

Bilingual analysis of LOVE and HATRED emotional markers (SPSS-based approach)

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Abstract

This paper presents the results of GRID project which aimed at studying the semantics of 24 emotion terms in 23 languages belonging to 8 language families (Indo-European, Indo-Iranian, Afro-Asiatic, Altaic, Uralic, Japonic, Sino-Tibetan, Niger-Congo, and Unclassified). We limit ourselves in this article only to two Slavic languages – Slovak and Czech and to two emotion terms – love and hatred – and try show how greatly information technologies helped the psychologists first of all to obtain, and then to process large volume of information from a bit less than 5000 people, active project participants, who live in 30 countries.

1 Credits

Though two languages are discussed in the paper, it is written by teachers of Faculty of Mass Media Communication, University of SS Cyril and Methodius in Trnava, Slovakia: by prof. Nataliya Panasenکو, assoc. prof. Slavomír Magál, Dr. Dana Petranová and Dr. Andrej Trnka.

2 Introduction

Feelings and emotions are important components of human cognitive activity, behaviour, communication with the world and other people. Human emotional sphere has been thoroughly analyzed by psychologists, philosophers, and linguists.

Outstanding scholars from different countries (Cornelius, 1996; Ellsworth and Nesse, 2009; Fontaine, Scherer et al. 2007; Frijda, 1986; Лык, 1972 and many others) have made a considerable contribution to creation theoretical and methodological basics of feelings and emotions study. Scholars have described the essence of emotions (Nakonečný, 2000; Scherer, 2005; Stuchlíková, 2007), have made their classification (Ahem and Schwarz, 1979; Додонов, 1975), have described some of them in details (Panasenکو, 2012; Сабаш, 2008), have studied them from cognitive (Byessonova, 2009; Ortoni, Clore and Collins, 1988) and cultural aspect (Fontaine, 2008; Kitayama, Markus et al., 1995; Ogarkova, Panasenکو et al., 2013; Panasenکو, Démuthová et al., 2012; Russel, 1991), specified their attitudinal character (Ewert, 1970), role and function of emotions in social life (Slaměník, 2005), means of their expression and perception (Рождкова, 1974), peculiarities of emotional sphere of people belonging to different professions (teachers, musicians, actors, doctors, TV announcers (Ильин, 2001).

In this article we want to show, what ways of emotion investigation have been recently employed by psychologists and what features describing emotions are important most of all for Slovaks and Czechs. Psychologists take into account different features accompanying emotions, such as *features describing the person's evalua-*

tion or appraisal of the event, features describing the bodily symptoms that tend to occur during the emotional state (felt shivers in the neck or chest, got pale, felt his/her heartbeat slowing down, felt his/her heartbeat getting faster, felt his/her breathing getting faster, perspired, or had moist hands); features describing facial and vocal expressions, that accompany the emotion (blushed, smiled, felt his/her jaw drop, pressed his/her lips together, felt his/her eyebrows go up, frowned, closed his/her eyes, had tears in his/her eyes; changes in the loudness of voice, of speech melody, speech tempo, speech disturbances, etc.). All these symptoms are included into GRID project, results of which we present in our paper.

3 GRID project

The International GRID Research Consortium was founded in 2005 to organize a world-wide study of the semantics of emotion terms in different languages (French, Italian, Portuguese, Romansh, Spanish; Afrikaans, Dutch, English, German; Bulgarian, Czech, Polish, Russian, Slovak, Ukrainian; Greek; Hindi; Arabic, Hebrew; Turkish; Estonian, Finnish, Hungarian; Japanese; Chinese, Burmese; Sepedi and Basque) using a componential approach. Project brings together researchers from different countries and disciplines who have a major interest in language and emotion. GRID project was supported by the Swiss National Center of Competence in Research on Affective Sciences (SCAS), University of Geneva (Switzerland) and University of Ghent (Belgium). Here and further on the description of the project was borrowed from the participants' guidelines and from the collective monograph, which reflects results of GRID project (Components of emotional meaning. A sourcebook, 2013).

In the study native speakers judged the meaning of emotion terms in their languages, evaluating them on dimensions reflecting different components of emotional experience (Fontaine, Scherer, et al. 2007). The GRID consortium was coordinated by Klaus R. Scherer (Switzerland), Johnny R. J. Fontaine (Belgium) and Phoebe C. Ellsworth (USA).

