UNIVERZITA KOMENSKÉHO V BRATISLAVE
Fakulta Matematiky, Fyziky a Informatiky

Analysis of conceptual metaphors of selected emotions in Slovak language

Diplomová práca

Dana Retová

Bratislava 2008

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Kognitívna veda

9.2.8 Umelá inteligencia - 3.1.9 Psychológia

Vedúci diplomovej práce:

Markus F. Peschl

ao. Univ. Prof. Dr.DI

Bratislava 2008

Hereby I declare that I wrote this thesis myself with the use of referenced sources and under the supervision of Markus F. Peschl, ao. Univ. Prof. Dr.DI.

Čestne prehlasujem, že som predloženú diplomovú prácu vypracovala samostatne s použitím uvedenej literatúry a pod odborným vedením Markusa Peschla, ao. Univ. Prof. Dr.DI.

Dana Retová

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Abstract

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This thesis studies conceptual metaphors related to the emotion concepts. We analyzed the concepts of six emotions: anger, fear, happiness, sadness, pride, and shame. The main goals of the thesis were to analyze the metaphorical structure of these emotion concepts in Slovak and to compare it to the structure in English together with collocation analysis of emotional terms in different contexts. The results showed that the structure of conceptual metaphors of selected emotion concepts in Slovak is equivalent to the structure in English and the differences are found on the more concrete level of metaphors.
Keywords: cognitive linguistics, conceptual metaphor, emotions, Slovak

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Abstrakt

RETOVÁ, Dana: Analýza koneptuálnych metaphor vybraných emócií v slovenskom jazyku. [Diplomová práca]. - Univerzita Komenského v Bratislava. Fakulta Matematiky, Fyziky a Informatiky. Študijný odbor: Kognitívna veda. – Školiteľ: Markus F. Peschl, ao. Univ. Prof. Dr.DI. – Bratislava: FMFI, 2008. – Počet strán bez príloh: 77.

Táto práca sa zaoberá konceptuálnymi metaforami súvisiacimi s pojmami emócii. Skúmali sme šest emocionálnych pojmov: hnev, strach, šťastie, smútok, hrdosť a hanbu. Hlavnými cieľmi práce bola analýza štruktúry metafor týchto emócií v slovenčine a ich porovnanie s výsledkami v angličtine a analýza kolokačného výskytu emocionálnych výrazov v rôznych kontextoch. Výsledky ukázali, že štruktúra konceptuálnych metafor pojmov spojených so skúmanými emóciami sa výrazne nelíši od štruktúry v angličtine a rozdiely sa nachádzajú len na konkrétnejšej úrovni metafor.
Kľúčové slová: kognitívna lingvistika, konceptuálne metafory, emócie, slovenčina

Table of Contents

Introduction 9

Part I – Theoretical background 11

1 Cognitive linguistics as a part of cognitive science 11

1.1 Foundations of cognitive science as a scientific discipline 11

1.1.1 Turing Machine and mental processes 11

1.1.2 Objectivist paradigm 12

1.2 Language as a formal system 14

1.2.1 Syntactocentric view on language 14

1.3 Cognitive linguistics 16

1.3.1 Shift of focus on semantics 17

1.3.2 Embodiment 17

1.4 Conceptual metaphor theory 18

1.4.1 Role of metaphors in reasoning 19

1.4.2 Types of conceptual metaphors 21

1.4.3 Metaphor and metonymy 22

2 Emotions 23

2.1 Concept of emotions 23

2.2 Scientific theories of emotions 24

2.2.1 Darwinian perspective 24

2.2.2 Cognitive perspective 25

2.2.3 Multi-dimensional theories 25

2.2.4 Jamesian perspective 26

2.3 Universality of emotions 27

2.4 What has conceptual metaphor theory to say about emotion? 28

Part II – Case studies 30
3 Goal and Methodology 31
3.1 Goal 31
3.2 Methodology 32
3.2.1 Metaphor categorization 32
3.2.2 Collocation analysis 34
4 Conceptual metaphors of emotions 36
4.1 Anger 36
4.2 Fear 47
4.3 Happiness 53
4.4 Sadness 58
4.5 Pride 62
4.6 Shame 64
5 Scope of conceptual metaphors 66
5.1 General metaphors 68
5.2 Specific metaphors 73
5.3 Emphasis of metaphors 73
6 Discussion 75
6.1 Interpretation of the results 75
6.2 Methodology 76
6.3 Suggestions for future research 77
Conclusion 79
Resumé 81
Bibliography 83
Appendix I 87
Appendix II 90

Appendix III 94
Appendix IV 100
Appendix V 103
Appendix VI 104

Introduction

How can we characterize human emotions? Should we treat them as biological, psychological, or cultural entities? Can they be reduced to purely biological phenomenon, or are they social constructs?

The approach of cognitive linguistics escapes this simplistic division by explaining how concepts of human emotions arise from individuals' embodied experience in different cultural settings. Emotions are indeed constructed differently in diverse cultures but they all share the basis of common bodily experience which cannot be disregarded. They reflect general bio-physiological processes that form widespread metaphorical patterns of thought shared by different cultures. However, other patterns may be unique and give rise to distinct models of emotion in various cultural contexts. In this view, metaphorical language about the emotions, human physiology of emotions and cultural aspects are all part of an integrated system.

The main aim of this thesis is to analyze the figurative language we use when talking about emotion in Slovak. We would like to confirm that the most central metaphors and metonymies are grounded in bodily experience and they are universally understandable across the languages. We intend to compare the metaphorical models of emotion in Slovak language which has not been well-documented yet with the analysis of these models in other languages, particularly in English. Another goal is to have a closer look on universality of such models within the domain of emotions and see which patterns are unique for particular emotions and which can be used for emotions in general.

In the first-theoretical part, we present the foundations of cognitive linguistics as a distinct field of study and explain its emphasis on embodiment, interaction and metaphor as a basic tool for mapping abstract concepts on more familiar experience-based patterns of thought. Then, we will summarize some of the approaches to studying emotions and discuss the issue of universality of emotion. We will try to make clear in which ways conceptual metaphor theory can enrich the study of emotion.

The second part consists of the case studies investigating the nature of emotion concepts and language that we use when talking about them. The main focus is on the Slovak expressions and the comparison with similar studies done in English. We will also demonstrate that some metaphors are central to more than one emotion concept if not universal and that each of the metaphors emphasizes different aspects of emotional experience.

Part I – Theoretical background

1 Cognitive linguistics as a part of cognitive science

Cognitive linguistics is currently well-established field of study with testable hypotheses and many subjects of interest involved. However, to appreciate the major contribution that cognitive linguistics brought into cognitive science we have to understand a broader perspective in which it is set. In the next sections I would like to present a brief overview on how cognitive linguistics emerged reacting to the trends in linguistics and cognitive science centered on symbolism, recursion and generative rules.

1.1 Foundations of cognitive science as a scientific discipline

Cognitive science is an interdisciplinary field that has arisen during the past decades. It tries to gather and integrate knowledge from diverse disciplines formerly existing independently, such as psychology, linguistics, computer science, philosophy and neuroscience. Its main focus can be generalized as an effort to understand the nature of mind.

1.1.1 Turing Machine and mental processes

Although people have probably contemplated about the nature of mind, thoughts, reasoning and language since prehistoric ages, when the first digital computers appeared in the 1950s, it offered a completely new paradigm. British mathematician, Alan Turing, had proved that all digital computers were in principle reducible to recursive elaboration of a 'Turing machine' (Rohrer, 2001).

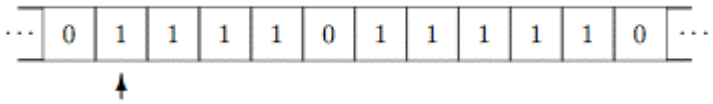


Figure 1: Turing machine [1]

The popular metaphor portrayed mind as 'software' running on brain-'hardware'. This exciting new view was reinforced by the first successes of the computer 'intelligence' dealing with the complex tasks that were previously exclusive to the human virtue such as playing chess or proving mathematical theorems. Computer program as a set of rules operating on a set of discrete symbols seemed to be analogical to mind manipulating symbolic representations, which could be ultimately reduced to the series of discrete symbols.

1.1.2 Objectivist paradigm

Although linguistics is one of the founding disciplines of cognitive science, since the technological revolution the question of semantics and real meaning has long been neglected and was substituted by attempts to formalize the language and work with the sets of algorithms as in a computer code.

The boom of AI brought the analogy of mind as a computer program with it a whole set of ideas:

- Mind is separated from body and independent of it
- Emotions have no conceptual content
- Grammar is all about form, not about meaning
- Reasoning is transcendental to thinking. It is universal in any possible world.
- All the people use the same conceptual system. (Lakoff, 1987)

[1] Turing machine is an abstract symbol-manipulating device that can simulate the logic of any computer. It consists of a infinite TAPE divided into cells, each containing one symbol, a HEAD that can move, read and write symbols on the tape, a TABLE of instructions or TRANSITION FUNCTION that state the next action given the current state of the machine. (Barker-Plummer, 2004)

Many of these assumptions were not even questioned because they are so deeply rooted in the tradition of western thinking that goes back to the Greek philosophers.
Therefore, linguists saw language as a formal system, a distinctive modular system independent of the rest of the human cognitive apparatus and thinking was characterized as symbol manipulation.

These ideas are based on objectivistic paradigm, which stated that the mind is “correct” when it accurately mirrors logic relationships in the objective world. In this view, mental representation does not necessarily have to be similar to external reality but it has to correspond to it in a systematic way. These representations are true or false, they refer to reality either correctly or not. The Universe has a transcendental rationality that is defined by the relationships of logic. Therefore, the facts are independent of human beliefs, knowledge or perception. Knowledge is knowledge, no matter how it is categorized, processed or memorized. Objectivist cognitive system requires the system itself to be defined independently to the cognitive processes (Lakoff, 1987 p. 169).

Objectivistic paradigm requires distinguishing literal and symbolic meaning. Literal meaning can correspond to reality and may or may not be true. Symbolic expressions are defined as such expressions that do not refer to the world directly. If metaphors and metonymies have any meaning at all, it is just some other literal meaning. They should be studied only as a part of pragmatics, not semantics. (Lakoff, 1987 p. 175). First come symbol manipulation, computation, and algorithm. The meaning is ascribed only later based on references to the things in external world.

1.2 Language as a formal system

A common notion in linguistics is that language is formed from the discrete units - words stored in lexicon and combined into meaningful utterances by syntactic rules. Ordinary sentence is composed of nouns, verbs, adjectives and other syntactic units. The major philosophical question that arises here is "how does the meaning of a sentence emerge out of its parts?"

By the principle of compositionality, sentence can be understood by identifying the meaning of the parts of the sentence (lexical units) along with an understanding of its structure (syntax).[2]

If words are arbitrary discrete units that refer to the objects in the external world and syntax is composed out of rules for manipulating these words, then it is possible to formalize the language given the meanings of individual lexical units and grammar of the particular language.

In 1957, Noam Chomsky presented his influential book 'Syntactic Structure' (Chomsky, 1957), in which he proposed a transformational approach to grammar. The formal structure he proposed involved 'deep structure' of primitive units which were connected to meaning. This underlying deep structure was transformed to the 'surface structure' of sentences by a series of rules. The formal structure of these transformations was related to Turing machines (Searle, 1972). It was an important step in the attempt to formalize the natural language and it catalyzed a massive development in linguistics by introducing the theory of Generative Grammar. The aim of this movement was to identify a set of rules that would characterize the combinations of words forming grammatically correct sentences in a language (Wikipedia contributors, 2008).

1.2.1 Syntactocentric view on language

Human language is certainly a very special faculty. People soon realized that it has some characteristics unique to it, most notably, its recursive nature that allows unlimited combinatorial productivity and the hierarchical organization within the categories of language.

[2] This tradition goes back to Frege's view of compositionality in logic: "The meaning of a compound expression is a function of the meaning of its parts and of the syntactic rules by which they are combined" (Partee, et al., 1990)

Generative theory was based on several assumptions (Jackendoff, 2007):

- The basic 'generative engine' responsible for this uniqueness of human language is provided by the syntactic component. The relation between phonology and semantics was created by "interpreting" syntax into corresponding structures.
- Generative rules are formalized in algorithms that build up the syntactical trees step by step.
- Since semantics is "interpretive", semantic combinatoriality has to be derived from the combinatoriality in syntactic structure. If no such structure is apparent at the 'surface structure' of the sentence, it is supposed to be explicit in the 'deep structure'.
- Rules of grammar and the lexicon are formally distinct. The productivity of language is a matter of syntax. In the course of a grammatical derivation lexical items are passively manipulated, they do not enter the combinatorial process.

In this view, grammar could be treated as context-free and semantics was to be treated independently. To be compatible with transformational generative syntax, semantic theory had to be interpretive. Once syntactic rules defined a set of well-formed sentences, they were assigned an interpretation by the separate semantic rules. Although it eliminated the necessity to deal with a lot of "messiness" and ambiguity associated with semantics in the study of language, it still could not provide a full account for the grammar of any natural language. Moreover, it showed the lack of interest in understanding and its grounding in empirics. More recent research showed these ideas of syntactic categories independent of the categories of human thought and social and cultural assumptions of speakers were not quite adequate (Jackendoff, 2007).

In contrast, generative semantics focused on semantics as generative part of the language and argued that more complex underlying structures are necessary to explain the language phenomena such as synonymy. The function of the deep structures was not generating grammar but generating meaning and mapping it onto the syntactic structures.

1.3 Cognitive linguistics

Cognitive linguistics is the school of linguistics within cognitive science that conceives language creation, learning and usage as a part of a larger psychological theory of how humans understand the world (Jackendoff, 2007 p. 192). It sees linguistic faculty in terms of more general cognitive abilities and rejects the notion of independent language-acquisition module as opposed to the syntactocentric approach of generative grammar that we discussed in previous section.

Cognitive linguistics emerged in the 1970s as a reaction to the formal approaches in linguistics that were prominent in cognitive science at that time. It advocates three principal positions:

- It denies the existence of an autonomous linguistic faculty in the mind
- It understands linguistic phenomena in terms of conceptualization
- It claims that language knowledge arises out of language use. (Evans, et al., 2007)

It also argues that storage and retrieval of linguistic knowledge does not have to be fundamentally different from the storage and retrieval of other knowledge. It concentrates on the semantics in terms of mental spaces instead of in terms of models of the world as assumed by the objectivists. Language in cognitive linguistics is both embodied and situated in a specific environment so that language and cognition continually influence one another.

