyful’	6	2.17	0.028		
<i>nutmine</i> ‘weeping’	5	2.00	0.025		
<i>tunded</i> ‘feelings’	3	1.33	0.022		
<i>kurb</i> ‘sad’	6	2.67	0.022		
<i>vihkamine</i> ‘hatred’	8	4.00	0.02		
<i>hirm</i> ‘fear’	10	5.50	0.018	8	85%

### 3.1.2. Linguistic criteria of basic emotion terms

Most emotion terms were monolexic. There were but a few exceptions in the group of third most salient terms (*rahul+olu* ‘contentment, literally: [at-peace]+being’, *üks+kõik-sus* ‘indifference, literally: [one+all]-ness’, *kaas+tunne* ‘sympathy, literally: with+feeling’, *rõõmsa+meelsus* ‘joviality, literally: joyful+ mindedness’, *armu+kade-dus* ‘jealousy, literally: [love+envious]-ness’, *rahul+ olematus* ‘discontentment, literally: [at-peace+not-being]-ness’).

The criterion of being a morphologically simple native word functioning in all relevant domains was met by *viha* ‘anger’ and *rõõm* ‘joy’ (the group of cognitively most salient terms), *naer* ‘laughter’, *raev* ‘rage’, *nutt* ‘weeping’, *kurb* ‘sad’, *hirm* ‘fear’ (the group of second most salient terms), a number of least salient emotion

terms (*valu* ‘pain’, *mure* ‘worry’, *õnn* ‘happiness’, *kirg* ‘passion’, *rahu* ‘peace’) and a few non-emotion terms (*päike* ‘sun’, *külm* ‘cold’, *soe* ‘warm’, *uni* ‘sleep’).

Two of the basic emotion terms are morphologically complex. These are the derivatives: *kurb-us*<sup>3</sup> (noun) ‘sadness’ < *kurb* (adjective) ‘sad’ and *armast-us* (noun) ‘love’ < *armasta/ma* (verb) ‘to love’, while the latter is in turn the result of a three-step derivative process: *armasta/ma* (verb) ‘to love’ < *armas* (adjective) ‘darling, lovely’ < *arm* (noun) ‘mercy; love’. The morphological complexity of the word *armastus* is really high. The words occurring in the group of less salient emotion terms (Table 3) are also mostly morphologically complex as the names for more specific emotional states, feelings, personality traits and behavioural expressions tend to be derived either from adjectives or from verbs.

**Table 3. Third most salient emotion terms with average values F=4.08. mP=6.33 and S=0.007 (grouped according to meaning)**

Emotional states/feelings	Feelings/personality traits	Behavioural expressions	Causes and attributes of emotions
<i>depressioon</i> ‘depression’	<i>agressiivsus</i> ‘aggressiveness’	<i>kallistamine</i> ‘hugging’	<i>külm</i> ‘cold’
<i>kaastunne</i> ‘sympathy’	<i>armukadedus</i> ‘jealousy’	<i>karjumine</i> ‘yelling’	<i>lilled</i> ‘flowers’
<i>kirg</i> ‘passion’	<i>headus</i> ‘goodness’	<i>naermine</i> ‘laughing’	<i>nali</i> ‘joke’
<i>meeldimine</i> ‘pleasing’	<i>hellus</i> ‘tenderness’	<i>pisarad</i> ‘tears’	<i>perekond</i> ‘family’
<i>melanhoolia</i> ‘melancholy’	<i>igavus</i> ‘dullness’		<i>päike</i> ‘sun’
<i>mure</i> ‘worry’	<i>kadedus</i> ‘envy’		<i>rahu</i> ‘peace’
<i>nördimus</i> ‘indignation’	<i>nukrus</i> ‘wistfulness’		<i>soe</i> ‘warm’
<i>rahulolematus</i> ‘discontentment’	<i>närvilisus</i> ‘nervousness’		<i>sõbrad</i> ‘friends’
<i>rahulolu</i> ‘contentment’	<i>rahulik</i> ‘calm’		<i>uni</i> ‘sleep’
<i>segadus</i> ‘confusion’	<i>rõõmsameelsus</i> ‘joviality’		<i>valu</i> ‘pain’
<i>sõprus</i> ‘friendship’	<i>tigedus</i> ‘nastiness’		
<i>õnn</i> ‘happiness’,	<i>vaenulikkus</i> ‘hostility’		
<i>ängistus</i> ‘anguish’	<i>õnnelik</i> ‘happy’		
<i>ärevus</i> ‘anxiety’	<i>õrnus</i> ‘tenderness’		
<i>ärritus</i> ‘irritation’			
<i>üksindus</i> ‘loneliness’			
<i>ükskõiksus</i> ‘indifference’			

Only non-native emotion words mostly functioning in the specific context of psychological terms occurred in the least salient group (*melanhoolia* ‘melancholy’, *depressioon* ‘depression’, *agressiivsus* ‘aggressiveness’).