3.1 Data mining

Before we present results of the experimental research we want to describe stages of GRID project, which we will name further on as GRID.

First of all, 24 emotion terms (such as sadness, shame, guilt, compassion, love, contentment, happiness, pride, etc.), as well as the tasks to fulfill which were originally in English, were translated by the coordinators into their native languages, which we have already mentioned.

Participants of the project were asked to respond to a web questionnaire hosted on the SCAS website. In the web-based instrument each participant had to evaluate 4 out of 24 emotion words on a profile of 144 componential emotion features. The process of answering lasted from 40 minutes to about an hour. Each language had several data-gathering members (38 people) who followed the instructions provided by the senior coordinators.

The minimum necessary number of people under test in each language was 120. From the data reflected in the book based on the project results (Components of emotional meaning. A sourcebook, 2013) we see that the number of project participants varies from language to language. The largest number of people who have completed all the 17 categories of the questionnaire is 247 (Chinese, China, Beijing); large number – 220 (Spanish, Peru, Lima), 211 (Chinese, Taiwan, Chia-Yi). The smallest number of participants – 66 – was in Burmese (Burma, Myanmar) and in Hebrew – 81 – (Israel, Haifa).

We have 135 Slovak participants in the project and 125 Czech ones. Though there was no age limit, the average age of Slovak and Czech students is respectively 22.47 and 19.94. All the questions were grouped into several categories: categ. 1 **evaluation** (which included such items as features describing the person's evaluation or appraisal of the event – 31 items); categ. 2 **bodily symptoms** (features describing the bodily symptoms that tend to occur during the emotional state – 18); categ. 3 **expression** (features describing facial and vocal expressions and gestures, that accompany the emotion – 26); categ. 4 **action tendencies** (features describing tendencies to behave in certain ways that accompany the emotion – 40); categ. 5 **subjective feeling** (features describing the subjective experience that characterizes the emotion – 22); categ. 6 **regulation** (features describing ways in which the emotion can be regulated – 4); categ. 7 **general** (some general features of the emotion experienced – 3). These features are presented below in the tables, where they are abbreviated in such a way: categ2_i7 *felt her or his heartbeat getting faster*;

categ2_i16 *blushed*; categ3_i7 *opened her or his eyes widely*; categ5_i6 *felt at ease*. As we have mentioned above, total number of the features is 144.

Most of the participants (with the exception of people from Tunisia (Arabic, Tunis) and Peru (Spanish, Lima) and partially Ukraine (Russian, Kiev) answered questions on-line; each participant was given four different emotion terms chosen at random by the computer. For Slovak students it was naturally to be involved into the project on-line; they were called by Vrabc "generation on-line" (2010: 82). The questionnaire was anonymous, but it was necessary to mention age, sex, education, country of residence and spoken languages. It was necessary to answer all the questions of the programme, otherwise the data were not accepted. Later on all the data obtained were thoroughly processed by the latest version of SPSS Statistics ver. 21. This gave us the opportunity to capture the most important dimensions measured by GRID with a limited number of well-differentiating and cross-cultural stable features.

4 Love and hatred as emotive terms

As we have already mentioned above, there are many classifications of emotions and feelings and approaches to their study. The question arises how to process the information about them, because ways of processing of the received data are considered to be a prominent aspect of psychological research. For many decades scientists offered varied methods of diagnostics of emotional states, verbal and nonverbal ways of feelings and emotions expression. Procedures which with each coil of progress in science become more and more complicated and accomplished result from the theoretical sources offered by scholars, as well as technical possibilities in a society on the given stage of progress.

The question is how after all the person expresses one's feelings and if there are differences in various cultures on adequate perception and interpretation of emotions. As Russell claims (1991), people belonging to different cultures, are capable to perceive and estimate correctly expressions of a human face, to define on it such emotional states, as pleasure, anger, grief, fear, disgust, and surprise. On the other side there are culture specific differences in expressing human emotions and feelings.

The analysis of studies performed by psychologists and linguists, gives us an opportunity to assume, that there are universal and specific ways of emotions and feelings expression. We may speak about linguistic and extralinguistic ways (Панасенко, 2009). GRID questionnaire mainly includes extralinguistic ways, such as gesticulation, facial expression, bodily movements and some others. Linguistic ways of emotions manifestation are presented by intonational ones (categ3 "*Expression*" – features describing facial and vocal expressions and gestures that accompany the emotion: spoke louder/ softer/ faster/ slower, had a trembling/ assertive voice, changed the melody of his/her speech, etc.).