Traditional linguistics divides the language faculty into distinct parts:

- Phonology – acoustic attributes of speech
- Morphology – word structure
- Syntax – sentence structure
- Semantics – meaning of words and sentences
- Pragmatics – meaning in discourse context

A consequence of this differentiation was that it offered little possibility to generalize across these aspects of language and study how they are interrelated.

1.3.1 Shift of focus on semantics

Intuitively, the idea that natural language is formed only out of uninterpreted symbols that gain its meaning in post-processing seems implausible. The primary function of the natural language is to inform, formulate ideas and communicate, not to produce sequences of arbitrary symbols and apply iterative rules on them (Lakoff, 1987 p. 225).

Lakoff's theories from 1980s represented a shift in paradigm in concepts of truth, knowledge, meaning and rationality. They questioned the traditional objectivistic view on human thinking and language (see section 1.1.2) and presented experientialistic semantics as an alternative. This approach understands meaning through the real experiences in a very real world with a very real body (Lakoff, 1987 p. 205). "The concepts are not defined simply in terms of their inherent properties, but they are defined in terms of interaction properties." (Lakoff, et al., 1980 p. 141).

On the other hand, they also reject radical subjectivism stating that what something means for an individual can never be completely known or conveyed to some other individual. They reject the arguments of subjectivism that human experience has no common natural structure. Lakoff (1980 pp. 241-242) maintain that this structure is not arbitrary but is dependent on our gestalt[3] perception. Therefore, metaphor allows partial communication of unshared experience and it is the very natural structure of our experience that allows it.

1.3.2 Embodiment

The mind and body are closely interrelated. People's embodied experiences are fundamentally linked to their thinking, language and understanding. The basic level of experiential semantics is characterized by gestalt perception, mental imagery and motor competence. The fact that people are most efficient on this level (Lakoff, 1987 p. 263) suggests that we tend to structure our experience on this basic level. In classical view, the most basic level is at the bottom of the structure and it is not reducible to parts. This is not applicable here. The fact that this level is basic does not mean that gestalts do not have any inner structure. Gestalts are cognitively more primitive than their parts although they indeed are rich in structure. (Lakoff, et al., 1980 p. 79).

[3] By "gestalt" we mean a structure, configuration, or pattern of physical, biological, or psychological phenomena so integrated as to constitute a functional unit with properties not derivable by summation of its parts.

The conceptual structure originates in our preconceptual experiences.

According to Lakoff (1987 p. 261), there are two types of preconceptual structures:

- Basic level – defined by convergence of our gestalt perceptions, our ability to move and our ability to form rich mental imagery.
- Kinesthetic image-schematic structure – these image schemas are relatively simple structures that appear again and again in our embodied experience

Lakoff and Johnson (Lakoff, et al., 1980) identified several of these preconceptual structures that are cognitively primitive in a sense that they refer directly to some aspect of experience. They will be discussed in more details in the case studies.

On the other hand, abstract concepts are meaningful only indirectly. We understand them only because of their systematic relationship to structures that are meaningful directly (by the means of metaphoric projection). The cognitive models that are not embodied are used consciously and with an effort (Lakoff, 1987 p. 26).

To summarize the difference between direct understanding and metaphorical understanding:

We understand our experience directly when we see how it is coherently structured based on gestalts that have arisen from interaction with the environment and as a part of it. We understand our experience metaphorically when we use gestalt from one domain of experience to structure the experience in another domain.

1.4 Conceptual metaphor theory

Classical theories have excluded metaphors from their studies for a long time. The reason for this might be that they “assume that one arrives at a metaphorical interpretation of a sentence by starting with the literal meaning and applying some algorithmic process to it” (Lakoff, 1992). They defined the metaphors as novel or poetic linguistic expressions outside of realm of ordinary everyday language.

Empirical studies of language showed that this notion is false. Indeed, metaphor has its place in natural language, and it is in many cases central to understanding the meaning of many abstract concepts.

Because so many concepts that are important to us are either abstract or not well-defined in our experience (emotions, thoughts, time), we need to mediate access to them through the concepts that we understand more clearly (spatial orientation, objects) (Lakoff, et al., 1980 p. 131). Also, many of our activities are by their nature metaphorical. When a new metaphor make its way into the conceptual system, which forms the basis for our activities, the system changes and with it also the perceptions and activities that are based upon it. New metaphors can potentially create new reality. (Lakoff, et al., 1980 pp. 161-162)

1.4.1 Role of metaphors in reasoning

Metaphors are not merely poetic expressions with no relation to meaning. They are "general mappings across conceptual domains" (Lakoff, 1992). This mapping has a common structure: a source domain, a target domain and a relation between the source and the target (Lakoff, 1987 p. 270).

In other words, entities in the source domain correspond to the entities in the target domain. Metaphorical mappings preserve the cognitive topology of the source domain in a way consistent with the inherent structure of the target domain. This is very important point because when we use metaphor, we can reason about the target domain using our knowledge about the source domain. This gives us the possibility to understand "novel extensions in terms of the conventional correspondences" (Lakoff, 1992).

For example the following expressions make use of a common metaphor LOVE IS A JOURNEY:

- They are at the crossroad in their relationship.
- This relationship is not going anywhere.
- They're in a dead-end relationship.

For illustration, the mapping is represented in the table:

SOURCE – JOURNEY	→	TARGET - LOVE
Travelers	→	Lovers
Vehicle	→	Love Relationship
Journey	→	Events
Distance covered	→	Progress made
Obstacles encountered	→	Difficulties experienced
Decision about direction	→	Choices about what to do
Destination of the journey	→	Goals of the relationship

Opposite to the classical view, metaphorical mappings are fixed correspondences that are being activated rather than algorithmic processes that take input and give outputs (Lakoff, 1992).

According to Lakoff and Johnson, metaphoric projection is equivalent to simultaneous activation of neural maps in the brain. Therefore, we do not have to define the domains of experience linguistically; they are inherent in our experience.

Our thinking is grounded in experiences that we gain through our senses. Source domains are usually phenomena of direct perception. These include the five perceptual senses, sense of time and space and sense of balance (Vaňková, et al., 2005 pp. 130-131).

Primary metaphors are based on human experience and are used as building blocks for more complex conceptual metaphors. Due to its immediate relation to the experience, the primary metaphors are almost always universal. Metaphors form in our mind whole systems biasing our thinking and understanding of the world. (Vaňková, et al., 2005 p. 103). They are the tools that allow our understanding of experiential domains that do not have their own preconceptual structure. (Lakoff, 1987 p. 294)

Lakoff predicts that the mapped categories tend to be at the superordinate rather than basic level – mapping at the superordinate level maximizes the possibilities for mapping rich conceptual

structure in the source domain onto the target domain. Usually it is the superordinate category that is in the general mapping, while special cases are in the basic-level categories (Lakoff, 1992). If there is a structural correlation between the source domain and the target domain, metaphor seems natural. Different ways of metaphoric structuring of a concept serve different purposes in the sense that they emphasize different aspects of the concept (Lakoff, et al., 1980 p. 112) .

1.4.2 Types of conceptual metaphors

Lakoff and Johnson (1980 pp. 26,79) identified three types of conceptual metaphors that we use in natural language to structure our concepts:

- **Structural metaphor** – one concept is structured on the basis of other concept that is highly structured and clearly defined (e.g. LOVE is a JOURNEY).
- **Orientation metaphor** – organizes whole system of concepts (HAPPY is UP). Most of our basic concepts are organized in conceptual frame of one or more spatially oriented metaphors that are grounded in the physical and cultural experience.
- **Ontological metaphors** – serve various purposes such as reference, quantification etc. They treat abstract (non-physical) things as entities. We barely notice them as metaphors because they are so naturally imprinted in our conceptual system that we take them to be the direct descriptions of mental phenomena. We use them to understand the events, actions and states. Events are metaphorically conceptualized as objects, actions as substances and states as containers (Lakoff, et al., 1980 pp. 40-45).

There are two approaches to analyzing conceptual metaphors:

1. To study the conceptual metaphors of selected target domain and analyze their source domains.
2. To study the source domains and identify the target domains that originate in them.

1.4.3 Metaphor and metonymy

Figurative terms do not literally name particular kinds of emotions. They "denote various aspects of emotions concepts" (Kövecses, 2000 p. 4). They can be either metaphorical or metonymical.

Metaphor and metonymy are two different types of processes. Metaphor is basically one concept grasped in terms of another one and its primary function is understanding. For example, when using the expression *boiling with anger*, we use conceptual metaphor ANGER IS A HOT FLUID. The temperature of the fluid represents the intensity of the emotion.

Metonymy, on the other hand, has referential role – it provides mental access to a domain through a part of the same domain – part refers to the whole or part stands for another part (Lakoff, et al., 1980 pp. 49-50). For example, one part of the domain of fear is an assumed drop in body temperature – therefore we may refer to fear by using an expression *to have cold feet* which represents the conceptual metonymy BODY TEMPERATURE STANDS FOR FEAR (Kövecses, 1990).

Metaphors and metonymies are not arbitrary but they form conceptual systems. It is on the basis of these systems that we conceptualize our experience (Lakoff, et al., 1980 p. 55).

2 Emotions

In this section, I would like to present the concept of emotions pictured by several scientific theories and discuss how they are related to the folk theories of emotions that are reflected in language. First of all I would like to summarize the main perspectives in the study of emotions.

2.1 Concept of emotions

Scientists and philosophers have always struggled with definition of emotion because we describe some very different processes by the same word. As Minsky (2006) pointed out, it is one of what he calls "suitcase" words. We can put in and pull out whatever we currently need. The meaning depends very much on the actual context. Depending on the definition, it may or may not include several conscious or non-conscious phenomena such as feelings, cognitive appraisal or reaction to stimuli.

It is difficult to pick any universal definition. For illustration, here are three completely different definition of the same word:

Wikipedia, a free content encyclopedia defines it as such: "Emotion, in its most general definition, is an intense neural mental state that arises subjectively rather *than through conscious effort and evokes either a positive or negative psychological response to move an organism to action."* (Wikipedia contributors, 2008)

For Peter Goldie (2000 p. 12) *"an emotion is typically complex, episodic, dynamic and structured".* It involves many different elements: perception, thoughts, and feelings of various kinds, and bodily changes of various kinds. The emotions in his view are intentional; they have directedness towards an object.

Aristotle defines the emotions as *"all those feelings that so change men as to affect their judgments, and that are also attended by pain or pleasure." (Minsky, 2006, p. 234)*

2.2 Scientific theories of emotions

Many domains of science have tried to approach the concept of emotions from many different perspectives.

2.2.1 Darwinian perspective

Probably the first scientific study of the expression of emotions was Darwin's famous study The Expression of the Emotions in Man and Animals in which he analyses the muscle movements in facial expressions and argues that human expressions are sometimes homologous with those of primates. Darwin (1896) argued that expressions of emotion typically evolve from behaviors with some direct value to the organism in the situation that elicits the emotion. For example, in surprise the eyes are widely opened and the head is oriented to the stimulus. This serves to obtain as much information as possible (Griffiths, 1998 p. 197). His research focused on physical displays of emotion; body language of animals and facial expressions in humans. He hypothesized that although once they served particular functions (baring teeth in anger to prepare for attack), now they serve to communicate emotions to others.

He identified several pan-cultural expressions and this idea was later further developed by Paul Ekman (1969) and his cross-cultural studies. Ekman together with Wallace Friesen studied members of the tribe in New Guinea which were believed to have no contact with the western culture. The aim of the experiment was to test their ability to recognize facial expression in the pictures representing Westerners emotions. The results were highly supportive to the idea that some facial expressions of emotions may be pan-cultural. (Griffiths, 1998 p. 200)

The emotions which Ekman identified as universally recognizable are these: "happiness, sadness, fear, anger, surprise and disgust" (Griffiths, 1998). Indeed, other emotions may be as local as dialects.

However, these studies omit "higher" social emotions, such as envy or pride. This led to the idea that some emotions may be more "basic" than others and that our concepts of emotions are organized hierarchically. Many philosophers, namely the Stoics, Descartes, Spinoza, Hobbes, etc. thought that other non-basic emotions are comprised of a cocktail of basic emotions (Goldie, 2000 p. 87).

2.2.2 Cognitive perspective

Completely different standpoint was presented by the cognitive perspective which explains emotional process by the cognitive appraisal of the environment. Emotions are specified in terms of propositions: you can't be angry with someone unless you believe that he's guilty of some offense. Some even identify emotions with judgments: My anger at someone simply is the judgment that I have been wronged by that person. This claim is relatively weak, however, since the existence of a propositional attitude is at best a necessary, but not a sufficient condition of the existence of an emotion[4]. (De Sousa, 1995 p. 272)

2.2.3 Multi-dimensional theories

Many psychologists tried to approach emotions in terms of dimensions or scales. Various models of two to 11 factors were proposed. The most common is a two-dimensional structure, with evaluation dimension (pleasant vs. unpleasant) and arousal dimension (excited vs. relaxed) (Watson, et al., 1985). This model was criticized because of its low discrimination of emotions such as anger and fear. Instead, a three-dimensional model was proposed that seem to be "necessary and sufficient to adequately define emotional states" (Mehrabian, 1980). Its dimensions are: evaluation, potency and activity. They are commonly known as 'EPA dimensions' and they are widely used for measuring of affective aspects of semantics using the techniques of semantic differential.

[4] There exist a well-know argument called "fear of flight" objection: I may be well aware that flying is the safest means of transport and yet suffer fear of flying.

2.2.4 Jamesian perspective

In 1890s William James proposed that a conscious emotional experience is largely due to the perception of bodily changes to stimuli. For example, the perception of a fearful object directly precipitates the autonomic nervous system (ANS) changes of the flight response. The later perception of these changes constitutes the feeling of fear. In this view emotions cannot be reduced to a set of propositions, they act on the basis of an active interaction between the bodily feelings and the mind.