### 3.1.3. Ontological criterion

One of the criteria of lexical basicness is ontological – a basic term should refer to a basic level object or phenomenon (Sutrop 2000). There are also some emotions called “basic” in psychological literature (Ekman 1982, Ekman 1992). Notably, anger,

<sup>3</sup> -us is a very productive suffix systematically used to derive abstract substantives either from adjectives or from verbs (EKG 483–480).

joy, fear, sadness, disgust and surprise are claimed to be universal across cultures, due to their easily recognisable facial expressions.

Three of the four Estonian basic emotion terms refer to the so-called “basic emotions”: *viha* ‘anger’, *kurbus* ‘sadness’, *rõõm* ‘joy’, while one (*armastus* ‘love’) refers to a feeling, having no conventional facial expression. Consequently, only part of what have been called “basic emotions” in the psychological sense belongs to the basic level emotional knowledge for Estonians: no fear, disgust or surprise seem to appear in their basic level knowledge of emotions.

Most of the words falling into the second group of cognitive salience ( $0.043 \geq S \leq 0.018$ ) refer to manifestations of the same basic emotions, but in a linguistically different form: the adjectives *rõõmus* ‘joyful’ and *kurb* ‘sad’ present *rõõm* ‘joy’ and *kurbus* ‘sadness’ as attributes of states or persons. There are also words referring to the typical behavioural expressions of the same emotions (*naer* ‘laughter’ is a typical expression of *rõõm* ‘joy’; *nutt* ‘weeping’ and *nutmine* ‘weeping’ refer to *kurbus* ‘sadness’; *raev* ‘rage’ can be interpreted as very intense expression of *viha* ‘anger’). The derived term *vihkamine* ‘hatred’ presents *viha* as an active interpersonal feeling<sup>4</sup>. There are only two qualitatively different concepts in the group of second most salient terms: *tunded* ‘feelings’, which is a plural form of layperson’s category label *tunne* for the whole category, and *hirm* ‘fear’, which is one of the so-called basic emotions.

The basic emotion concepts tend to occupy a significant part of the layperson’s actively used emotion knowledge. Linguistic tools (part of speech, derivation) are extensively used by speakers to add social and interpersonal nuances to the underlying basic emotion concepts.

In the third group of expressions with rather low cognitive salience (the mean  $S=0.007$ ) there is a list of 45 elicited names for emotional states and feelings (Table 3). On the basis of their semantic content some groups can be distinguished: terms referring to emotions and feelings of a non-basic status (1st column in Table 3), words functioning as both names of feelings and names of personality traits (2nd column in Table 3), words designating conventional behavioural expressions of emotions (3rd column in Table 3), and words referring to conventional causes and attributes of emotions (4th column in Table 3). These semantic groups refer to the classes of phenomena with which emotions are associated in the Estonian folk model of emotion.

#### 3.1.4. Reducing lexical data back to concepts

For the most salient emotion concepts there was a tendency to be elicited in several semantically related units varying but a little lexically or morphologically (for example, the concept KURBUS ‘SADNESS’ was most frequently referred to as *kurbus* ‘sadness’, but also as *kurb* ‘sad’ (adj), *kurvastav* ‘saddening’ (adj/v) and as *kurvastamine* ‘saddening’ (n). Thus, an emotion concept might occur as linked not to one rigid emotion term, but to a “family of terms”. This kind of lexical variation was reduced in the results of the list task in order to calculate cognitive salience

<sup>4</sup> *-mine* is a very productive suffix systematically used to derive names of processes, actions and states (EKG 477-479).



indices also for emotion concepts: the items related both lexically and semantically were replaced by the “head of the family” – the most frequent item, for example *kurbus* ‘sadness’, was taken as head for *kurb*, *kurvastamine* and *kurvastav*, and the frequency rates of variants were added to the frequency rate of the head. The items closely related semantically (almost synonyms), but lexically different (e.g. *kurbus* ‘sadness’ and *nukrus* ‘sadness, wistfulness’) were treated separately.

Figure 1 presents the cognitive salience indices for 13 most salient concepts. The basic level concepts are the same (VIHA ‘ANGER’, ARMASTUS ‘LOVE’, RÕÕM ‘JOY’, KURBUS ‘SADNESS’) as the basic emotion terms referred to (Table 2). There is a difference in the salience of basic level concepts: VIHA ‘ANGER’ is far more salient ( $S = 0.179$ ) than the other three (the mean  $S = 0.135$ ).