Speaking about love and hatred as basic human feelings, we would like to state, that they have been investigated either by linguists or psychologists (Ильин, 2001; Fredrickson, 2001; Norman, 2005; Panasenko, 2012; Panasenko et al., 2012; Степанов, 1997; Tissari, 2003; Воркачев, 1995), but the studies were conducted mainly on a very small number of languages. We would like to mention the Edinburgh Associative Thesaurus (EAT), which is a set of word association norms showing the counts of word association as collected from subjects. According to it, love stimulated the following associations. Number of different answers is 49. Total count of all answers is 97. Here is the beginning of the list:

- HATE 32 0.33
 - SEX 9 0.09
 - GIRL 5 0.05
 - LIFE 3 0.03
 - MARRIAGE 3 0.03
 - WAR 2 0.02
 - AFFECTION 1 0.01
- (Edinburgh Associative Thesaurus).

The list of associations shows, that top one in the list is hatred. It is a very interesting research based on English. GRID is based on a large number of languages. Its results allow us to see different ways of emotions manifestation in different cultures. Below we present results of comparative analysis of emotional markers of LOVE in Slovak and Czech.

4.1 Emotional markers of LOVE (Slovak data)

17 Slovak participants referred to these emotion terms which were described by 144 variables affording nine-point response scale for evaluation of each variable. Descriptive analysis of mean values of all variables showed, that Slo-

vaks consider the terms "love, attachment" to be perceived by members of their culture mainly through positive characteristics, like something nice and pleasant (see table 1).

number of category	description	mean
categ5_i1	was in an intense emotional state	8,55
categ3_i1	smiled	8,50
categ4_i35	wanted to be tender, sweet, and kind	8,45
categ5_i3	felt good	8,36
categ5_i2	experienced the emotional state for a long time	8,32
categ2_i12	felt warm (whole body)	8,32
categ2_i7	felt his/her heartbeat getting faster	8,27
categ2_i16	blushed	8,27
categ5_i9	felt energetic	8,18
categ4_i39	wanted to sing and dance	8,14

Table 1. List of top ten characteristics which were stated by Slovak participants as extremely common for *love markers*

Some characteristic of love markers were stated more common than the others (see table 2) (after Panasenکو, Démuthová et al., 2012: 262).

category	number of feature	description	mean
features describing the person's evaluation or appraisal of the event, conscious or not	categ1_i6	that was in itself pleasant for the person (independently of its possible consequences)	7,23
	categ1_i18	of which the consequences were likely to be positive, desirable for the person him/herself	7,23
features describing the bodily symptoms that tend to occur during the emotional state	categ2_i12	felt warm (whole body)	8,32
	categ2_i7	felt his/her heartbeat getting faster	8,27
features describing facial and vocal expressions and gestures, that accompany the emotion.	categ3_i1	smiled	8,50
	categ3_i22	changed the melody of his/her speech	7,14
features describing tendencies to behave in certain ways that accompany the emotion	categ4_i35	wanted to be tender, sweet, and kind	8,45
	categ4_i39	wanted to sing and dance	8,14
features describing the subjective experience that characterizes the emotion	categ5_i1	was in an intense emotional state	8,55
	categ5_i3	felt good	8,36
features describing ways in which the emotion can be regulated	categ6_i2	showed a stronger degree of emotion than he/she actually felt	7,18
	categ6_i3	showed a weaker degree of emotion than he/she actually felt	5,41
some general features of the emotion experienced	categ7_i2	How frequently is this state generally experienced in your society	7,00
	categ7_i3	To what extent is it socially accepted to experience this emotional state in your society	7,36

Table 2. Example of the first two the most common features in each category of *love markers* in Slovak sample

People under test were of different sex. Though the number of males and females was not equal, it is possible to find out how love is being described and evaluated by men and women. Table 3 presents very interesting results

of gender aspect of love evaluation and display (after Panasenکو, Démuthová et al., 2012: 264).