Neuroscientist Walter D. Cannon opposed James' theory and argued that the same bodily responses can be provoked by different stimuli so they cannot be emotion-specific so ANS arousal cannot differentiate between emotions by itself (Griffiths, 1998). Schachter and Singer (1962) also came to the conclusion that physiological arousal is a necessary condition of emotion, but the very same arousal can be labeled as many different emotions. Emotions are individuated by the cognitions that accompany them." They tried to support this theory by experiments in which they tried to artificially evoke the responses of ANS (by injection of adrenaline) in participants, then subject them to conditions designed to produce happiness or anger and afterwards ask them to label the emotion they thought they had. The results of the experiment were weak but supportive of their hypotheses.

However, contemporary scientific theory of somatic markers presented by Antonio Damasio (2004) supports James' original ideas that emotions have their origin in bodily reactions. It integrates modern neurological evidence and existing approaches from other disciplines. According to Damasio, emotions are complex sets of chemical and neuronal reactions forming functional structures in an organism. These reactions are formed by normal brain, when it encounters an emotionally important stimulus. The emotion is activated by its presence or recalled from memory. The reaction is automatic. The capability to react to some emotionally important stimuli is formed by the evolution and also learned from experience. The result of these

reactions is a change in the state of the body itself and brain systems that map the body and facilitate thinking. The final function of these changes is to bring the body and mind to the conditions that help survival, health and well-being of an organism.

All these different perspectives on emotion prove that understanding of this concept is very inconsistent. Some theories put forward the experiential nature of emotions represented by feelings, others cognitive aspect or externally observable expressions of emotion.

Most of these views have their support in folk theory of emotions that is reflected in common language that we use when talking about emotional states.

Analysis of metaphorical concepts related to emotions can allow us to understand different aspects of folk theories about emotion. As with scientific theories, different metaphors that we use to structure our concepts of emotions highlight certain aspects while putting other aspects out of sight.

2.3 Universality of emotions

Another interesting debate arises from the question whether emotions are universal or not. As already mentioned in section 2.2.1, Paul Ekman showed that expressions of the six 'basic' emotions are cross-culturally universal.

One popular view is that "the basic emotions are hardwired, etched into our neural circuitry by our genes rather than by our culture, part of the basic mental design that is common to us all" (Evans, 2003 p. 12). The experiments of the ethologist Irenaus Eibl-Eibesfeldt showed that the pan-cultural expressions of emotion develop in infants born deaf or blind so he concluded that these expressions are inborn and they mature as opposed to being learned. (Griffiths, 1998)

On the other hand, there surely exist emotions which are culturally specific. Dylan Evans in his book (2003) notes that in the tribe of Gururumba people of New Guinea there exist an emotion best translated as "being a wild pig" which could develop only if exposed to the culture in which it

exists. But some emotions are not easily defined as simply basic or culturally specific, which could easily mislead into oversimplifying the concept of emotions.

Griffiths (1998) proposes that emotions like love should be called 'higher cognitive emotions', because they involve much more cortical processing than basic emotions. While basic emotions are largely processed in subcortical structures, emotions like love are more associated with areas of the neocortex. That means that they are more capable of being influenced by conscious thoughts and language, and this in turn is probably what allows higher cognitive emotions to be more culturally variable than the basic emotions but still universal. They may include emotions such as love, guilt, shame, embarrassment, pride, envy, jealousy. (Evans, 2003 p. 21)

Although emotions may share the same physiological manifestation, it does not necessarily mean that the concepts of these emotions are the same in various cultures. Indeed, experience of the feelings associated with an emotion is based in our physiology. However, conscious feelings are often expressed in language and it is the language that shapes our understanding of a particular emotion. Direct physical experience is not given only by the circumstances that we have a body of a certain type. We have to understand that every experience is happening on the very complex background of cultural presuppositions. (Lakoff, et al., 1980 p. 75)

2.4 What has conceptual metaphor theory to say about emotion?

Emotions are very often misunderstood of as feelings without any conceptual content. This view is wrong. Not only that we have an emotion, we understand it through a particular concept. When we act on the basis of our emotion, we do not act only on the basis of this feeling that accompany the emotion but also on the basis of our understanding of it (Lakoff, 1987). The concepts of emotions seem to be very abstract but are not at all arbitrary and they have a very clear basis in our embodied experience.

Feelings are signals of what is happening to the body when it is being changed by an object. They are representations of emotions. Consciousness is a feeling accompanying the perception, whether it is a perception of the external object or a perception of own body image. It is the knowledge that we perceive, that the body has been changed by the object, that it has reacted to it (Damasio, 1999). In humans, this feeling of what happens is usually accompanied by a constant narrative, it is easily without any effort translated into language, an inner dialogue. Words and sentences denote "entities, actions, events, and relationships. Words and sentences translate concepts, and concepts consist of the non-language idea of what things, actions, events, and relationships are." (Damasio, 1999 p. 185)

Therefore, the way we talk about emotions provides a complex picture of emotion that corresponds to what human beings consciously feel when they experience an emotion. "If we want to see what our 'conscious feelings' involve, we have to take our language and our folk theories about emotions seriously." (Kövecses, 2000 p. VIII)

There is no precisely defined conceptual structure that would arise out of our emotional functioning. However, there exist systematic correspondences between our emotions and our sensory-motor experience that form the basis for the orienting conceptual metaphors.

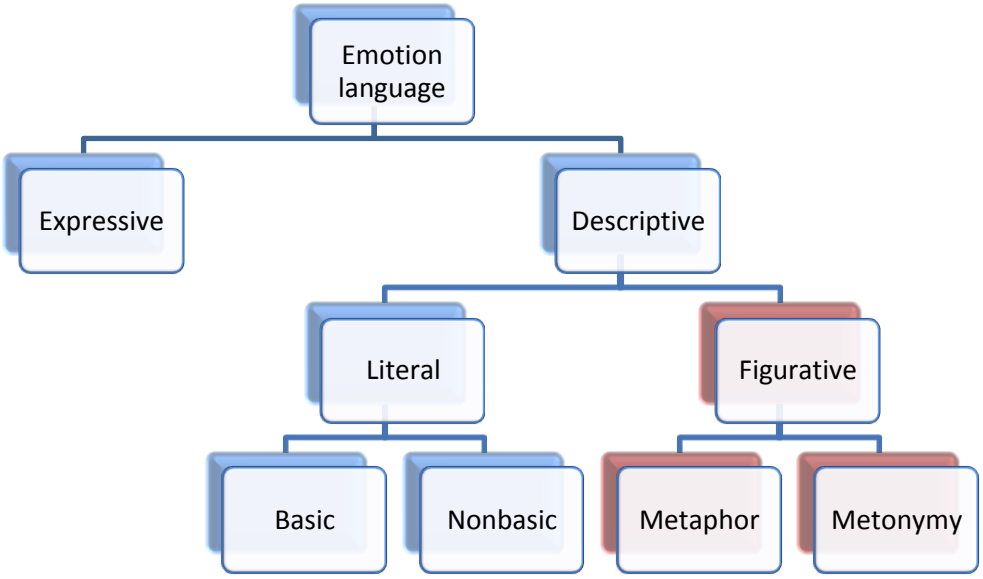
We have a tendency to structure less concrete and inherently vaguer concepts such as emotions on the basis of more concrete concepts that are better-defined in our experience. (Lakoff, et al., 1980 p. 128)

The way we consciously understand our emotions intertwines by a large part with language that we use when talking about them. While it may or may not be correct to talk about culture-specific emotions, culture-specific concepts of emotions are definitely plausible to exist.

Part II – Case studies

Emotional language should not be seen only as a collection of literal words that categorize and refer to a preexisting emotional reality, but as language that can be figurative and that define and even create emotional experiences for us. Words such as *anger, love, pride, fear* constitute only small fraction of our emotional language.

The following schema provides a quick overview how emotional terms are organized according to Kövecses (2000).



Although these emotional terms have interesting categorical structure by themselves, forming hierarchies and groups, this analysis exceeds the range of this thesis' topic. Therefore, we will only deal with the figurative expressions and their structure.

3 Goal and Methodology

3.1 Goal

The main aim of this thesis is to investigate the structure of emotional concepts in Slovak language and compare it with already well-documented models from the other languages, particularly from English. This study was motivated by following questions which we will try to tackle in Chapter 4:

- What is the relationship between culture and the conceptualization of emotion through language?
- Does the conceptualization of emotions vary with different cultures?
- If it varies, are the variations without any constraints?

The other goal is to explore how emotions are organized in our conceptual system. These issues form the main topic of the Chapter 5:

- Are they organized as an overarching unitary system or as separate systems?
- What are the metaphors that we use for describing emotions in general and which of them are emotion-specific?
- Are there any structural overlaps?

For our analysis we chose 6 emotions that are relatively well represented in Slovak language as well as in English. These are:

- Anger
- Fear
- Happiness
- Sadness
- Pride
- Shame

3.2 Methodology

In our analysis, we used the cognitive linguistic framework within the tradition that was established in the 1980s by the work of George Lakoff (Lakoff, 1987; 1980), Mark Johnson (Johnson, 1987; 1992), Mark Turner (Turner, 1987), Ray Gibbs (Gibbs, 1994), Zoltán Kövecses (Kövecses, 2000), and others.

We will search for the sources of conceptual metaphors mapped into the expression of emotions commonly used in Slovak language.

We processed the expressions in two ways:

1. We categorized the expressions used with the selected emotions into the system of conceptual metaphors.
2. We used corpus statistics to analyze the frequencies of collocation of different concexts with each of the selected emotions.

3.2.1 Metaphor categorization

To acquire the most complete list of expression possible, that are related to the concepts of selected emotions, we used three types of linguistic sources of metaphors.

1. National corpus (2007)
2. Dictionaries of phrases
3. Common expressions from everyday discourse

The computerized Slovak National Corpus was used with the user interface Bonito (version 1.49), which contains 3 214 612 words and 2 139 956 lemmas[5]. The metaphors were searched by specific queries. Since Slovak language uses inflection, it was necessary to find appropriate inputs that would maximize the chance for a word to be involved in metaphor whether it is a noun in any

[5] Lemma refers to the particular form that is chosen by convention to represent the lexeme. Lexeme stands for all the forms that have the same meaning.

case or a verb. The software returned fragments of sentences, each containing the searched word or the word root with the context of 30 preceding characters and 30 following characters. An example of the KWIC concordance is illustrated in Figure 1. These lists were filtered to a sample of 1000 random concordances to reduce the number of citations (some of them originally contained more than 20 000 entries). Afterwards, the sample was examined and relevant expressions were manually filtered out, saved in separate file and categorized into various conceptual metaphors.

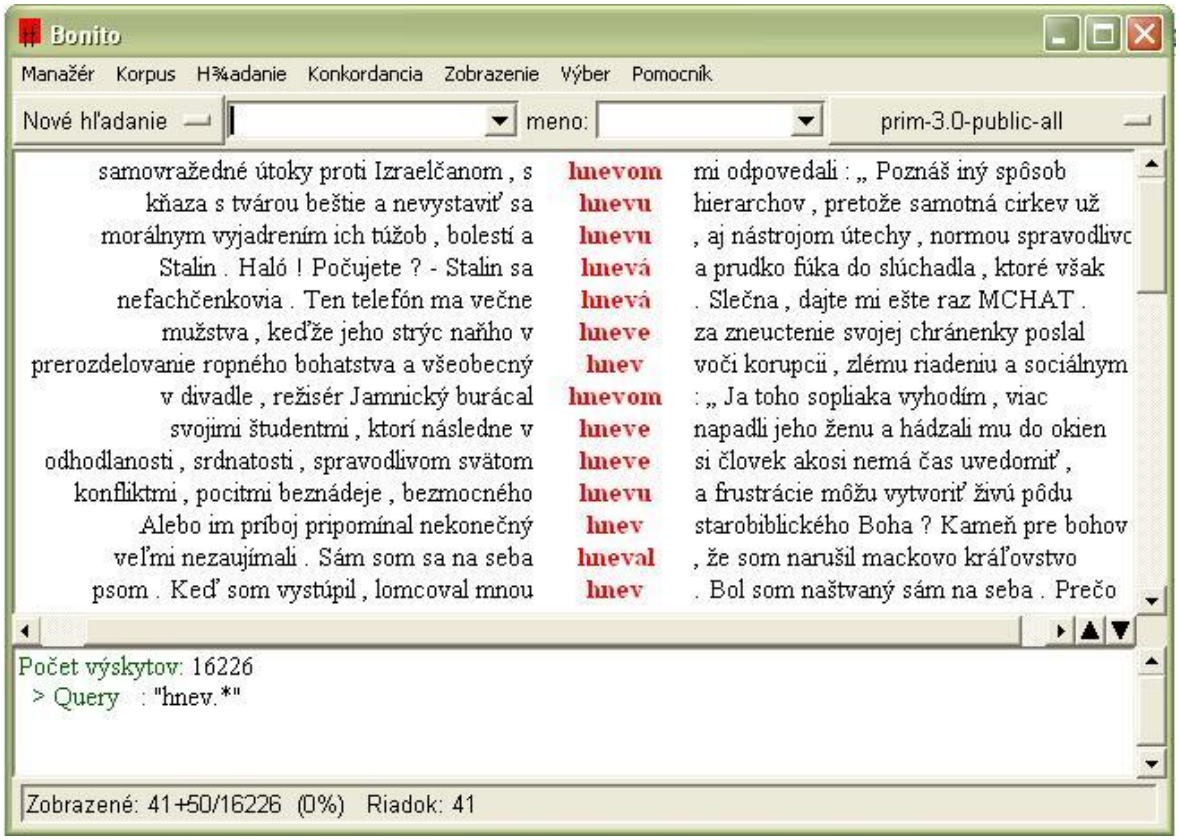


Figure 1: Extract of the KWIC concordance for anger

Apart from the search within the National Corpus we decided to use also the dictionaries of phrases (Dopjerová-Danthine, 2002; 2006; Fronek, 2003; Habovštiaková, 1996; Kvetko, 1991; Smiešková, 1989; Trup, 1994). The idea was to come across the expressions that we would not otherwise find by the search in the corpus because they do not necessarily contain the word or

the root of the word related to a particular emotion. Moreover, in the case of Slovak-English dictionaries, it offered a direct comparison of the used expressions.

All the results were compared to the English equivalents. Sometimes we did not find a direct equivalent in Slovak neither in the Corpus nor in the dictionaries of phrases, but the expression was easily conceivable in Slovak. In this case we used the third source – common expressions from everyday discourse.