On the conceptual level VIHA ‘ANGER’ appears to be the most salient and prototypical member of the emotion category for Estonians. Cognitive salience at a conceptual level does not show clear pairs as was characteristic of the lexical level. Instead, it shows the outstanding role of the concept VIHA ‘ANGER’ that tends to appear in relatively high positions of individual lists (mean position 3.68) not depending on its lexical manifestations.

Reducing the data back to emotion concepts indicates (Figure 2) that all basic emotion concepts are cognitively more salient than the corresponding lexical items (basic terms), except the concept of ARMASTUS ‘LOVE’. Though the frequency of concept ( $F = 50$ ) was higher than of term ( $F = 43$ ), the mean position of mentioning secondary labels for ARMASTUS ‘LOVE’ appeared to be low ( $mP = 9.4$ ). The concept ARMASTUS ‘LOVE’ is cognitively highly salient only in a rather fixed lexical manifestation – in the word *armastus*.

There were 99 subjects<sup>5</sup> participating in this task, the total number of stimulus words was 844 (the results of the first list task), the total number of antonyms offered was 724. 86% of the emotion terms mentioned in the first list were found to have an antonym by the subjects.

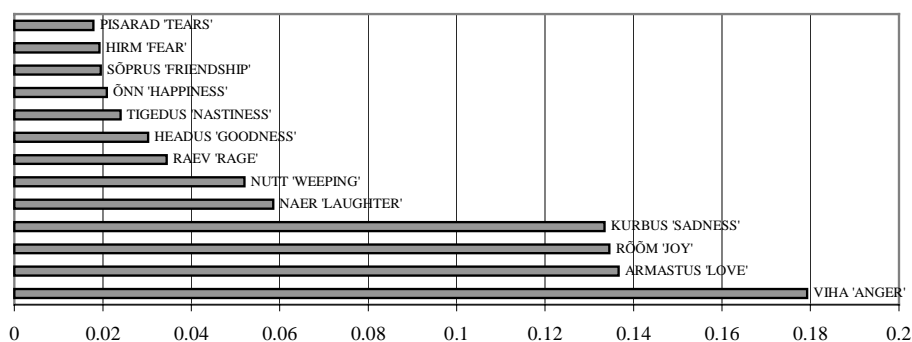


Fig. 1. Cognitive salience indices of conceptual items in task A

<sup>5</sup> One of the 100 subjects participating in task A refused the antonym naming task (B).

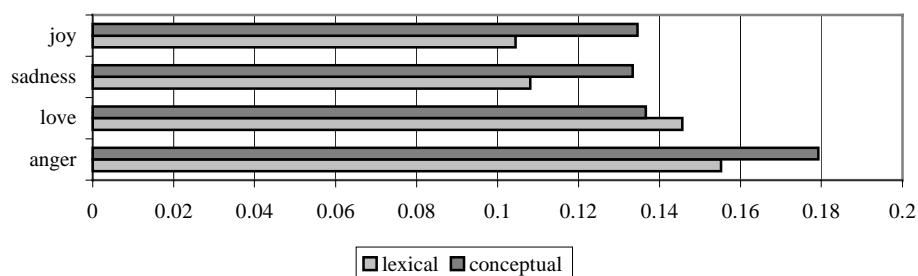


Fig. 2. Cognitive salience indices of basic emotions at lexical and conceptual levels.

### 3.2. Naming antonyms

The pairs of antonyms showed up big differences in frequency: 64% of all pairs were mentioned only once. The frequency rates for 44 recurring pairs varied from 34 to 2. The frequency of each pair was compared to that of the most frequent pair *rõõm* >< *kurbus* 'joy >< sadness' ( $F = 34$ ) and the relative strengths of antonymic relations were calculated. The data of the most frequent antonyms is presented in Table 4 and the interrelations of lexical items are presented in Figure 3. Bold arrows indicate a relatively higher strength of a relation ( $rS \geq 0.50$ ), while the dashed arrows indicate asymmetrical relations.

The strongest antonymic relations appear between two basic emotion terms (*rõõm* >< *kurbus* 'joy >< sadness', *kurbus* >< *rõõm* 'sadness >< joy'). The antonymity of those words is symmetrical. The second strongest antonymic relation is seen between the words designating acts of behavioural expressions of emotions (*naer* >< *nutt* 'laughter >< weeping', *nutt* >< *naer* 'weeping >< laughter'). The antonymity of those words is also symmetrical. There is a rather strong asymmetrical relation ( $rS = 0.53$ ) between a basic emotion term (*armastus* 'love') and a non-basic emotion term (*vihkamine* 'hatred'). The most salient emotion term *viha* 'anger' has two equally strong antonyms: *armastus* 'love' and *rõõm* 'joy'. The relation to *armastus* 'love' is symmetrical; the relation to *rõõm* 'joy' is asymmetrical.