number of category	description	mean male	mean female	sig.
categ1_i3	that was essentially unpredictable	8,00	5,76	0,025
categ1_i21	of which the consequences were likely to be negative, undesirable for somebody else	7,00	3,71	0,025
categ1_i25	with such consequences that the person would be able to live with them and adjust to them	7,20	5,00	0,025
categ2_i13	perspired, or had moist hands	4,60	7,35	0,031
categ3_i12	withdrew from people or things	5,80	2,65	0,025
categ3_i13	moved against people or things	5,80	2,47	0,019
categ3_i20	produced a short utterance	5,80	3,12	0,015
categ4_i16	lacked the motivation to do anything	5,60	3,41	0,048
categ4_i26	wanted to do damage, hit, or say something that hurts	5,20	2,12	0,006
categ4_i27	wanted to break contact with others	5,60	2,65	0,015
categ5_i8	felt negative	5,40	2,82	0,048
categ5_i9	felt energetic	7,00	8,53	0,011
categ5_i12	felt powerful	6,60	8,47	0,048

Table 3. List of characteristics that differ in Slovak sample according to gender with respect to *love markers*

Contrary to common stereotypes, men scored significantly higher in data items connected with life change – they stated that love means that they are more ready to break contact with others (categ4_i27), to withdraw from people or things (categ3_i12), to adjust to the consequences (categ1_i25), etc. more than women are. Notwithstanding gender differences in love evaluation, it is very interesting to state 7 common features which were in Slovak sample perceived identically by males and females. Love is for both genders something important in life what they head for (categ1_i10 and categ1_i11) and what they expect to get by God (or other supernatural power) (categ1_i15). They also have coincidence with some bodily symptoms (categ2_i10 – felt her or his breathing slowing down, categ3_i22 – changed the melody of her or his speech, categ3_i24 – spoke faster) (after Panasenکو, Démuthová et al., 2012: 265).

4.2 Emotional markers of HATRED (Slovak data)

21 Slovak participants referred to this emotion term which was described by 144 variables affording nine-point response scale for evaluation of each variable. Description of the tables can be the same as in love markers (see tables 1 and 2).

number of category	description	mean
categ4_i37	wanted to destroy whatever was close	7,86
categ5_i1	was in an intense emotional state	7,43
categ3_i13	moved against people or things	7,33
categ2_i2	felt weak limbs	7,29
categ2_i9	felt his/her muscles tensing (whole body)	7,24
categ3_i15	spoke louder	7,19
categ4_i3	felt the urge to stop what he/she was doing	7,19
categ3_i22	changed the melody of his/her speech	7,14
categ3_i5	frowned	7,14
categ4_i26	wanted to do damage, hit, or say something that hurts	7,10

Table 4. List of top ten characteristics which were stated by Slovak participants as extremely common for *hatred markers*

category	number of feature	description	mean
features describing the person's evaluation or appraisal of the event, conscious or not	categ1_i20	of which the consequences were likely to be negative, undesirable for the person him/herself	6,95
	categ1_i27	that violated laws or socially accepted norms	6,00
features describing the bodily symptoms that tend to occur during the emotional state	categ2_i2	felt weak limbs	7,29
	categ2_i9	felt his/her muscles tensing (whole body)	7,24
features describing facial and vocal expressions and gestures, that accompany the emotion.	categ3_i13	moved against people or things	7,33
	categ3_i15	spoke louder	7,19
features describing tendencies to behave in certain ways that accompany the emotion	categ4_i37	wanted to destroy whatever was close	7,86
	categ4_i3	felt the urge to stop what he/she was doing	7,19
features describing the subjective experience that characterizes the emotion	categ5_i1	was in an intense emotional state	7,43
	categ5_i2	experienced the emotional state for a long time	7,10
features describing ways in which the emotion can be regulated	categ6_i2	showed a stronger degree of emotion than he/she actually felt	6,43
	categ6_i1	tried to control the intensity of the emotional feeling	4,95
some general features of the emotion experienced	categ7_i1	If a speaker of your native language as spoken in your country or region uses the following emotion words to describe an emotional experience, how likely is it that he/she will be changed in a lasting way (due to the emotional experience)	4,95
	categ7_i2	How frequently is this state generally experienced in your society	4,29

Table 5. Example of the first two the most common features in each category of *hatred markers* in Slovak sample

Table 6 presents very interesting results of gender aspect of hatred evaluation and display.