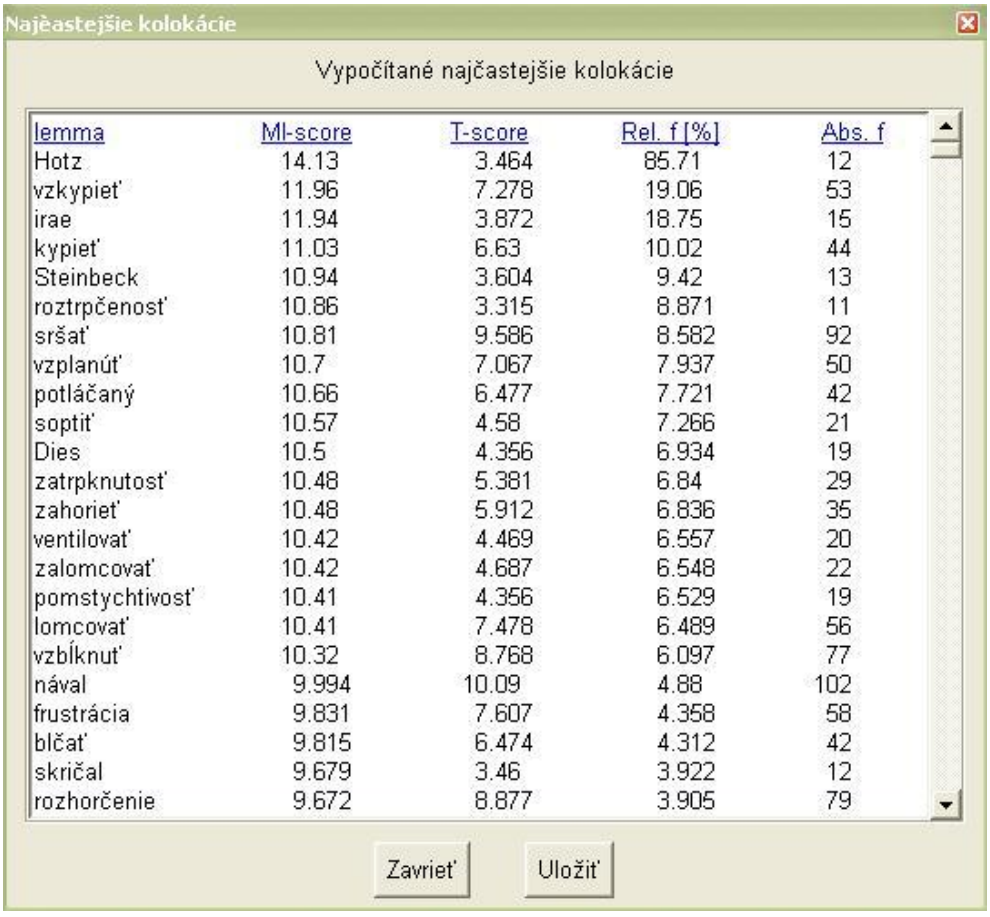
3.2.2 Collocation analysis

To check for the frequency of the expressions connected to each emotion we used the function of the National Corpus search software, which calculates the most frequent collocations in the context according to these parameters:

- Attribute – searched expression (e.g. anger) - because Slovak is a highly inflected language, we searched for lemma instead of word.
- Context – number of words before and after the searched attribute (in our case we used <-5,5>)
- Minimal count in the corpus – statistics are calculated only for words that appear in corpus more than 10 times
- Minimal count in the range – only words with count >10 in the context will be displayed

The collocation statistics returns most frequent collocations (in relative or absolute measures) with their MI-score (mutual information)[6] and T-score[7] of the word and the concordance, relative count (how many percents of the word occurrences in corpus happen to be in a given context) and absolute count (how many time did the word appeared in a given context).

The results of the collocation statistics were then manually filtered from non-relevant data and sorted according to metaphor relevance.



lemma	MI-score	T-score	Rel. f [%]	Abs. f
Hotz	14.13	3.464	85.71	12
vzkypieť	11.96	7.278	19.06	53
irae	11.94	3.872	18.75	15
kypieť	11.03	6.63	10.02	44
Steinbeck	10.94	3.604	9.42	13
roztrpčenosť	10.86	3.315	8.871	11
sršať	10.81	9.586	8.582	92
vzplanúť	10.7	7.067	7.937	50
potláčaný	10.66	6.477	7.721	42
soptiť	10.57	4.58	7.266	21
Dies	10.5	4.356	6.934	19
zatrpknutosť	10.48	5.381	6.84	29
zahorieť	10.48	5.912	6.836	35
ventilovať	10.42	4.469	6.557	20
zalomcovať	10.42	4.687	6.548	22
pomstychtivosť	10.41	4.356	6.529	19
lomcovať	10.41	7.478	6.489	56
vzbĺknuť	10.32	8.768	6.097	77
nával	9.994	10.09	4.88	102
frustrácia	9.831	7.607	4.358	58
blčať	9.815	6.474	4.312	42
skričal	9.679	3.46	3.922	12
rozhorčenie	9.672	8.877	3.905	79

Figure 2: Most frequent collocations for anger

[6] Mutual information is a quantity that measures the mutual dependence of the two variables.

[7] T-score is defined by t = [x - μ] / [s / sqrt (n)] where x is the sample mean, μ is the population mean, s is standard deviation of the sample, and n is the sample size.

4 Conceptual metaphors of emotions

Before Kövecses and Lakoff (1987) began to investigate the figurative language of emotion it was hard to conceive any systematic structure out of presumably arbitrary images among very diverse expressions referring to emotional experience. However, looking closer they discovered a coherent conceptual structure forming the basis for these expressions, which are mostly of metaphorical or metonymical nature.

Many expressions of figurative language use the folk theories about physiology of emotion. Together with other metaphors that are not used only in emotional context (such as BODY IS CONTAINER or STATES ARE SUBSTANCES), the metonymies derived from folk understanding of emotion physiology form more complex systems of metaphors. We will discuss these in the following case studies.

First, we present a brief overview of the theoretical view on the emotion concept followed by our analysis of the conceptual metaphor structure in Slovak. We note the differences between English and Slovak conceptualization, when they appear. At the end of each study we include the results from the collocation analysis.

4.1 Anger

From an evolutionary perspective, anger has the function of energizing the person for defense that results a general discharge of the sympathetic nervous system that activates the “flight-or-fight system” in primates and other animals. Psychologically, it is aimed at the correction of perceived wrong. This emotional state may range in intensity from mild irritation to intense fury and rage. Anger has physical effects including raising the heart rate and blood pressure and the levels of adrenaline and noradrenaline. The overall function is to mobilize the body for an immediate action. (Strongman, 2003)

Anger is perhaps the most studied emotion concept from a cognitive semantic point of view. It was extensively described in (Lakoff, 1987) and characterized by a number of metaphorical source

domains. Apparently it was not by chance that Lakoff and Kövecses chose this emotion for their case study as its conceptual structure is very rich reflecting a complex folk model of this emotion. Comparing the number of expressions either in National Corpus or in dictionaries of phrases, *anger* seems to be far most structured concept among the emotional concepts.

Many of the expressions of figurative language use folk theories about physiology of emotion. In the case of anger it involves:

- Increased blood temperature
- Increased blood pressure
- Shivering
- Other physiological distress (problems with accurate perception, fainting)

When we talk about emotions we use these symptoms to refer to an emotion as such. This creates a system of metonymies for anger:

HEAT/FIRE

- Schladiť svoju *horúcu hlavu* (to cool one's hot head)[8]
- Sálal z neho hnev (he was radiating anger)
- Blčala hnevom (she was flaring with anger)
- Bol rozpálený hnevom. (He was red-hot with anger)

CHANGED COLOUR

Red is the color most associated with anger. In folk theories, flushing face is the result of increased temperature or pressure: red color metonymically represents anger.

- Očervenela hnevom. (She turned red with anger)
- Tvár mu zbrunátnela od hnevu (His face flushed with anger)

[8] In the case studies, we will use the literal translation. If the meaning of the English equivalent is very different and does not correspond clearly to the literal translation, it will be followed by an English idiom with the closest meaning.

However, we also found some associations with other colors that are not that common:

- Bol žltý od hnevu (He was yellow with anger)
- Tvár jej potemnela (Her face darkened with anger)
- Bledne od hnevu (He goes pale with anger)
- Osinela od hnevu (She turned grey/blue)
- Zmodrel od hnevu (He turned blue)

SHIVERING

Another physiological symptom of anger in folk theory is shivering:

- Celá sa triasla od hnevu (She was shivering with anger)
- Chvel sa od zúrivosti (He was quivering with rage)

OTHER PHYSIOLOGICAL DISTRESS

Anger is often associated with loss of clear vision, or other senses impaired, sometimes even loss of consciousness or ability to move:

- Zaslepil ho hnev (Anger blinded him)
- Mala oči zastreté hnevom (She got her eyes covered by anger)
- Bol omráčený hnevom (He was knocked out by anger)
- Bola paralyzovaná hnevom (She was paralyzed with anger)
- Bol bez seba od rozčúlenia (He was without himself. – He was beside himself)
- Bol spitý hnevom (He was drunk with anger)
- Skoro vyletel z kože (He almost flew out of his skin)

These metonymies reflect the basic folk model of physiology of emotion and, apparently, also some aspects of the real physiology of anger. The results of Paul Ekman and his group (Ekman, et al., 1983) show that they correspond closely. When people experience fear, their temperature and blood pressure really rises.

BODY IS CONTAINER

- Sú ako nádoby hnevu. (They are like anger containers)
- Bola plná hnevu. (She was full of anger)

The emotional state of anger is metaphorically represented by **SUBSTANCE** in the **CONTAINER.**

This substance can be solid, liquid or vapor and it can have different temperatures.

SOLID

Anger can stack up; we can move it, transform it or "remelt" it as a **METAL**.

- Nahromadený hnev. (Stacked up anger)
- Preniesol som svoj hnev na niekoho iného. (I moved my anger to someone else)
- Premenil hnev na činy (He transformed his anger into action)
- Pretavovala hnev v energiu (She "remelted" her anger into energy)

LIQUID

- Vylieval si na ňom hnev. (He poured out anger on him)
- Oblieval ju hnev. (She was flushed with anger)
- Tečú mu nervy. (His nerves are leaking)
- Presiakol ju hnev. (She was soaked in anger)
- Jej hnev bublal. (Her anger bubbled)
- Jej hnev klokotal. (Her anger chuckled)

The most common metaphoric fluid for anger is either blood or gall.

- Má srdce naplnené hnevom. (His heart is filled with anger)
- Vzkypela v ňom krv, vzbúrila sa v ňom krv. (His blood was seething)
- Krv sa jej pení. (Her blood was churning)
- Žlč sa jej rozliala. (Her gall was overflowing)
- Vyliať si na niekom žlč. (To pour out gall on someone)

When we combine the metonymy of increasing temperature with the metaphor of fluid in container we get:

ANGER IS HOT FLUID

As temperature of the fluid (intensity of anger) raises, the fluid starts to simmer and boil:

- Búri / pení / vrie / sa v nej žlč. (Her gall is boiling)
- Vzkypela krv, vzbúrila sa v ňom krv. (His blood boiled)
- Jeho hnev vyvrel. (His anger welled up)

When the intensity of anger rises, the fluid level raises:

- Hnev sa vo mne vzdúval. (The anger is upheaving in me)
- Dvíha sa v ňom hnev. (The anger is raising in him)
- Jeho hnev dosiahol vrchol. (His anger reached the top)
- Čaša trpezlivosti pretiehla. (The cup of his patience brimmed over)
- Jej hnev vytryskol. (Her anger sprang)
- Jeho hnev vyrazil na povrch. (His anger spurt up on the surface)
- Jeho hnev tryská zo sopky, soptí hnevom. (His anger is erupting. – He was fuming)

And when the temperature rises, fluid becomes vapor or steam:

- Jeho hnev vyprchal. (His anger evaporated)
- Vyventilovala svoj hnev. (She ventilated her anger)

Steam can increase the pressure in the CONTAINER. This metaphor is much better represented in English. We were not able to find corresponding expressions in Slovak:

- She got all steemed up.
- He was blowing off steam.

However, the eventual blow resulting from increased pressure has the same consequences:

- Skoro praskla od hnevu. (She almost burst with anger)
- Vybuchol od hnevu. (He exploded)
- Išlo ho roztrhať / rozhodiť od hnevu. (He was about to blow out)
- Pôsobilo to ako rozbuška. (It worked as a detonator)

ANGER IS HOT FLUID IN A CONTAINER is the central metaphor that Lakoff and Kövecses identified in English (Lakoff, 1987) and its basic structure is the same for both, English and Slovak.