Table 4. The most frequent pairs of antonymous words and concepts in task B

a) antonyms				b) pairs of contrasting concepts			
stimulus word	antonym	F	rS	stimulus concept	contrasting concept	F	rS
<i>rõõm</i> 'joy'	<i>kurbus</i> 'sadness'	34	1	RÕÕM 'joy'	KURBUS 'sadness'	43	1
<i>kurbus</i> 'sadness'	<i>rõõm</i> 'joy'	31	0.91	KURBUS 'sadness'	RÕÕM 'joy'	41	0.95
<i>naer</i> 'laughter'	<i>nutt</i> 'weeping'	22	0.65	ARMASTUS 'love'	VIHA 'anger'	28	0.65
<i>nutt</i> 'weeping'	<i>naer</i> 'laughter'	19	0.56	NAER 'laughter'	NUTT 'weeping'	27	0.63
<i>armastus</i> 'love'	<i>vihkamine</i> 'hatred'	18	0.53	NUTT 'weeping'	NAER 'laughter'	24	0.56
<i>viha</i> 'anger'	<i>armastus</i> 'love'	11	0.32	VIHA 'anger'	ARMASTUS 'love'	15	0.35
<i>viha</i> 'anger'	<i>rõõm</i> 'joy'	11	0.32	VIHA 'anger'	RÕÕM 'joy'	12	0.28
<i>armastus</i> 'love'	<i>viha</i> 'anger'	8	0.24				

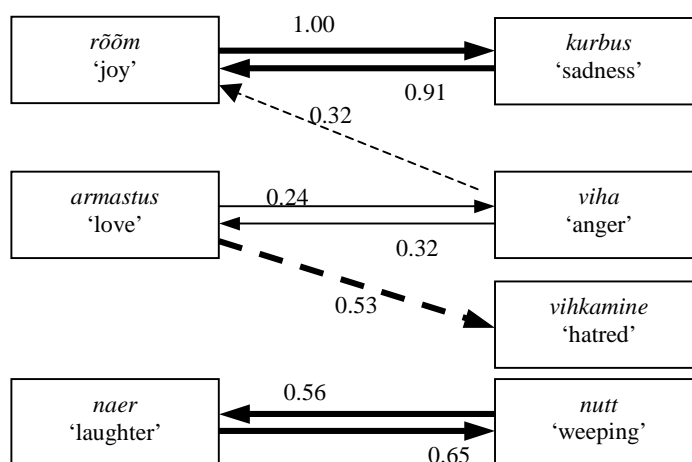


Fig. 3. System of lexical antonyms in the Estonian emotion vocabulary.

The emotion term *viha* 'anger' is apparently polysemous, having the meanings of a passively experienced intrapersonal state (this meaning is opposed to the emotion term *rõõm* 'joy', which is also an act of experiencing an intrapersonal state) of an active interpersonal feeling (that is opposed to the emotion term *armastus* 'love' as also an interpersonal feeling). In the latter sense *viha* 'anger' is synonymous to *vihkamine* 'hatred'.

The cutting back on the lexical variants (by the above procedure) increased the frequency rates proportionally (Table 3 b)), except for the relation ARMASTUS > < VIHA 'LOVE' > < ANGER', for which the frequency and relational strength increased remarkably. The system of contrasting emotion concepts is presented in Figure 4. There is only one asymmetrical relation on the conceptual level between VIHA 'ANGER' and RÕÕM 'JOY'.

The basic emotion terms as well as concepts tend to form a connected system. This is due to the fact that the most salient basic concept VIHA 'ANGER' tends to have two contrasting basic concepts to it (RÕÕM 'JOY' and ARMASTUS 'LOVE'). Evidently the contrasting concepts and antonyms are opposed to two different aspects of the concept VIHA 'ANGER' – the intra- and interpersonal one. On the lexical level there are also two emotion terms (*viha* 'anger', *vihkamine* 'hatred') to designate these two different semantic aspects. The lexical unit *viha* 'anger' is more general and polysemous taking two antonyms, while *vihkamine* 'hatred' is more specific and occurs only in an interpersonal meaning, i.e. as an antonym for the stimulus word *armastus* 'love'.