number of category	description	mean male	mean female	sig.
categ1_i6	that was in itself pleasant for the person (independently of its possible consequences)	6,00	2,94	0,011
categ1_i7	that was in itself pleasant for somebody else (independently of its possible consequences)	6,00	2,75	0,008
categ1_i12	that was caused by chance	6,60	3,50	0,004
categ1_i15	that was caused by a supernatural power (e.g., God, ancestors, ghosts)	6,60	4,44	0,040
categ1_i27	that violated laws or socially	4,80	7,56	0,015

number of category	description	mean	sig.	
categ3_i6	accepted norms	3,00	5,69	0,032
categ4_i2	wanted the ongoing situation to last or be repeated	4,60	2,19	0,032
categ4_i12	wanted someone to be there to provide help or support	6,00	3,00	0,015
categ4_i31	wanted to tackle the situation	7,00	3,44	0,003
categ4_i33	wanted to take care of another person or cause	4,80	2,19	0,011
categ4_i34	wanted to be near or close to people or things	5,00	2,63	0,019
categ4_i35	wanted to be tender, sweet, and kind	4,80	1,25	0,015
categ5_i3	felt good	4,00	1,81	0,008
categ5_i12	felt powerful	6,20	3,44	0,032
categ5_i16	felt calm	5,20	2,06	0,008

Table 6. List of characteristics that differ in Slovak sample according to gender with respect to *hatred markers*

SPSS allows us to present obtained information in a different way. Figure 1 shows the answer distribution of the first category from Table 6. In the left column there are women's answers and in the right column those of men. We can see that the markers for hatred in male and female understanding are extremely different: men want to tackle the situation, whereas women are sure that men's behaviour violates laws or socially accepted norms.

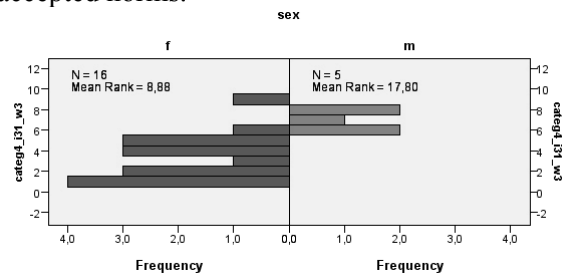


Figure 1. Answer distribution for category4_i31" (wanted to tackle the situation)

4.3 Emotional markers of LOVE (Czech data)

17 Czech participants referred to these emotion terms which were described by 144 variables affording nine-point response scale for evaluation of each variable.

number of category	description	mean
categ7_i3	to what extent is it socially accepted to experience this emotional state in your society	8,12
categ2_i7	felt his/her heartbeat getting faster	8,06
categ4_i35	wanted to be tender, sweet, and kind	7,94
categ4_i39	wanted to sing and dance	7,82
categ5_i3	felt good	7,65
categ4_i2	wanted the ongoing situation to last or be repeated	7,59
categ3_i1	smiled	7,53
categ3_i22	changed the melody of his/her speech	7,47
categ4_i33	wanted to take care of another person or cause	7,47
categ5_i9	felt energetic	7,41

Table 7. List of top ten characteristics which were stated by Czech participants as extremely common for *love markers*

In Czech sample only two characteristics (*state accepted in the society* and *felt her or his heartbeat getting faster*) scored in extreme values (mean 8,12 and 8,06); all others were perceived with central occurrence. Czechs evaluate features stated in GRID questionnaire less extremely which means they expect wide range of experiences when it comes to love. List of characteristics that were stated as the most common for "love" in Czech cultural group shows mainly positive features. They are connected with positive emotional feelings and caring tendencies (*wanted to comply to someone else's wishes, wanted to take care of another person, wanted to be tender, sweet, and kind*), and, what is more important, such a kind of the emotional behaviour is socially accepted in Czech society (after Panasenko, Démuthová et al., 2012: 266).