SOURCE – HOT FLUID IN A CONTAINER	→	TARGET - ANGER
Container	→	Body
Temperature / fluid level	→	Intensity of anger
Temperature of the fluid / container	→	Body temperature
Pressure in the container	→	Blood pressure
Simmer of fluid	→	Shivering of the body
Explosion	→	Loss of self-control
Cold / still fluid	→	Absence of anger
Destination of the journey	→	Goals of the relationship

In the case when we use the metaphor ANGER IS INCREASED TEMPERATURE for solid substances, we get the following metaphor:

ANGER IS FIRE

- Vzplanul / vzbĺkol / rozhorel sa hnevom. (He flared up with anger)
- Spaľoval ju hnev. (She was burned down by the anger)
- Blčal / horel / sršal hnevom. (He was burning with anger)
- Roznietil / rozdúchal svoj hnev. (His anger kindled)
- Jeho hnev plápolá / tlie (His anger is smoldering)
- Zapálil prvé iskierky hnevu. (He lit up the first sparkles of anger)

- Prilieva olej do ohňa. (Add fuel to the flames)
- Zahasila svoj hnev. (She put out her anger)
- Dusil v sebe hnev (he put out / smothered the anger)

Instead of accentuating the gradual build up of anger and loss of control as the central metaphor of HOT FLUID IN A CONTAINER, this metaphor stress out the reason of anger, its intensity and duration. (Lakoff, 1987)

SOURCE – FIRE	→	TARGET - ANGER
Fire	→	Anger
Burning substance	→	Angry person / anger
The origin of fire	→	The origin of anger
Intensity of fire	→	Intensity of anger
Physical damage by fire	→	Mental damage to person

We can see the correspondences here:

- Substance (wood) can smolder for some time and then suddenly flare up → people can be up annoyed for some time and then suddenly get angry
- Fire is dangerous for the nearby things → angry people are dangerous to others
- Things on fire can't be used in their normal way → angry people can not act in normal way

Another metaphor, **ANGER IS INSANITY**, adopts the folk theory that, when angry, we are not thinking quite clearly and behave out of normal:

- Posadol ho amok. (He went berserk)
- Stratila nervy. (She lost her nerves)
- Mal šialený záchvat hnevu. (He went into an insane rage)

- Doháňaš ma k šialenstvu. (You are driving me nuts)

ANGER IS OPPONENT emphasizes human struggle to control and overcome anger:

- Zvíťazila nad hnevom. (She conquered her anger)
- Zmocnil sa ma nekontrolovateľný hnev. (Uncontrollable anger took control of me)
- Ovládol, premohol ma hnev. (I was overcome by anger)
- Lomcoval ním ľúty hnev. (Unkind anger was shaking him)
- Zachvátil ju hnev. (She was seized by the anger)
- Nevie prekonať svoj hnev. (She cannot overcome her anger)

Similar metaphor is **ANGER IS SOCIAL SUPERIOR**:

- Diktoval mu to hnev. (It was dictated by his anger)
- Hnev vládne. (Anger rules)
- Spútaní hnevom. (Handcuffed by anger)

Another metaphor dealing with control is **ANGER IS ANIMAL** which likens a person that lost his or her temper to an animal that represents a danger to the others:

- Vybičovaný hnev. (Scourged anger)
- Drž svoj hnev na uzde. (Hold your anger's reins)
- Zadrž svoj hnev. (Hold your anger back)
- Prebúdzala sa v ňom zlosť. (His ire awakened)
- Besniaci hnev. (Rampaging anger)
- Snažili sa krotiť svoj hnev. (They tried to tame their anger)
- Popustil uzdu hnevu. (He let the rein of anger loose)
- Rozzúrený ako býk. (Angry as a bull)

In English, these expressions are not specific for any particular animal. In Slovak most expressions refer to horse or bull.

Slovak also very often uses the references to the cycle of plant growth.

ANGER IS PLANT / CROP:

- Zasadila hnev. (To plant the anger)
- Splodila hnev. (To produce / conceive the anger)
- Zárodky hnevu. (Germs of anger)
- Hnev klíči. (Anger sprouts)
- Jeho hnev rástol. (His anger grew)
- Žala hnev. (She harvested anger)

Anger (also many other emotions) is very often conceptualized as a **FORCE** that we can hardly influence.

ANGER IS NATURAL FORCE:

- Odvrátila jeho hnev. (She averted his anger)
- Ich hnev sa obrátil proti nej. (Their anger turned against her)
- Hnev smeroval na neho. (Anger was heading towards him)
- Hnev ním zmietal ako víchrica. (He was storm-beaten by his anger)
- Hnev opadol. (Anger subsided)
- Príliv / vlna hnevu. (Tide / wave of anger)
- Zmietal sa v neskrotnom vlnobití hnevu. (He was tossed by the wild surge of anger)

ANGER IS ENERGY:

- Napätá pružina môjho hnevu sa uvoľnila. (Tensed string of my anger was pulled-off)
- Vybil svoj hnev. (He discharged his anger)
- Začala svoj hnev transformovať do… (She started to transform the anger into…)

Some other metaphors that may be used in both Slovak and English:

ANGRY BEHAVIOR IS AGGRESSIVE ANIMAL BEHAVIOR: Nevrč na mna! (Don't snarl at me!)

THE CAUSE OF ANGER IS TRESSPASSING: Prekročil si medze. (You crossed the line)

AN ANGRY PERSON IS A FUNCTIONING MACHINE: To ho nakoplo. (That got him going)

ANGER IS UNPLEASANT FOOD: Prehltol som svoj hnev. (I swallowed my anger)

ANGER IS BURDEN: Vláči so sebou svoju zlosť. (He carries his anger around with him)

In English one other metaphor was identified by Lakoff and Kövecses we could not find in Slovak, which is **THE CAUSE OF ANGER IS PHYSICAL ANNOYANCE**: He's pain in the neck.

In Slovak, ANGER is very often associated with the ***DEVIL***:

- Čerti ho berú. (Devils are dragging him. – He is very angry)
- Diabol doňho skočil. (Devil jumped into him. – Anger got into him)
- Rozčertiť sa. (To „devil out". – to have back up)

Each of these metaphors stress different aspect of the concept of anger. In Slovak, the metaphors that accentuate the loss of control seem to be more elaborate than in English. This is apparent especially with the metaphors ANGER IS NATURAL FORCE, where we often conceptualize anger as either STORM or TIDE, and ANGER IS ANIMAL, where in the majority of the cases anger is represented as HORSE that needs to be tamed or held back. Other specificity is that Slovak very often use the image of the devil to describe anger which is not very common in English.[9]

[9] DEVIL can be used to express a severe reprimand or anger: "He gave me the devil for cutting glass". However, DEVIL is normally associated more with annoyance than anger.

The analysis of collocation (see methodology) turned out that anger appears most frequently in these contexts (in absolute numbers of instances):

Number of instances	Metaphor	Example
1525	ANGER IS (HOT) FLUID	Vybuchol hnevom. (He exploded)
601	ANGER IS MADNESS	Zachvátil ju šialený hnev. (She went mad)
532	ANGER IS FIRE	Hnev v nej ešte tlel. (Her anger was still kindling)
430	ANGER IS OPPONENT	Premohol ho hnev. (His anger overruled him)
417	ANGRY PERSON IS A DOG	Zavrčal od hnevu. (He growled with anger)
178	ANGER IS SHIVERING	Triaslo ho od hnevu. (He was shivering with anger)
161	ANGER IS ANIMAL	Drž svoj hnev na uzde. (Keep the reins of your anger)
142	ANGER IS ENERGY	Vybil si na nej hnev. (He discharged his anger on her)
142	ANGER IS REDNESS	Očervenela od hnevu. (She turned all red with anger)
73	ANGER IS CHANGE IN COLOR	Zbledla od hnevu. (She turned pale with anger)
70	ANGER IS SPARKLE	Zablysol mu v tvári hnev. (Anger sparkled in his face)
47	ANGER IS SOCIAL SUPERIOR	Hnev mal nad ním vládu. (His anger ruled over him)
35	ANGER IS BLIDNESS	Bol úplne zaslepený hnevom. (He was blinded with anger)
35	ANGER IS BITTER / GALL	Kypí mu žlč. (His gall is simmering)

4.2 Fear

Fear is an emotional response, which is set off by a perceived danger. Similarly to anger, it is characterized by the activation of sympathetic nervous system, and it represents the "flight" response on the flight-or-fight scale.

The basic physiological effects include:

- Muscles are tightened and oxygenated to prepare for flight
- Blood is moved from the viscera to peripheral parts of the body
- Increased heart rate
- Sweating
- Freezing behavior
- Jumping in the case of unexpected stimulus

Similarly to the first case study with anger, FEAR is conceptualized as FLUID IN CONTAINER:

- Bola plná strachu. (She was full of fear)
- Vlial sa do neho strach. (The fear poured into him)
- Atmosféra bola presiaknutá strachom. (The atmosphere was soaked with fear)

However, this metaphor is not central to our understanding of fear. We tend to conceptualize it by various conceptual metonymies. The physiological aspect of fear is highly involved in the concept of fear. The most prominent metonymies are these:

- Triasť sa ako huspenina. (To shake as jelly. - pudding)
- Chvela sa od strachu. (She was trembling with fear)
- Hrdlo mu zovrelo strachom / má srdce v hrdle. (He has bumb / heart in his throat)
- Strach ma veľké oči. (Fear has big eyes)

Some others use some of animal fear reactions rather than human:

- Ježiť srsť. (To bristle one's fur)

- Stiahnuť chvost. (To pull down the tail)

Although fear usually triggers the reaction of sympathetic nervous system (SNS) that has a function to energize the body for avoiding the danger as quick as possible, sometimes, when there is no escape route, we can observe "paradoxical fear". The typical reaction is not mere activation of SNS but also massive activation of some parts of parasympathetic nervous system (PSNS) that cause freezing behavior and loss of control over urination and defecation.

FEAR IS PARALYSIS OR OTHER PHYSICAL DISTRESS

- Bola paralyzovaná / omráčená strachom. (She was paralyzed with fear)
- Bol stŕpnutý / stuhnutý od strachu. (He was numb with fear)
- Zdrevenela / skamenela strachom. (She turned to wood / stone)
- Onemela od strachu. (He went mute with fear)
- Mal plné nohavice strachu. (He had his pants full of fear)
- Pomočil sa strachom. (He wetted his pants)

Turning pale is typical for fear reactions (Vaňková, et al., 2005 p. 209) and it is associated with "freezing" of the blood. Freezing liquid is a representation of passivity of fear in of our folk theory. This reaction is caused by veins in skin constricting to send more blood to major muscle groups. This is also responsible for the "chill" sometimes associated with fear as there is less blood in the skin to keep it warm.

- Zbledol ako stena. (He turned as pale as a wall)
- Bol zelený strachom. (He was green with fear)
- Krvi by si sa v ňom nedorezal. (His blood was so thick, you could not cut it)
- Tuhne / mrzne mu krv v žilách. (His blood goes thick / freezes.)

It is surprising how accurate our folk theory may be in case of thickening of the blood because it was proved that fear can actually make blood clot (Geiser, 2008).

Tensing of the muscles is responsible for goose bumps. When tiny muscles attached to each hair on surface of skin tense up, the hairs are forced upright, pulling skin with them.

- Zimomriavky mu behajú po chrbte. (He's got goosebumps on his back)
- Oblial ho studený pot. (He broke out in cold sweat)

In our folk theory we often associate extreme fear with losing consciousness or even death. It is indeed true that intense psychological stress can result in heart failure (Milne, 2002):

FEAR IS ILLNESS:

- Bola celá chorá od strachu. (She was sick with fear)
- Bola bez seba strachom. (She was beside herself with fear)
- Zamdlel od strachu. (He fainted from fear)
- Umierala od strachu. (She was dying of fear)

Among the metaphors that characterize our concept of fear, the most prominent are those that accentuate loss of control over the fear:

FEAR IS SOCIAL SUPERIOR

- Panuje / zavládol tu pocit strachu. (The fear rules here)
- Ovláda ho strach. (He's governed by fear)
- Zmocnil sa jej strach. (Fear took hold of her)
- Strach ho núti… (Fear forces him to…)

FEAR IS TORMENTOR

- Mučil ma strach. (The fear tortured me)
- Spútal ma strach. (Fear tied me up)

FEAR IS OPPONENT

- Čeliť strachu. (To confront one's fear)
- Premohol / prekonal / strach. (He overpowered his fear)

- Zvíťazilia nad strachom. (She conquered her fear)

FEAR IS NATURAL FORCE

- Lomcoval / zmietal ním strach. (The fear tossed him)

FEAR IS HIDDEN ENEMY / PERSECUTOR:

- Prenasledoval ho strach. (Fear went after him)
- Chytal ju strach. (Fear chased her)
- Strach sa ticho zakrádal. (Fear crept quietly)

Another way to emphasize the loss of conscious control over your behavior is the use of the metaphor **FEAR IS INSANITY** or **FEAR IS DECEPTION**:

- Bola šialená strachom. (He was mad with fear)
- Bol priam posadnutý strachom. (He was possessed by fear)
- Ja sa zbláznim od strachu. (I will go crazy with fear)
- Boli hypnotizovaní strachom. (They were hypnotized by fear)

Unpleasantness of fear is expressed by the metaphor **FEAR IS BURDEN**:

- Doľahol na nich strach. (Fear weighed heavily on them)
- Bola obťažkaná strachom. (She was heavy with fear)

Fear, as well as many other emotions, is referred to as a **LIVING THING**, human, animal or plant:

- Rodí sa v nej strach. (Fear is being born in her)
- Sadia / sejú / plodia strach. (They seed fear)
- Udomácnil sa u nich strach. (Fear naturalized at their home)

Within our results, we also discovered some expressions that are not mentioned among metaphors used in English. We were not able to confirm whether these expressions exist in English in the context of talking about fear.

Fear is usually associated with the sensation of coldness and heaviness so it is unusual that we found metaphors referring to FIRE and AIR. These are rather opposite to the basic metonymies that refer to physiological reactions of fear, which conceptualize fear as cold and heavy. These are rather opposite to the basic metonymies that refer to physiological reactions of fear, which conceptualize fear as cold and heavy. This is an interesting case because it contradicts the basic conclusion of Kövecses that emotion cannot be conceptualized outside of the constraints imposed by universal physiology (Kövecses, 1990 p. 165). Our interpretation of this inconsistency is that the metaphor EMOTION IS FIRE may be central to our understanding of emotion in general and because of that fear has "inherited" this metaphor from the superordinate level which is common for all emotions. Even if it may not seem very natural in the context of fear but still is very natural for the EMOTION as a higher structure in the hierarchy of concepts.

FEAR IS FIRE

- Rozdúchal jeho strach. (He fanned his fear)
- Vyšľahli vo mne plamene strachu. (The flames of fear lit up inside me)
- Výbuch strachu ho prešiel. (He got over the explosion of fear)
- Záblesk strachu. (Sparkle of fear)

FEAR IS AIR

- Vanie z neho strach. (The fear blows of him)

The results from the collocation analysis are summarized in the following table sorted by the absolute number of co-occurrence or the lemma and the context in corpus.