The terms and concepts referring to behavioural expressions (NAER 'LAUGHTER', NUTT 'WEEPING') stand apart and are not connected to other terms through antonymic relations. One should not forget that these terms are connected by association as they refer to prototypical behavioural expressions of basic emotions (*naer* 'laughter' is associated to *rõõm* 'joy' and *nutt* 'weeping' to *kurbus* 'sadness', respectively).

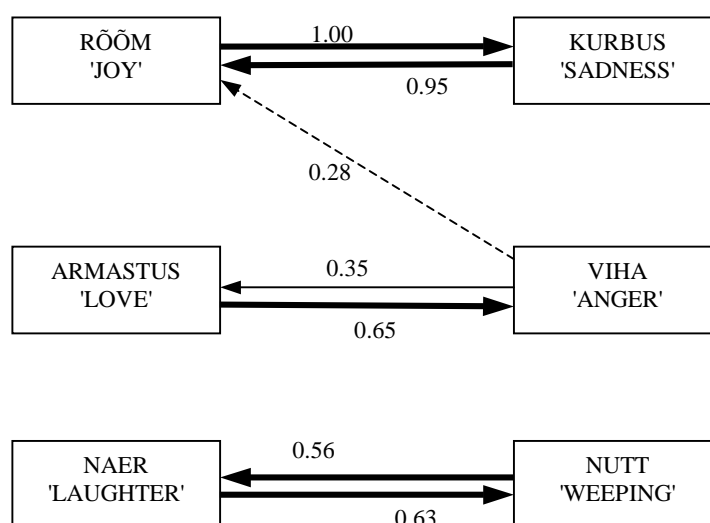


Fig. 4. System of contrasting concepts.

### 3.3. Listing the subcategories of positive, negative and neutral emotions

There were 99 subjects<sup>6</sup> participating in this task. The total number of words mentioned was 1076, which was the highest rate in the series of list tasks. The distribution of items mentioned as positive, negative or neutral is presented in Table 5. It was rather easy for the informants to divide their emotional experience into positive and negative. Finding something neutral about emotions was more difficult.

For the most frequent items ( $F \geq 3$ ) in each category the indices of cognitive salience were calculated in order to examine their prototypicality and subcategory membership. Table 6 presents the results with values above the average in each category. Both lexical and conceptual items are presented.

**Table 5. Distribution of the results of the differentiated list task (G)**

	Number of all items mentioned	Number of different items	Number of items $F \geq 3$
Positive	497	292	29
Negative	448	246	29
Neutral	132	103	9

<sup>6</sup> Every person was first asked if he or she agrees with the division of emotions into three subcategories. Only one of 100 informants did not agree.

**Table 6. Results of the differentiated list task**

Emotions	Lexical items	S	CONCEPTUAL ITEMS	S
<b>Positive</b>	<i>rõõm</i> 'joy'	0.22	RÕÕM 'JOY'	0.29
	<i>armastus</i> 'love'	0.16	ARMASTUS 'LOVE'	0.16
	<i>rahulolu</i> 'contentment'	0.04	NAERMINE 'LAUGHING'	0.09
	<i>naermine</i> 'laughing'	0.04	ÕNN 'HAPPINESS'	0.07
	<i>naer</i> 'laughter'	0.04	RAHULOLU 'CONTENTMENT'	0.07
	<i>õnnelik</i> 'happy'	0.03	SÕPRUS 'FRIENDSHIP'	0.04
<b>Negative</b>	<i>viha</i> 'anger'	0.21	VIHA 'ANGER'	0.28
	<i>kurbus</i> 'sadness'	0.08	KURBUS 'SADNESS'	0.11
	<i>vihkamine</i> 'hatred'	0.06	KADEDUS 'ENVY'	0.05
	<i>raev</i> 'rage'	0.04	NUTMINE 'WEEPING'	0.05
	<i>kadedus</i> 'envy'	0.04	RAEV 'RAGE'	0.04
	<i>valu</i> 'pain'	0.03	VALU 'PAIN'	0.03
	<i>nutmine</i> 'weeping'	0.03		
<b>Neutral</b>	<i>väsimus</i> 'fatigue'	0.03	VÄSIMUS 'FATIGUE'	0.03
	<i>kurbus</i> 'sadness'	0.02	RAHU 'PEACE'	0.03
	<i>rahu</i> 'peace'	0.02	ÜKSKÕIKSUS 'INDIFFERENCE'	0.03
	<i>igavus</i> 'dullness'	0.02	KURBUS 'SADNESS'	0.02
	<i>ükskõiksus</i> 'indifference'	0.02	IGAVUS 'DULLNESS'	0.02

In each category the basic emotion terms and basic level concepts tend to have remarkably higher values of indices than the rest. These appear to be the most salient and prototypical members of the subcategories of positive and negative emotions. The category of neutral emotions is exceptional: the rates of salience are far less below the rates of either positive or negative emotions.