category	number of feature	description	mean
features describing the person's evaluation or appraisal of the event, conscious or not	categ1_i6	that was in itself pleasant for the person (independently of its possible consequences)	7,12
	categ1_i18	of which the consequences were likely to be positive, desirable for the person him/herself	7,12
features describing the bodily symptoms that tend to occur during the emotional state	categ2_i7	felt his/her heartbeat getting faster	8,06
	categ2_i1	felt shivers (in the neck, or chest)	7,18
features describing facial and vocal expressions and gestures, that accompany the emotion.	categ3_i1	smiled	7,53
	categ3_i22	changed the melody of his/her speech	7,47
features describing tendencies to behave in certain ways that accompany the emotion	categ4_i35	wanted to be tender, sweet, and kind	7,94
	categ4_i39	wanted to sing and dance	7,82
features describing the subjective experience that characterizes the emotion	categ5_i3	felt good	7,65
	categ5_i9	felt energetic	7,41
features describing ways in which the emotion can be regulated	categ6_i2	showed a stronger degree of emotion than he/she actually felt	6,76
	categ6_i1	tried to control the intensity of the emotional feeling	6,12
some general features of the emotion experienced	categ7_i3	to what extent is it socially accepted to experience this emotional state in your society	8,12
	categ7_i2	how frequently is this state generally experienced in your society	7,18

Table 8. Example of the first two the most common features in each category of *love markers* in Czech sample

Table 9 presents interesting results of gender aspect of love evaluation and display (after Panasenko, Démuthová et al., 2012: 269).

number of category	description	mean male	mean female	sig.
categ1_i5	that was inconsistent with the expectations of the person	7,20	4,25	0,027

categ1_i6	that was in itself pleasant for the person (independently of its possible consequences)	4,80	8,08	0,037
categ1_i18	of which the consequences were likely to be positive, desirable for the person him/herself	5,00	8,00	0,048
categ1_i19	of which the consequences were likely to be positive, desirable for somebody else	5,00	7,67	0,048
categ1_i20	of which the consequences were likely to be negative, undesirable for the person him/herself	6,20	2,17	0,014
categ1_i29	where the person was treated unjustly (and felt offended)	4,80	2,08	0,019
categ3_i12	withdrew from people or things	3,80	2,33	0,048
categ4_i7	wanted to be in control of the situation	6,20	3,50	0,037
categ4_i8	wanted to take initiative him/herself	6,80	4,33	0,037

Table 9. List of characteristics that differ in Czech sample according to gender with respect to *love markers*

From the data presented in Table 9 we see that for men love is perceived as something, that was inconsistent with the expectations of the person; whereas for women – as something that was in itself pleasant for the person (independently of its possible consequences) and of which the consequences were likely to be positive, desirable for the person him/herself.

4.4 Emotional markers of HATRED (Czech data)

24 Czech participants referred to these emotion terms which were described by 144 variables affording nine-point response scale for evaluation of each variable (see Tables 1 and 2).

number of category	description	mean
categ4_i37	wanted to destroy whatever was close	6,58
categ4_i19	wanted to flee	6,33
categ4_i36	wanted to run away in whatever direction	6,33
categ3_i15	spoke louder	6,33
categ5_i1	was in an intense emotional state	6,21
categ4_i26	wanted to do damage, hit, or say something that hurts	6,13
categ4_i20	wanted to keep or push things away	6,13
categ5_i18	felt bad	6,04
categ1_i29	where the person was treated unjustly (and felt offended)	6,00
categ2_i3	got pale	5,96

Table 10. List of top ten characteristics which were stated by Czech participants as extremely common for *hatred markers*

category	number of feature	description	mean
features describing the person's evaluation or appraisal of the event, conscious or not	categ1_i29	where the person was treated unjustly (and felt offended)	6,00
	categ1_i26	that was inconsistent or incongruent with the person's own standards and ideals	5,83
features describing the bodily symptoms that tend to occur during the emotional state	categ2_i3	got pale	5,96
	categ2_i1	felt shivers (in the neck, or chest)	5,92

features describing facial and vocal expressions and gestures, that accompany the emotion.	categ3_i15	spoke louder	6,33
	categ3_i17	had a trembling voice	5,63
features describing tendencies to behave in certain ways that accompany the emotion	categ4_i37	wanted to destroy whatever was close	6,58
	categ4_i19	wanted to flee	6,33
features describing the subjective experience that characterizes the emotion	categ5_i1	was in an intense emotional state	6,21
	categ5_i18	felt bad	6,04
features describing ways in which the emotion can be regulated	categ6_i2	showed a stronger degree of emotion than he/she actually felt	5,88
	categ6_i1	tried to control the intensity of the emotional feeling	5,58
some general features of the emotion experienced	categ7_i1	If a speaker of your native language as spoken in your country or region uses the following emotion words to describe an emotional experience, how likely is it that he/she will be changed in a lasting way (due to the emotional experience)	5,88
	categ7_i2	How frequently is this state generally experienced in your society	4,00