Number of instances	Metaphor	Example
1200	FEAR IS PARALYSIS	Tŕpnuť strachom. (To go numb with fear)
940	FEAR IS FLUID / SUBSTANCE	Byť plný strachu. (To be full of fear)
798	FEAR IS SHIVERING	Triasť sa od strachu. (To shiver with fear)
764	FEAR IS SOCIAL SUPERIOR	Zmocnil sa ho strach. (He was seized by fear)
755	FEAR IS OPPONENT	Čeliť strachu. (Confront the fear)
519	FEAR IS ILLNESS	Pochytiť strach. Strach bol nákazlivý. (To catch the fear. The fear was contagious)
209	FEAR IS INSANITY	Bol šialený od strachu. (He was mad by fear)
140	FEAR IS NATURAL FORCE	Zmietal ním strach. (He was tossed by fear)
123	FEAR IS TORMENTOR	Mučil ho strach. (He was tortured by fear)
113	FEAR IS PLANT / CROP	Rozsievali strach. (They seeded the fear)
60	FEAR IS FIRE	Rozdúchal jeho strach. (He fanned his fear)
57	FEAR IS COLD	Zamrazilo ho strachom. (He freezed with fear)
40	FEAR IS HIDDEN ENEMY	Strach sa zakrádal. (The fear sneaked)
34	FEAR IS POISON	Bol otrávený strachom. (He got poisoned by fear)
19	FEAR IS CHANGE OF COLOR	Obelieť strachom. (To turn pale with fear)
37	FEAR IS DEFECATION	Pomočiť sa strachom. (To wet oneself with fear)

4.3 Happiness

Happiness is a very broad concept with rich meaning. It varies broadly in its intensity; it may range from mere contentment to euphoria. According to Webster dictionary (1913) happiness is:

1. Good luck; good fortune; prosperity.
2. An agreeable feeling or condition of the soul arising from good fortune or propitious happening of any kind; the possession of those circumstances or that state of being which is attended enjoyment; the state of being happy; contentment; joyful satisfaction; felicity; blessedness.
3. Fortuitous elegance; unstudied grace; -- used especially of language.

It is not easy to find a clear conceptual distinction between happiness ("šťastie" in Slovak) and joy ("radosť") so we decided to include both in our search queries and analysis.
In general terms, happiness is related to the state of balance or restoration of balance, absence of pain or state of euphoria. In the absence of threads or stress, the mind seems to open up to new ideas and facilitates creativity and exploration behavior. It is very difficult to distinguish which of these feelings we use in a particular situation when speaking about happiness.

Although they are not as important as in some other emotion concepts (e.g. fear), we do use metonymies referring to physical reactions of happiness / joy:

- Začervenala sa šťastím. (She blushed with happiness)
- Poskočil od radosti. (He jumped with joy)
- Chvela sa šťastím. (She was trembling with happiness)

In evaluating emotions, very important aspect is their spatial conceptual representation. Positive emotions are usually associated with the direction UP, and negative with DOWN. English speakers derive from this their central metaphor **HAPPY IS UP**:

- We had to cheer him up.

- Rastie až do neba od radosti. (She is growing high up to heaven with happiness)
- Byť na vrchole šťastia. (To be at the top of happiness)

In Slovak, this metaphor is not that prominent due to the lack of use of phrasal verbs in Slovak. However, another similar concept is well represented:

HAPPINESS IS BEING OFF THE GROUND:

- Vznášal sa v oblakoch. (He was floating in the clouds)
- Uletela na krídlach šťastia. (She flew on the wings of happiness)
- Bola v siedmom nebi. (She was in the seventh heaven. – She was on the cloud number 9)

Again, as with the previous emotions, we see the recurring theme of **(HOT) FLUID IN CONTAINER** with the expressions similar to those used in the central metaphor of anger. In fact, all of the following metaphors emphasize either the fluid aspect of happiness, its warmth or both:

- Prekypovala šťastím. (She was overflowing with happiness)
- Vybuchla radosťou. (He exploded with joy)
- Správy schladili jeho radosť. (The news cooled down his joy)

HAPPINESS IS FIRE:

- Blčal v ňom plamienok radosti. (The flame of his joy was burning)
- Sršala šťastím. (She was sparkling with happiness)

Related to fire, sparkles and flames is also radiance, light and glow. These are represented in metaphor **HAPPINESS IS LIGHT**:

- Celá sa rozžiarila šťastím. (She was glowing with happiness)
- Na jej tvári videl záblesk radosti. (He saw twinkle of joy on her face)

Happiness is also conceptualized as typical emotion metaphor of **NATURAL FORCE**. In this case it seems to be specifically referring to the natural element of a RIVER. This metaphor is quite

complex as it emphasizes not only the aspect of control over an emotion but also the source of the happiness and obstacles to the happiness.

HAPPINESS IS RIVER:

- Nič nemohlo zakaliť jej šťastie. (Nothing could mud her happiness)
- Jej radosť pramenila z… (Her joy sprang from…)
- Vlieva sa do nej radosť. (Joy flows into her)
- Zmietla ho vlna radosti. (He was tossed by the wave of joy)
- Hatilo to jej radosť. (It obstructed her happiness)

SOURCE –RIVER	→	TARGET - HAPPINESS
Clear water	→	Happiness
Muddy water	→	Spoiled happiness
Spring of water	→	Reason for happiness
Wave of water	→	Wave of happiness
Force of water	→	Intensity of happiness
Barrier / Dam	→	Obstacles to happiness

Opponent is one of the recurring metaphors with all emotion concepts. It is present also with happiness. This metaphor is ambiguous in concept of happiness. Sometimes we understand happiness as our opponent, as when we try to fight it because it might have bad consequences in the long run. Other time we emphasize the victory over some other forces, for example, bad circumstances.

HAPPINESS IS OPPONENT:

- Šťastie ju úplne premohlo. (Happiness overpowered her)
- Nakoniec zvíťazilo šťastie. (In the end, happiness won)

Very often we find the metaphor of **DIVIDED SELF**, where we understand soul and body as two separate entities, which may besome separated by the means of an emotion:

- Bol bez seba radosťou. (He was beside himself with joy)
- Skoro vyskočila z kože od šťastia. (She almost jumped out of her skin)

A metaphor very similar to the previous one also accentuates the loss of conscious control over our behavior and ability to think clearly:

HAPPINESS IS INSANITY:

- Išla sa zblázniť od šťastia. (She was about to go crazy with happiness)
- Stratil hlavu. (He lost his head)
- Mala šialenú radosť. (She was insanely happy)

In Slovak, happiness is very often conceptualized as something that can be given, shared, taken away, offered, a gift.

HAPPINESS IS GIFT:

- Rozdávala šťastie. (She was giving out happiness)
- Obdaroval ju šťastím. (He gave her happiness)
- Prijal šťastie. (He received happiness)
- Zriekla sa šťastia. (She renounced her happiness)

HAPPINESS IS FOOD / DRINK puts emphasis on the fact that happiness can come in different amounts (e.g. pinch, pile) and we can enjoy it as a good food either in small sips or big gulps:

- Vychutnávala si pocit šťastia. (She enjoyed the feeling of happiness)

There are also some other metaphors that are associated with happiness:

HAPPINESS IS PLANT / CROP:

- Zasiala / Žne štastie. (She seeds / harvests happiness)

Happiness shares the metaphor of **CAPTIVE ANIMAL** with other emotions but it also uses its specific metaphor of **AN ANIMAL THAT LIVES WELL**:

- Kroť svoju radosť. (Rein your joy)
- Bola šťastná ako prasa v žite. (She was happy as pig in rye)

The analysis of collocation returned these metaphors:

Number of instances	Metaphor	Example
5221	HAPPINESS IS GIFT	Obdarovala ho šťastím. (She gave him happiness)
2964	HAPPINESS IS FLUID IN CONTAINER	Zaliala ho radosť. (He was flushed with joy)
1651	HAPPINESS IS RIVER	Jeho šťastie pramenilo z... (His happiness rose from...)
1116	HAPPINESS IS LIGHT	Žiarila šťastím. (She was glowing with happiness)
715	HAPPINESS IS INSANITY	Zbláznim sa od šťastia. (I will go crazy from happiness)
504	HAPPINES IS FIRE	Vybuchol v nej ohňostroj šťastia. (The fireworks of happiness went off inside of her)
447	HAPPINESS IS FOOD	Vychutnala si svoju štipku šťastia. (She relished her pinch of happiness)
404	HAPPINESS IS OPPONENT	Premohla ju radosť. (Joy overpowered her)
181	HAPPINESS IS BEING OFF THE GROUND	Vznášal sa od šťastia. (He was floating with happiness)
119	HAPPINESS IS PLANT / CROP	Jej radosť kvitne. (Her joy bursts into bloom)
95	HAPPINESS IS REDNESS	Očervenela šťastím. (She flushed with happiness)
78	HAPPINESS IS CONTAGIOUS	Nakazil ju radosťou. (He infected her with his joy)
83	HAPPINESS IS SHIVERING	Chvela sa od šťastia. (She was shivering with happiness)
33	HAPPINESS IS ANIMAL	Zažívala bezuzdné šťastie. (She was experiencing happiness with no reins)

4.4 Sadness

Sadness is an emotion which is represented by the feelings of loss, loneliness and disadvantage. It is characteristic by the concentration of attention on the self and often social withdrawal and loss of energy. It is similar to sorrow, grief or melancholy. In fact, in Slovak the word for sadness "smútok" is synonymous to grief and sorrow, which have slightly different connotation in English.

As with all other emotions, in sadness we perceive the body or parts of the body (heart, head, eyes ...) to be a CONTAINER for an emotional state conceptualized as FLUID. Unlike the concept of anger, sadness is usually not characterized by the raising temperature or pressure within the container. More often, instead of violent discharge of the emotion (e.g. explosion), sadness is slowly dissolved.

SADNESS IS FLUID IN CONTAINER:

- Napĺňa ju smútok. (She is filled up with sadness)
- Vylial svoj žiaľ. (He poured out his grief)
- Jeho žiaľ vyprchal ako rosa. (His grief evaporated like dew)
- Srdce mu puká od smútku. (His heart is cracking of sadness)

The central metaphor of sadness is quite the opposite to the central metaphor of happiness. If **HAPPY IS UP** then **SAD** is definitely **DOWN**:

- Upadala na duchu. (Her spirit was sinking)
- Bola na dne. (She was at the bottom. – She was down)
- Prepadol sa do najhlbšej priepasti smútku. (He plunged into the deepest abyss of sadness)

The emotional state is also conceptualized as **FLUID** which is not inside the body but outside.
We get a very typical image of sadness of something deep and thick like a **SWAMP**. Connected with the central metaphor **SAD IS DOWN**, it creates the concept of **DROWNING** in sadness.

- Ponorili sa do hlbokého smútku. (They were sinking in deep sadness)

- Utápala sa v smútku. (She was drowning in sadness)
- Klesal v hustnúcom smútku. (He went down in thickening sadness)

Another metaphor that enhances the image of sadness pushing us DOWN is **SADNESS IS BURDEN** which is **HEAVY** and **DARK**:

- Zavalil ho smútok. (He was buried under his sadness)
- Vláčila svoj ťažký smútok. (She was pushing her heavy sadness around)
- Je mu ťažko od srdca. (He felt heaviness at the heart)
- Doľahla na ňu temnota smútku. (The darkness of sadness weighted heavily on her)

The concept of sadness shares a lot of metaphors with other emotions.

SADNESS IS ANIMAL: Držať vlčicu smútku na uzde.(To hold reins of sadness)

SADNESS IS NATURAL FORCE: Zaplavila ju vlna smútku. (The wave of sadness flooded her)

SADNESS IS OPPONENT: Podľahla smútku. (Shw succumbed to sadness)

SADNESS IS SOCIAL SUPERIOR: V rodine zavládol smútok. (The family was dominated by sadness)

SADNESS IS INSANITY: Bol bez seba smútkom. (He was besides himself with sadness)

SADNESS IS PLANT / CROP: Zakorenil sa v nich smútok. (The sadness enrooted in them)

SADNESS IS METAL: Ich smútok sa pretavil v hnev. (Their sadness was remelted in anger)

There are few specific metaphors that are rather rare:

SADNESS IS BIRD: V srdci sa mu zahniezdil smútok. (Sadness nestled down in his heart)

SADNESS IS CLOTH:

- Rozostrel sa pred ním smútok. (Sadness spread in front of him)
- Zahalil ich smútok. (Sadness veiled them)
- Obliekla sa do smútku. (She dressed up in sadness)

To summarize, apart from the metaphors that are common with other emotion, we tend to conceptualize sadness as **DARK HEAVY BURDEN** pulling us **DOWN** in **DEEP THICK FLUID** or various combination of these metaphors.

There were few minor metaphors that appear in English analysis (Kövecses, 2000) but we did not find their equivalents in Slovak:

SADNESS IS A LACK OF HEAT: Losing his father put his fire out.

SADNESS IS A LACK OF VITALITY: This was disheartening news.

The collocation analysis showed compatible results:

Number of instances	Metaphor	Example
555	SADNESS AS FLUID IN CONTAINER	Vlieval sa do neho smútok. (Sadness poured into him)
435	SADNESS IS DOWN	Ponáral sa stále hlbšie do smútku. (He was sinking lower and lower into sadness)
387	SADNESS IS DARK	Potemnel smútkom. (He darkened with sadness)
363	SADNESS IS OPPONENT	Premohol ju smútok. (Sadness conquered him)
293	SADNESS IS PAIN	Trpel mučivým smútkom. (He was suffering from agonizing sadness)
262	SADNESS IS CLOTH	Zahalil ho závoj smútku. (He was veiled with sadness)
123	SADNESS IS BITTER	Pocítil trpkosť smútku. (He felt bitterness of his sadness)
106	SADNESS IS BURDEN	Doľahla na ňu ťažoba smútku. (Sadness weighed heavily on him)
49	SADNES IS INSANITY	Šalela smútkom. (She went insane with grief)
42	SADNESS IS VAPOUR	Jej smútok sa rozplynul ako para. (Her sadness ended in smoke)
39	SADNESS IS DEAD	Rozhodla sa pochovať svoj smútok. (She decided to bury her sadness)
26	SADNESS IS LIGHT	Uvidel na nej záblesk smútku. (He saw a glimpse of sadness on her)
24	SADNESS IS HIDDEN ENEMY	Pomaly sa za ním zakrádal smútok. (Sadness was creeping on him slowly)
10	SADNESS IS ANIMAL	Snažil sa držať smútok na uzde. (He tried to hold the reins of his sadness)
10	SADNESS IS PLANT	Zasial do nich semeno smútku. (He planted the seed of sadness inside of them)

4.5 Pride

Pride is an emotion which is characterized by a strong sense of self respect. It usually represents the positive feelings triggered by an accomplishment of oneself or group, nation or object that the person identifies with. Sometimes it is also associated with the feeling of superiority or disdain of others.

Pride ("hrdosť" in Slovak) shares a lot of metaphors that are central to emotions in general and there are very few metaphors that are specific for pride. We also explored the related concept of vanity ("pýcha") which in Slovak overlaps with the English concept of pride.