The subcategory of neutral emotions appears artificial as it has no prototypical members: all items are on the same (rather low) level of cognitive salience. It is interesting that in the case of a missing prototype a subjectively experienced low energy level is common to the most salient concepts (VÄSIMUS, 'FATIGUE', RAHU 'PEACE' and ÜKSKÕIKSUS 'INDIFFERENCE') in this category.

Both negativeness and positiveness of the emotion terms are stronger on the conceptual than on the lexical level. A comparison of the cognitive salience of emotion concepts indicates that for more differentiated tasks the salience rates tend to be higher (Table 7). The basic concept KURBUS 'SADNESS' is exceptional in being less salient as a negative emotion than as simply an emotion. The appearance of KURBUS 'SADNESS' in the subcategory of neutral emotions as well indicates the same uncertainty of its negativeness, probably resulting from the subjectively experienced low energy level accompanying the emotional state of KURBUS 'SADNESS'.

**Table 7. The cognitive salience of basic emotion concepts in tasks A and G**

	Undifferentiated task (A)	Differentiated task (G)
VIHA 'ANGER'	0.179	0.281
ARMASTUS 'LOVE'	0.137	0.162
RÕÕM 'JOY'	0.134	0.292
KURBUS 'SADNESS'	0.134	0.110

Another remarkable increase is observed in the cognitive salience of the concept RÕÕM 'JOY' in differentiated tasks: this concept appears to be the most prototypical for positive emotions. A differentiated task raises also the salience of the concept VIHA 'ANGER'<sup>7</sup>, but it does not cause proportional rise in the salience of the concept ARMASTUS 'LOVE'

#### 4. Discussion

Presuming that the relative cognitive salience of words or concepts is a sufficient indicator of their prototypicality and category membership the relevant facets of an Estonian layperson's model of emotions can be pointed out and discussed.

At the core of a layperson's model there are very salient basic emotion concepts manifested by several lexical variants. The basic level emotion concepts in Estonian layperson's model are VIHA 'ANGER', ARMASTUS 'LOVE', RÕÕM 'JOY' and KURBUS 'SADNESS' that appeared to be relatively far more cognitively salient than other concepts. The most prototypical member of the emotion category is VIHA 'ANGER', while ARMASTUS 'LOVE' is an exceptional member<sup>8</sup>. The terms referring to basic emotion concepts matched well with the psychological criterion of basicness (a relatively high cognitive salience), but not as well with the linguistic and ontological criteria. Only two of the four (*viha* 'anger' and *rõõm* 'joy') met all the necessary criteria.

Due to the different objects and different methods used in previous investigations of the Estonian emotion vocabulary the results of the current study have not been systematically compared with those and are quite possibly not even comparable in all details. Some obvious similarities and discrepancies can be pointed out, though. Ly Kästik has also questioned Estonian informants about membership of the emotion category<sup>9</sup> (Kästik 2000). Similarly to the results of the present investigation the words referring to three of our basic level emotion concepts occurred at the top of the frequency list in her results: VIHA 'ANGER' got 95%, RÕÕM 'JOY' 93%, KURBUS 'SADNESS' 86% of "yes" answers. The concept ARMASTUS 'LOVE' took the 23rd position (72%) of 80. Table 2 b) presents the comparable part of Kästik's results (P = position, Y = percentage of agreement). These results are in accordance with the outstanding role of the concept VIHA 'anger' and the exceptional role of the concept ARMASTUS 'love' in the Estonian layperson's model.

In the study of Allik and Realo (1997), in addition to two general dimensions (Negative Affect and Positive Affect), seven relevant emotionally more specific

<sup>7</sup> Some people mentioned VIHA 'ANGER' as belonging to positive emotions, some as belonging to both positive and negative.

<sup>8</sup> Possibly the high salience of the word *armastus* 'love' can be explained by the fact that this concept is actually the most salient member of the closely related category of "feelings", which is not distinguished in the folk model.