Table 11. Example of the first two most common features in each category of *hatred markers* in Czech sample

Table 12 presents interesting results of gender aspect of hatred display. According to the data, the way of displaying hatred for men is the intention to do damage, hit, or say something that hurts; whereas in female answers we find the variety of choice: to frown, to want to break contact with others and to do damage, hit, or say something that hurts (the last one coincides with men's opinion).

number of category	description	mean male	mean female	sig.
categ1_i6	that was in itself pleasant for the person (independently of its possible consequences)	4,22	1,40	0,012
categ1_i10	that was important and relevant for the person's goals or needs	3,94	2,00	0,046
categ1_i17	of which the consequences were predictable	5,11	2,60	0,046
categ1_i22	that required an immediate response	5,33	3,00	0,009
categ1_i28	where the person was at the center of attention	5,39	2,60	0,015
categ3_i1	smiled	3,67	1,40	0,030
categ3_i5	frowned	5,06	7,80	0,019
categ4_i10	wanted to hand over the initiative to someone else	4,22	2,20	0,046
categ4_i18	lacked the motivation to pay attention to what was going on	4,50	2,40	0,024
categ4_i26	wanted to do damage, hit, or say something that hurts	5,50	7,80	0,046
categ4_i27	wanted to break contact with others	5,17	7,80	0,024
categ5_i6	felt at ease	5,11	1,80	4,16E-4
categ4_i39	wanted to sing and dance	3,39	1,40	0,009
categ4_i35	wanted to be tender, sweet, and kind	4,06	1,80	0,037
categ5_i3	felt good	4,00	1,80	0,030

Table 12. List of characteristics that differ in Czech sample according to gender with respect to *hatred markers*

5 Discussion and conclusion

After the identification typical features of love and hatred in Slovak and Czech sample, we tried to identify the differences between these two nations. As we see from table 13 Czech and Slovak sample in *love markers* mainly coincide and are connected with emotional state (categ5_i1 – was in an intense emotional state and categ5_i2 – experienced the emotional state for a long time) and features regarding the bodily symptoms that tend to occur during the ensuing emotional state (categ2_i16 – blushed). As it comes from the table, to love means for Czechs and Slovaks to be in an intense emotional state. Czech and Slovaks also think that love is connected with experiencing the emotional state for a long time.

number of category	description	mean Slovak	mean Czech	sig.
categ1_i8	that was in itself unpleasant for the person (independently of its possible consequences)	4,77	2,41	0,014
categ2_i2	felt weak limbs	6,18	4,18	0,023
categ2_i11	felt his/her breathing getting faster	7,95	6,06	0,003
categ2_i13	perspired, or had moist hands	6,73	4,53	0,025
categ2_i14	sweated (whole body)	6,50	4,53	0,013
categ2_i15	felt hot (puff of heat, cheeks or chest)	7,91	5,47	0,001
categ2_i16	blushed	8,27	6,47	0,021
categ3_i2	felt his/her jaw drop	7,05	3,82	5,45E-4
categ3_i7	opened his/her eyes widely	6,45	3,29	3,40E-5
categ4_i5	felt inhibited or blocked	5,77	4,35	0,031
categ4_i14	wanted to move	6,55	3,41	9,74E-5
categ4_i20	wanted to keep or push things away	7,41	4,00	3,401-5
categ4_i25	wanted to make up for what he/she had done	5,50	3,53	0,031
categ4_i34	wanted to be near or close to people or things	7,91	5,82	0,018
categ4_i38	wanted to act, whatever action it might be	7,68	5,53	0,002
categ5_i1	was in an intense emotional state	8,55	6,59	0,017
categ5_i2	experienced the emotional state for a long time	8,32	6,59	0,010
categ5_i11	felt restless	6,59	4,24	0,001
categ5_i7	felt powerless	5,00	2,94	0,045
categ6_i3	showed a weaker degree of emotion than he/she actually felt	5,41	3,59	0,027

Table 13. List of characteristics that differ in Czech and Slovak sample of *love markers*

Table 14 shows that hatred display by Slovaks and Czechs is different.