The basic metaphor of PRIDE as a substance in a CONTAINER is very prominent here. However, it is not associated with HOT FLUID as in the case of ANGER or HAPPINESS but the substance used to mirror the effects of pride is AIR. This results in many conceptual metonymies where being proud is represented by being puffed up, big or swelling:

- Bol nadutý ako mechúr. (He was puffed up like a pouch)
- Hruď sa mu nadúvala hrdosťou. (His chest heaved with pride)
- Nakoniec praskla bublina jej pýchy. (Finally the bubble of her pride burst)
- Nafukovala sa hrdosťou. (She was bulging with pride)

The metaphors used also with other emotions are:

PRIDE IS FLUID IN CONTAINER: Naplnilo ho to hrdosťou. (It filled him with pride)

PRIDE IS FIRE: Vzbĺkla pýchou. (She lit up with pride)

PRIDE IS SOCIAL SUPERIOR: Ovládla ju hrdosť. (She was overruled by pride)

PRIDE IS ANIMAL: Kroťte svoju pýchu. („Tame" your pride)

PRIDE IS OPPONENT: Bojuje proti jej hrdosti. (He fights against her pride)

PRIDE IS NATURAL FORCE: Zaplavila ho hrdosť. (He was flooded with pride)

PRIDE IS LIGHT: Žiarila pýchou. (She was glowing with pride)

PRIDE IS FOOD: Prehltneme svoju hrdosť. (We will swallow our pride)

PRIDE IS INSANITY: Zachvátila ho šialená pýcha. (He was seized by mad pride)

PRIDE IS RAPTURE: Bol opojený pýchou. (He was intoxicated with pride)

An interesting concept that is very specific for pride in Slovak is the metaphor PRIDE IS DIRT, although it is pride more in its negative sense (vanity) in this case:

- Očisťuje sa od pýchy. (He's purifying himself from pride/conceit)

In these examples we have seen that PRIDE is a very ambiguous concept that can be perceived as very negative in case of pride/vanity but also as a source of great happiness. It is valued very positively when it is characterizing the "balanced" forms of pride.

Number of instances	Metaphor	Example
277	PROUD PERSON IS BIG	Nadúval sa pýchou. (He was stuck up with pride)
95	PRIDE IS FLUID IN CONTAINER	Naplnila ju hrdosť. (She was filled up with pride)
19	PRIDE IS LIGHT	Žiarili hrdosťou. (They were glowing with pride)
12	PRIDE IS SOCIAL SUPERIOR	Zmocnila sa ich nesmierna hrdosť. (They were seized by an immense pride)
10	CAUSING HARM TO PROUD PERSON IS CAUSING INJURY	Ranil jej hrdosť. (He injured her pride)

4.6 Shame

Shame is another emotion where several concepts seem to overlap. It can be defined as a large family of emotions: embarrassment, humiliation, shyness, failure or inadequacy. It is essentially a social emotion that results from evaluating our actions in social context and concluding that we have done something wrong (Strongman, 2003). The main function could be to the social pressure to avoid the situations that lead to this unpleasant state and regulate individual's behavior in society.

Although the mechanisms and neurophysiological correlates of shame are not yet known in details and there is no universal prototypical scenario across cultures that would precipitate the shame, the reactions seem to be triggered by the same "flight-or-fight" response that activates the body in fear and anger and causes typical stress response of blushing and sweating. That is why we often refer to shame by conceptual metonymy **ASHAMED PERSON IS BLUSHING**:

- Celá očervenela od hanby. (She turned all red with shame)

Shame is perceived as opposite emotion to pride. It is no surprise that we conceptualize **ASHAMED PERSON** as **SMALL**, which contrasts to metaphor **PROUD PERSON IS BIG**. Moreover, the natural reaction to shame is a strong desire to hide or disappear. This results in metaphor **SHAME IS HIDING AWAY FROM THE WORLD**:

- Scvrkol sa od hanby. (He shrunk with shame)
- Išiel sa prepadnúť pod zem. (He was about to fall through the floor)
- Umierala od hanby. (She was dying of shame)

The central metaphor for shame in English according to Holland and Kipnis (1995) is **SHAMEFUL PERSON IS PERSON HAVING NO CLOTHES ON.** This metaphor is quite common also in Slovak:

- Cítil som sa ako nahý. (I felt like being naked)

Similarly to the concept of pride, shame is even more often conceptualized as **DIRT** that needs to be washed away. Both might have the same origins with the Christian traditional understanding of sin where washing away the sins (e.g. during baptizing) expresses forgiveness:

- Zmyjeme našu hanbu. (We will wash away our shame)

There is also number of metaphors that are used in many other emotional concepts:

SHAME IS BURDEN: Drtí ho bremeno jeho hanby. (He's crushed below a burden of his shame)

SHAME IS SOCIAL SUPERIOR: Zmocnila sa jej hanba. (She was seized by shame)

SHAME IS PHYSICAL DISTRESS: Onemel od hanby. (He couldn't say a word from shame)

The collocation analysis confirmed these metaphors:

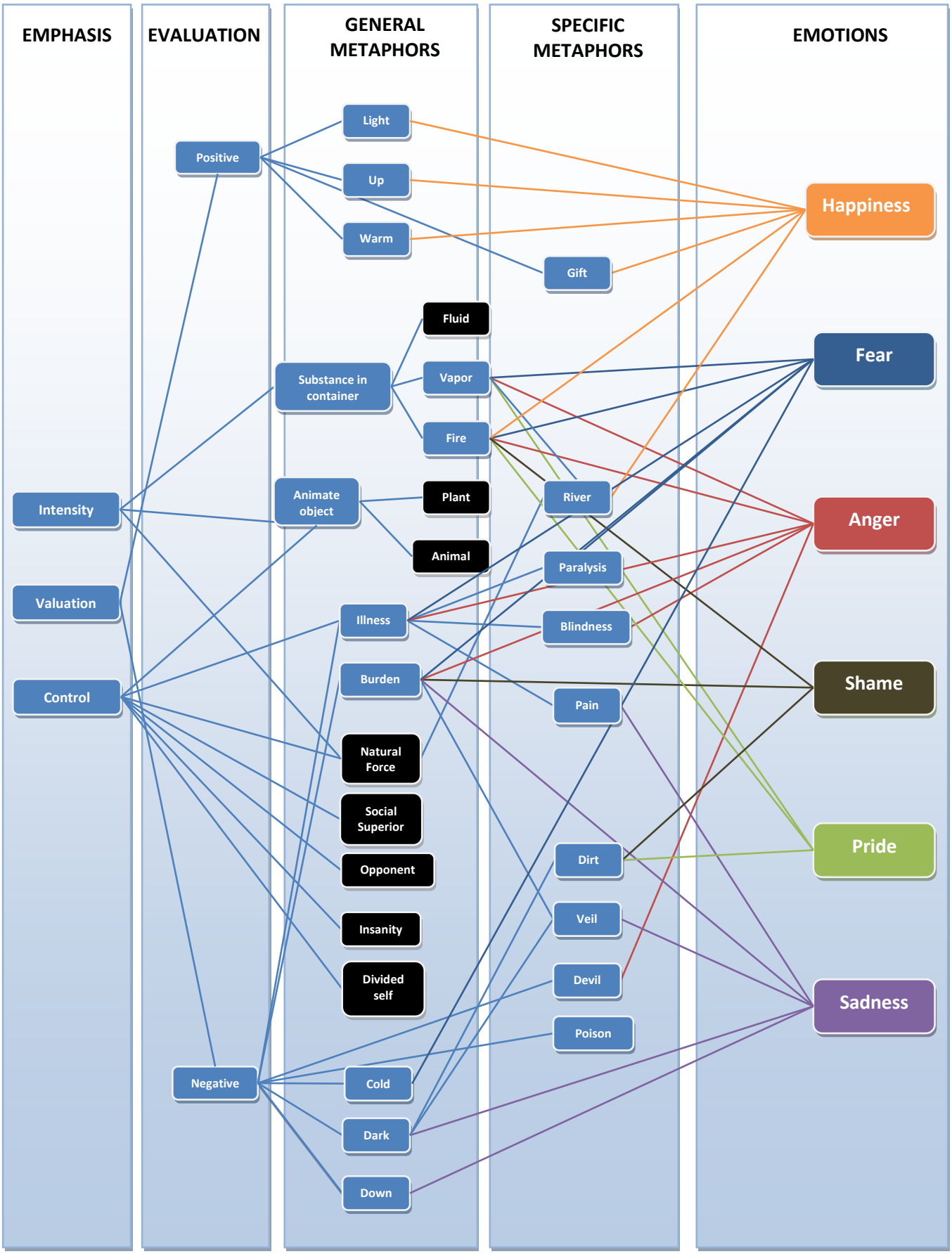
Number of instances	Metaphor	Example
245	ASHAMED PERSON IS BLUSHING	Očervenela od hanby. (She turned red from shame)
225	SHAME IS OPPONENT	Podľahla hanbe. (She gave in to shame)
179	ASHAMED PERSON IS HAVING NO CLOTHES ON	Cítil sa ako nahý. (He felt like being naked)
49	SHAME IS FIRE	Celý horel od hanby. (He was burning with shame)
41	SHAME IS NATURAL FORCE	Zaplavila ju hanba. (Shame flooded her)
37	SHAME IS PLANT / CROP	Zožala všetku hanbu. (She cropped all her shame)
28	SHAME IS DIRT	Potreboval zo seba zmyť hanbu. (He needed to wash away his shame)

5 Scope of conceptual metaphors

When we investigate the source domain of emotions, several questions come to mind: Are these domains always specific to one emotion, subset of emotions or do they characterize emotions in general? Can they represent some emotions more accurately than others?

In this section we would like to shed some light on the scope of the particular metaphors that we have investigated earlier in the case studies. We have already pointed out that several metaphors repeated themselves among the emotion concepts. This is quite interesting finding because the modern neurophysiology approves of the view that there is no central activity in brain characteristic for all emotions. Each emotion serves its own function and corresponds to distinctive pattern of autonomic nervous system activity (LeDoux, 1998).

Opposite to the scientific theory, emotion concepts share a large part of metaphors. All of them operate on the superordinate level while we found the specific metaphors operating on the basic level. Following figure summarizes our findings about the scope of the conceptual metaphors within the context of emotions. Metaphors that apply to all emotions are marked black.


EMPHASIS
EVALUATION
GENERAL METAPHORS
SPECIFIC METAPHORS
EMOTIONS
Intensity
Valuation
Control
Positive
Negative
Light
Up
Warm
Substance in container
Animate object
Illness
Burden
Natural Force
Social Superior
Opponent
Insanity
Divided self
Cold
Dark
Down
Fluid
Vapor
Fire
Plant
Animal
Gift
River
Paralysis
Blindness
Pain
Dirt
Veil
Devil
Poison
Happiness
Fear
Anger
Shame
Pride
Sadness

5.1 General metaphors

Kövecses (2000) claims that there are metaphors that apply universally to all emotion concepts in wide number of cultures. They also have corresponding metaphors in Slovak.

EXISTENCE OF EMOTION IS PRESENCE HERE: All feelings are gone.

EXISTENCE OF EMOTION IS BEING IN A BOUNDED SPACE: She was in ecstasy.

EXISTENCE OF EMOTION IS POSSISION OF AN OBJECT: She has a lot of pride.

Another metaphor which is very widely used and applies to all emotion concepts that we have discussed is **CONTAINER METAPHOR.** The container image defines an "inside-outside perspective of human body" (Kövecses, 2000 p. 37). Emotions in many cultures are seen as occurrences inside the body. We conceptualize the emotion as substances: fluid, solid or gas.

NATURAL FORCE / PHYSICAL FORCE

One basic metaphor that seems to overarch all emotions and we can find it in many other domains of human thought is FORCE metaphor. It represents the idea that much of the language and conceptualization of emotion can be described in "force dynamic terms" (Kövecses, 2000 p. XV), rather than in terms of individual and independent conceptual metaphors.

Many emotions are conceptualized as a natural force (wind, storm, flood, river…). We are often "engulfed", "overwhelmed", "flooded" by strong emotions. All of the studied emotion concepts used natural force as a source domain. Besides natural force, other types of force are possible for conceptualization (magnetic, gravitational, electric force). Electric force is used in the ENERGY metaphor for anger.

Very interesting example that we have found is the use of metaphor **HAPPINESS IS RIVER** where we use hierarchically more concrete concept of river with a particular emotion – happiness. This brings in question the hypothesis of George Lakoff (1992) that the mapped categories tend to be at the superordinate rather than basic level. This is indeed true for mappings in the very general

concepts but in this example we see that concrete emotions (happiness) may be conceptualized as more concrete source domains (river).

SOCIAL SUPERIOR

This metaphor is often understood as social equivalent of physical / natural forces (Kövecses, 2000 p. 37). The social force of the superior corresponds to the control that the emotion has over the self. In our study it has been found in all concepts but happiness but it can be easily conceived with this emotion as well.

OPPONENT, INSANITY

Quite similar to the previous metaphor are the metaphors of opponent, hidden enemy, rapture and insanity which all emphasize the lack of conscious control over one's behavior. Intense emotion is a state of ultimate lack of control. This concept is central to our understanding of emotion.

The lack of control over of conscious processes over automatic reactions of emotions is also supported by neurophysiologic evidence. It is well known that the connections from the cortical areas which represent conscious control, judgment and reasoning to the subcortical regions responsible for triggering emotions (like amygdala) are far weaker than the connections from these subcortical regions to the cortex (Amaral, et al., 1992). This may explain why it is so easy for emotional information to invade our conscious thought, but so hard for us to gain conscious control over our emotions (LeDoux, 1998 p. 265).

DIVIDED SELF

Metaphor of divided self can be applied to all of the studied emotion concepts. Similarly to the previous concept, it emphasizes inability to think clearly and impaired conscious judgment when the person is affected by an emotion. A person in an emotional state is commonly seen as incapable of "higher" mental functioning, which is represented by rational "self". When affected by an emotion, person may lose her self or and become "beside herself" with anger, fear, happiness or any other emotion.