<sup>9</sup> This was not a test of free listing, but one consisting of a closed range of emotion words with closed questions asked (e.g. *Is x an emotion?*).

factors were distinguished: Hostility, Sadness, Fatigue, Shyness, Joviality, Pertinacity and Affection (Allik & Realo 1997). Some of these statistical factors can be identified with the basic level emotion concepts of the layperson's model: Hostility can be identified with VIHA 'ANGER', Sadness with KURBUS 'SADNESS', Joviality with RÕÕM 'JOY' and Affection with ARMASTUS 'LOVE'. The concept of FATIGUE was not highly salient in the case of list tasks. Appearing in the periphery of the emotion category FATIGUE was rather related to emotional neutrality than to evaluative two-dimensionality accompanying the natural emotion category. The concepts of SHYNESS and PERTINACITY did not show up any cognitive or emotional salience in the present investigation and are counted as standing outside the Estonian layperson's model of emotion (Vainik 2002). Interestingly the role of the basic emotion Fear was under the expected level in the results of both inquires, regardless of the methods used (Allik & Realo 1997, Vainik 2002).

The similarity of the basic level emotion concepts belonging to the very core of a layperson's model can be treated as an indicator of universality of this kind of models across languages and cultures. Tests of free listing have demonstrated an amazing correspondence in the most frequently mentioned emotion terms in 11 languages. The cross-cultural basicness of joy, anger, fear, love and sadness has been explained by means of recurrent and important universal aspects of emotional events (appraisal dimensions, aspects of readiness for action and emotional event features) (Frijda, Markam, Sato and Wiers 1995). The leading position of anger in the free-listing task seems, however, to be something specific to the Estonian folk model<sup>10</sup>. Though anger is not the most easily recognisable emotion<sup>11</sup> (Nummert 2002) it still seems to be socially very important for Estonians. The social dimension also determines the scope of the concept VIHA 'ANGER' as an intra- or interpersonal emotion depending whether or not the emotional state is experienced as socially oriented.

In a layperson's model emotions are closely related to feelings, behavioural expressions, personality traits and conventional causes and attributes of emotions. It is only natural that a considerable number of words in the results of the first list task rather indicate feelings and certain more specific emotional states (Table 3 a)) than emotions, because the people were encouraged to mention everything that came to their mind in association with the double-labelled category "emotions/feelings".

The cognitive salience of words referring to behavioural expressions of basic emotions (*naer* 'laughter', *raev* 'rage' and *nutt* 'weeping') was apparent in the results of the first list task (Table 2 a)). A high salience of those words and concepts is indicative of the importance of social interaction and behaviour that Estonians tend to attach to emotions. Those words of conventional behavioural

<sup>10</sup> The top items of free listings of emotions in 11 countries have been *joy* (Belgium, France, Italy, Switzerland), *happy* (England, Canada), *fear* (the Netherlands), *sadness* (Japan, Indonesia, Surinam) and *love* (Turkey) (Frijda, Markam, Sato, & Wiers 1995:122).

<sup>11</sup> The percentages of recognising anger by its facial expression among Estonians have been 63 (Luik 1999) and 69 (Nummert 2002).

acts most evidently conceptualise the preconceptual ways of experiencing and expressing emotions, which still appear to function as relevant social signals. Also, the fact that emotional states and personality traits are so closely related in the collective emotion knowledge that they tend to be co-conceptualised and co-activated in the case of a list task is indicative of the importance of the social dimension (Table 3a and 3b). It has been pointed out that the interrelatedness of words designating personality traits and those designating emotions is a general tendency, because personality traits are formed in response to events evoking emotions (Plutchik 1980).

The Estonian layperson's model also includes some conventional causes and attributes of emotions (Table 3d)). Referring to emotion evoking things and situations is characteristic of collectivistic cultures, whereas referring to personality traits pertains to individualistic cultures (Smith 1995). As the Estonian folk model of emotions demonstrates both tendencies one may suspect a kind of uncertainty present in the Estonian cultural identity.

In Estonian there is a strong tendency for basic level emotion concepts/terms to be divided into two subcategories according to positive and negative emotions. The subcategory of neutral emotions does not belong to the basic level knowledge of emotions as the cognitive salience of words that referred to neutral phenomena was remarkably lower (Table 6). Emotional neutrality is associated with states of unemotionality due to a subjectively experienced low energy level. Therefore, some level of activation is needed for a state to be categorised and evaluated as an emotion in an Estonian layperson's model.

It is claimed that all variation of emotion vocabulary at the most general level of abstraction is due to two independent and unipolar dimensions of Positive and Negative Affect (Watson & Clark 1994; Allik 1997). Though the aims of two studies have been different, the results of the current study confirm that the statistical tendency is in accordance with the opinion of native Estonian speakers. This is proved by the results of our differentiated list task, where the informants demonstrated the highest verbal productivity in the case of both negative and positive subcategories, being, however, almost unable to mention any neutral emotions. To the split subcategories the informants also included some other phenomena expressing certain values associated with human interactions. The basic level feature of emotional knowledge (dividing experience into "good" and "bad") also tends to be characteristic of non-basic emotion concepts and of concepts of other associated fields (Vainik 2002). Probably the space determined by these two dimensions goes far beyond the borders of the emotion category in the collective consciousness.