number of category	description	mean Slovak	mean Czech	sig.
categ1_i22	that required an immediate response	6,48	4,83	0,020
categ1_i30	where the person was in danger (experienced a threat)	6,86	5,26	0,041
categ2_i2	felt weak limbs	7,29	5,00	0,001
categ2_i8	felt his/her muscles relaxing (whole body)	3,33	4,74	0,025
categ2_i9	felt his/her muscles tensing (whole body)	7,24	4,87	0,001
categ2_i13	perspired, or had moist hands	5,71	4,17	0,015
categ2_i15	felt hot (puff of heat, cheeks or chest)	6,52	4,48	0,008
categ2_i16	blushed	6,86	4,43	0,004
categ3_i4	felt his/her eyebrows go up	6,48	4,39	0,007
categ3_i5	frowned	7,14	5,65	0,035
categ3_i10	made abrupt body movements	5,71	4,13	0,047

categ3_i12	withdrew from people or things	6,24	4,61	0,040
categ3_i13	moved against people or things	7,33	5,22	0,008
categ3_i24	spoke faster	6,57	5,00	0,046
categ4_i3	felt the urge to stop what he/she was doing	7,19	5,13	0,012
categ4_i35	wanted to be tender, sweet, and kind	2,10	3,57	0,002
categ4_i39	wanted to sing and dance	1,81	2,96	0,002
categ5_i2	experienced the emotional state for a long time	7,10	5,39	0,039
categ5_i3	felt good	2,33	3,52	0,018
categ5_i5	felt submissive	2,81	5,52	0,001
categ5_i11	felt restless	6,57	4,78	0,019
categ5_i16	felt calm	2,81	4,00	0,048
categ5_i18	felt bad	4,62	6,04	0,044

Table 14. List of characteristics that differ in Czech and Slovak sample of *hatred markers*

For Slovaks hatred is associated with category 3 (*expressions*), which also includes movements and category 2 (*bodily symptoms* – felt weak limbs; felt his/her muscles tensing (whole body). Czechs connect it with category 3 (*expressions*) – categ3_i5" – *features describing facial and vocal expressions and gestures that accompany the emotion* (frowned) and category 5 – *subjective feeling* (felt submissive, felt bad).

Figure 2 shows the answer distribution of the category 2_i2 from table 14, which has high scores in Slovak data. In the left column there are answers from Czech data and in the right column there are answers from Slovak data. We can see the differences between Slovak and Czech answers (for hatred).

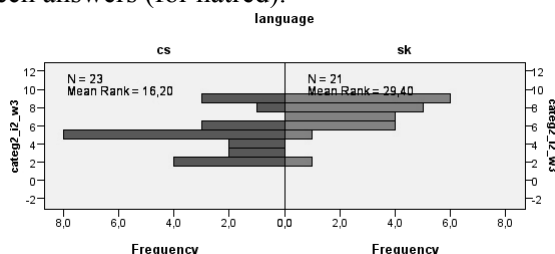


Figure 2. Answer distribution for category 2_i2" (felt weak limbs)

We have made only the first steps in the direction of emotion study in a very limited way: two emotion terms (love and hatred), two West Slavic languages, but results obtained from GRID give us opportunity to describe cross-cultural similarities and differences of the emotion terms. Experimental data show that these are two different cultures and the ways of understanding, evaluation, perceiving love, relation to a partner are different. Thanks to SPSS-based approach we can specify extralinguistic means of emotions and feeling manifestation, which are important in cross-cultural research. In general, we can compare answers of people according to their gender, age and country – characteristics

which were perceived identically and in a different way; we can find top ten characteristics which were stated by Slovak and Czech participants as extremely common (ranks from 8 to 9); we can specify features of significant correlation with one of seven categories and features it includes. In particular, in Slovak GRID data we see that mainly **emotional state** prevails (wanted to be tender, sweet, and kind; was in an intense emotional state; experienced the emotional state for a long time felt good; felt energetic) as well as **bodily symptoms and movements** (felt her or his heartbeat getting faster; felt warm (whole body); wanted to sing and dance). From Czech GRID data we may speak about such prevailing features as **facial expressions and gestures** (smile), **vocal expression** (changes of speech melody), **bodily symptoms and movements** (felt her or his heartbeat getting faster; wanted to sing and dance).

As far as GRID database includes 23 languages with their regional varieties our next step will be a cross-cultural study of emotive terms in languages of different families and study of ways of expressing emotions and feelings with the help of language means, i.e., semantics, syntax and intonation.

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