Such splitting of emotional vocabulary is not specific to Estonians. An analysis of the emotional vocabulary of different languages and cultures has led some authors to the conclusion that dividing one's emotional experience into contrasting categories of "good" and "bad" is one of the semantic universals of conceptualising emotions across cultures and languages (Wierzbicka 2000). The question is if this ubiquitous lexical splitting relies on some aspects of objective reality (e.g. the



measurable processes of arousal and inhibition in human brain), some universal principles of cognitive processing (e.g. giving rise to contrasting categories and concepts first), on the preverbal (and probably preconceptual) kinesthetic image schemata of approach and retreat, on a reflection of one's emotional processing (subjectively experienced pleasantness/unpleasantness of a situation), on an evolutionary mechanism of automatic appraisal (Lazarus 1991), or on a culturally determined evaluative oppositeness of acceptable and non-acceptable behaviour.

Most likely some of the above reasons coincide and that is why the good-bad opposition in emotion vocabularies is so pervasive and naturally belongs to the folk models of emotions.

To a certain extent, the oppositeness of emotion terms and concepts in an Estonian layperson's model is a matter of belief. The argument is supported by the fact that there was a rather high agreement rate (86%) with the idea that for every emotion term there must exist an antonym in the case of task B. For most of the emotion terms mentioned (64%) there was no agreement, though, about their lexically specific antonyms. The relation of oppositeness is believed to be between the subcategories of positive and negative emotions. Nevertheless, the real antonymity of the two most prototypical positive and negative emotion concepts was not the strongest. According to the results of task B there is a rather weak (0.28) asymmetrical antonymic relation between the intrapersonal aspect of the concept VIHA 'ANGER' and the most prototypical positive emotion concept RÕÕM 'JOY'.

The results of the second list task (B) indicate that there occur but a few truly antonymic relations in the Estonian emotion vocabulary. These are more evident (as the frequency rates are higher) on the conceptual than on the lexical level. Strong symmetrical antonymic relations occur between the basic level emotion concepts RÕÕM > < KURBUS 'JOY > < SADNESS' and ARMASTUS > < VIHA 'LOVE > < ANGER'. Oppositeness appears as a characteristic feature for basic-level knowledge of emotions. The basic level feature is prototypical, though, for the whole popular emotion category (Vainik 2002), as we can follow the belief in the oppositeness of emotion terms also on non-basic levels (e.g. the second strong antonymic relation holds between NAER > < NUTT 'LAUGHTER > < WEeping').

In the results of factor analysis of self-ratings there is typically a relatively low correlation between GPA (General Positive Affect) and GNA (General Negative Affect),  $r = -.18$ ,  $p = .001$  (Allik & Realo 1997:634), which allows to argue that the negativeness and positiveness of emotion terms is due to their describing different processes that lie on different substrates and should therefore not be regarded as opposites. Though Negative and Positive Affect may be unipolar dimensions in self-ratings, the results of the present investigation confirmed that on the lexical and conceptual level people tend to consider the most contrasting basic level emotions as opposites. A layperson's thinking of "good" and "bad" as opposites may be conceptual, not necessarily experiential.

Emotions seem to be organised differently: on experiential level the positive and negative emotions can be self-reported and mentally operated while not

mutually excluding one another, whereas on the conceptual level that is influenced by forms of social cognition (like folk models) the positive and negative emotion concepts are treated as opposites and related to each other through the relations of antonymity on the lexical level.

A layperson's model of emotion is a kind of generalisation. I do not think that there is a ready-made conscious model in any layperson's head, but there is an ability to conceptualise the domain of emotional experience using one's individual skills and culturally determined social standards. There is an overlap of individual knowledge, experiences and attitudes towards emotions, which can be called a layperson's model.

As a result of a lexical free listing task, only part of the whole Estonian emotion vocabulary was elicited, and the emotion terms certainly do not contain everything that the Estonian language reveals about emotions (e. g. figurative language and the grammar of emotional expressions are very interesting topics for further investigations). Thus, the characteristic facets of Estonian folk model presented in this report hold only for this part of the model constituting of emotion terms and collectively emotion-associated words.

Emotional experience is highly varying and the lexical labels are highly varying, too. Emotion concepts present the invariants of emotional experience in a given culture. The system of interrelated basic level emotion concepts represents the basic level knowledge of emotions and forms an important part of a layperson's model of emotions. The emotion vocabulary of a given language is influenced by linguistic, psychological and cultural factors and meets the needs of the linguistic community.

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