ANIMATE OBJECT

Very common metaphor is to conceptualize the emotion as captive animal that needs to be controlled or tamed. This emphasizes the aspect of control of emotions and its applied to all of the studied emotions. However it is not the only use of the concept of animal. Quite often we can observe conceptualization of a person in terms of animal that represents that emotion in our folk theory or tradition. For example, in Slovak we say that someone is happy as “pig in rye” or when we parallel angry person to a bull. We can generalize this metaphor to: PERSON FEELING AN EMOTION IS ANIMAL EXPRESSING THE BEHAVIOR ASSOCIATED WITH THE EMOTION.

We also often conceptualize emotions as PLANTS that are seeded, grown and cropped or BIRDS that nest in our bodies. With negative emotions, we try to kill or BURY them.

BURDEN

We have found that the metaphorical image of burden is naturally applied to all the negative emotions that were studied: anger, fear, sadness, and shame. We tend to perceive negative emotions as something unpleasant that we need to bear.

ILLNESS

In our case studies we referred to the metaphor of ILLNESS in its various aspects. We found a direct reference to illness in the conceptualization of fear. Other aspects of physical distress that were conceptualized with emotions were PAIN (in sadness), CONTAGIOUSNESS (in happiness and fear), PARALYSIS (fear), BLINDNESS (anger, fear) and MUTENESS (fear). All of these occurred with the negative emotions only. The aspect of triggering pain is also represented in sadness and fear by the metaphor TORMENTOR.

HEAT/FIRE

Metaphor of FIRE needs to be distinguished from the conceptual metonymy that is very similar in its use and represents the body heat and connected body reactions (blushing, flushing). Namely, we use these metonymies when we talk about anger, happiness and shame.

HEAT expresses the intensity of an emotion. The element of heat can be combined with the metaphor of CONTAINER creating the image of HOT FLUID IN A CONTAINER that is typical conceptualization for anger. This concept is partly used also in happiness but the connection with hot fluid is not that clear. Sometimes the element of heat is not present but we still use the metaphor of FLUID IN A CONTAINER, which level raises or which can overflow. This is used with the concepts of FEAR, SADNESS and PRIDE.

CONTRAST QUALITIES

In many emotion concepts we try to emphasize their positive or negative quality by using opposite characteristics. As a general rule, we have observed associates DOWN, DARK and HEAVY with negative emotions, and UP and LIGHT with positive emotions. However, we have found an exception here with the concept of LIGHT, which was used almost universally among the emotions that we investigated. We understand that this concept of light is not the same as the one that is used in LIGHT-DARK dichotomy but more in the sense of “flash” or “sparkle”.

UNPLEASANT FOOD

We tend to associate negative emotions with unpleasant food that has unpleasant taste, is hard to swallow and digest. This metaphor is mostly applied to pride, shame, anger and fear.

CONCEPTUAL METONYMIES

Metonymies form a very important category of figurative language about emotions that relate to folk understanding of physiology and behavior connected with emotional states observed in self and others. They can have various representations that we discussed earlier in the case studies.

For illustration, we compared the results from collocation analysis to see how the particular metaphors were used as sources for each of the analyzed emotion based on the frequency of their co-occurrence in the National Corpus.

The summary of the results is in the following table:

Sources of emotion metaphors	Anger	Fear	Happiness	Sadness	Pride	Shame
FLUID	1525	940	2964	555	***[10]	***
INSANITY	601	209	715	49	***	***
FIRE	532	60	504	-	***	49
OPPONENT	430	755	404	363	***	225
SHIVERING	178	798	83	-	-	***
ANIMAL	161	***	33	10	***	***
SPARKLE / LIGHT	70	***	1116	26	19	***
NATURAL FORCE	***	140	1651	***	***	41
ILLNESS	***	519	***	293	-	-
PLANT / CROP	***	123	119	10	***	37

[10] We use *** when we did not identified any related expressions in collocation analysis but the expression is easily conceivable. We use – when the application of the concept does not appear natural.

5.2 Specific metaphors

Most of the source domains of emotion concepts have a scope of application that overarches the concepts of particular emotions and according to Kövecses (2000) usually even "extends beyond the domain of emotion". Our analysis confirmed that there are very few emotion-specific[11] metaphors associated with the studied emotion concepts.

These are:

Metaphor	Emotion
DEVIL	Anger
POISON	Fear
BEING OFF THE GROUND ANIMAL THAT LIVES WELL GIFT	Happiness
CLOTH / VEIL	Sadness

5.3 Emphasis of metaphors

Each of the identified metaphors brings in focus different aspect of emotional experience. Three of the most important aspects emphasized in conceptualization of emotions are INTENSITY, CONTROL and VALUATION.

INTENSITY:

- Intensity is amount/quantity of SUBSTANCE/FLUID
- Intensity is heat of SUBSTANCE/FLUID
- Increase in intensity is growth of PLANT/ANIMATE OBJECT
- Intensity is strength of effect of NATURAL FORCE

[11] We do not claim that these metaphors are really specific, only that we did not find their correspondences within other studied emotion concepts.

CONTROL:

- Focus on attempt at control: Attempt at emotional control is trying to overcome an OPPONENT, to hold back a CAPTIVE ANIMAL, or to suppress FLUID IN A CONTAINER.
- Focus on loss of control: Loss of emotional control is loss of control over a strong FORCE.
- Focus on lack of control: Lack of control si INSANITY, MAGIC, RAPTURE, SUPERIOR, and DIVIDED SELF.

POSITIVE-NEGATIVE VALUATION

- Positive valuation: UP, LIGHT, WARM
- Negative valuation: DOWN, HEAVY, DARK, COLD

6 Discussion

There are several issues that need to be raised. Most notably, it is the interpretation of the results presented in our case studies and the methodology used.

6.1 Interpretation of the results

As our analysis showed, there were only very minor differences in conceptualization of the selected emotions in Slovak and English. Most of the central metaphors were identical with only very slight variations in translation.

We have noticed that the range of the metaphors in English is much wider and the use of figurative language and its structure is far richer than in Slovak. The reason for this may be that Slovak is relatively young language in codified written form compared to English. Although it started to be used (together with Latin) as administrative language since 15th century, the first literary works date back to 18th century and it was not codified until 19th century.

However, none of the central metaphors was missing and even in the absence of corresponding metaphor in either language, it could be conceivable quite easily.

This similarity in conceptualization of emotions can be a result of:

1. Common linguistic origin of English and Slovak

Slovak language belongs to the family of West Slavic languages which, regarding their phrase structure and lexicon originated in the group of archaic Indo-European languages. English also belongs to this group as a member of West Germanic (Petr, 1984). The two languages thus share common linguistic origins which may be one of the reasons for the similarities we found in conceptualization of emotions.

2. Trans-cultural transmission

Being situated in the heart of Europe, Slovak culture and language was heavily influenced by other cultures. Although Slavic languages existed as separate group since 10th century, Slovak went

through long periods of close contact with Latin, German and Hungarian, most notably when it was part of Austro-Hungarian Empire. Very extensive cultural transmission was inevitable.

3. Shared human physiology that has been translated into emotion metaphors

Concepts of emotions are mainly based on the physiological processes that constitute feeling which appear to be cross-culturally universal. This hypothesis is supported also by the evidence from other languages of different origins based in various cultures that are much less interrelated (Chinese, Japanese, Zulu). Several studies conducted in these languages showed that people can choose to conceptualize their emotions in many different ways within the constraints of universal physiology.

6.2 Methodology

During the analysis, some very serious issues arose with regards to the methodology. Lakoff, Kövecses, and others used qualitative approach without any restrictions concerning the sources in their analysis of emotion concepts. They drew examples for their work from common language used in literature or everyday discourse. We tried to bring in some systematicity in the method of search for the examples of the expressions by using two main sources: National corpus and dictionaries of phrases. This solution, however, does not deal with inherent subjectivness of qualitative research. Even when using the tools of National corpus such as concordance and collocation, we still had to process the expressions out manually, which inevitably includes the personal bias of the researcher.

First important step is filtering the relevant expressions, where it is sometimes difficult to distinguish between figurative language related to emotion and figurative language related to the context. The very notion of figurative expression is not well-established and sometimes is impossible to draw the line between literal and figurative descriptive language. It is only the matter of personal decision of a researcher, which expression includes in the analysis. Another step involves categorizing of filtered expressions into corresponding metaphors and labeling them. There are always several ways how to perform this step and the result may vary from one

researcher to another. An example of this problem that we faced in our case studies was distinguishing between the metaphor OPPONENT and SOCIAL SUPERIOR, where is some degree of overlap so it was not quite clear whether we should describe them as one category or two.

Another methodological issue is the use of available statistics in National Corpus software. Although we also approached the problem by the means of count of collocation frequency, the nature of the research still remains purely qualitative because the qualitative filtering and categorizing was necessary prior to the counting of the expressions within each metaphor. The numbers are thus purely for illustration; they show how frequent the concept can be in language. However, it does not represent any real standard that we could manipulate as an ordinary variable. The other reason why we used the results from the collocation statistics only for illustration is that the use of automated filtering may filter out many relevant expressions and at the same time include by coincidence some expressions of different meaning that satisfy the criteria.

Research that involves manual filtering and categorization is always arguable due to its inherent subjectivness. The subject of the research – a researcher, is by a large part also its object. This is not necessarily a negative feature because our goal was to present a culture-specific understanding of the concepts of emotion which could not be done without an observer that subjectively understands language and concepts according to her native tongue and cultural background. The validity of the research could be increased by integrating qualitative analyses of more native speakers. However, this exceeds the scope of this thesis.

6.3 Suggestions for future research

Our study raised some interesting questions that we did not explore due to the limited scope of this thesis. First, it will be very important for the future research to clear up the methodological issues and establish international standards for this type of research. It would encourage more research in different linguistic and cultural environments and allow more comparative studies.

Another interesting topic that we did not explore in our study is the analysis of prefixes used in Slovak in the context of emotions and their equivalents – prepositions and phrasal verbs in

English. The analysis of these two linguistic features and their relation to the underlying conceptual structure of emotion could yield some interesting results.

In the next decade, the most promising area of metaphor research seems to be the search for the neurophysiological correlates of metaphor. Using the methods of neuroimaging, such as FMRI, we could confirm and elaborate our theories about the simultaneous co-activation of source and target domain when using the metaphorical concepts in language and come to understand where do the primary metaphors come from and how they are rooted in our embodied cognition.

Conclusion

For cognitive science, it is very important to describe folk theories and try to explicate our understanding of concepts, reasoning and common sense. Human conceptual system is a product of human experience and this experience is facilitated by body. There is no direct link between natural language and world other than human experience. Language is based on concepts and these are motivated by experience. (Lakoff, 1987 p. 205)

In this thesis, we tried to show that emotion concepts are deeply rooted in our embodied experience and this accounts for the universality of our understanding of emotions and associated feelings.

Our study confirmed that there are only minor differences in conceptualization of the selected emotions in English and in Slovak. None of the differences occurred on the superordinate level characteristic for central metaphors of emotion concepts. Most of the differences were variations among the specific metaphors on the basic level of conceptualization. For example, Slovak speakers use the central metaphor of NATURAL FORCE for conceptualization of all of the selected emotions. We found the difference on the lower level, where we use more specific basic level metaphors like STORM, TIDE or RIVER. The metaphor of RIVER is especially elaborate and common with the emotion of HAPPINESS, where it seems to be quite central.

Also other language specific metaphors that we found are the basic level mappings but they do not share a common metaphor at the superordinate level. It is, for example the use of DEVIL to describe anger, GIFT for happiness, DIRT for pride and shame, BIRD or VEIL for sadness.

Overall, most of the metaphors were shared by all of the studied emotion concepts. The specific metaphors were conceptualized on the basic level while the general metaphors common for all emotions were conceptualized on the superordinate level.

We also found a few examples where the used metaphors opposing the conclusion of Kövecses that emotion cannot contradict the universal physiology (Kövecses, 1990 p. 165). For example, sometimes we conceptualize FEAR as FIRE although it is associated with the feelings of chill or

coldness. In some cases we tend to use expressions central to all emotions, even if it does not reflect our understanding of basic physiology.

This makes plausible the hypothesis that, in our folk theory, we tend to conceptualize emotions as specific instances of the same concept of emotion instead of very distinct processes as they are viewed in modern neurophysiology. Language does not provide a true description of the world; it is only a true description of a folk theory about the world. Similarly, cognitive model of emotion is not a real mirror of mechanisms carried out in body but a folk theory of emotion, which has its basis in experience and conscious feelings associated with emotions. But there is much more to emotions than just feelings, which are the only part accessible to consciousness. Only integration of knowledge from different scientific fields can bring a better understanding of emotions.

Resumé

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Appendix I

Collocation frequency for anger

lemma	*MI-score*	*T-score*	*Rel. f [%]*	*Abs. f*
výbuch	7.589	18.21	2.771	335
vylievať	8.905	13.28	6.901	177
vyliať	7.456	12.66	2.527	162
vybuchnúť	7.613	12.1	2.816	148
vzkypieť	7.391	10.52	2.415	112
dusiť	8.1	9.077	3.949	83
kypieť	10.32	8.993	18.45	81
vrieť	7.752	8.677	3.103	76
zasyčať	8.85	7.056	6.64	50
zadúšať	8.939	6.62	7.063	44
prskať	9.468	6.548	10.19	43
ventilovať	9.758	6.157	12.46	38
soptiť	9.758	5.993	12.46	36
puknúť	7.837	5.974	3.291	36
vyprchať	7.989	4.98	3.655	25
chrliť	7.232	4.659	2.163	22
vychrliť	7.479	4.334	2.568	19
vyprsknúť	7.651	4.337	2.892	19
syčať	8.068	4.343	3.862	19
ANGER IS (HOT) FLUID	**8.323947**	**8.132526**	**5.798737**	**1525**
záchvat	9.527	21.42	10.62	460
zachvátiť	8.037	8.093	3.78	66
nepríčetný	9.483	6.156	10.3	38
príčetný	9.538	4.789	10.7	23
šalieť	7.18	3.716	2.086	14
ANGER IS INSANITY	**8.753**	**8.8348**	**7.4972**	**601**
sršať	10.22	12.16	17.15	148
vzbĺknuť	8.999	9.625	7.363	93
blčať	8.857	8.045	6.674	65
vzplanúť	9.418	7.862	9.841	62
zahorieť	9.048	6.233	7.617	39
sršiaci	9.279	3.994	8.939	16
blčiaci	8.001	3.858	3.686	15
zaiskriť	7.707	3.854	3.006	15

planúť	8.457	3.595	5.058	13
tlieť	7.394	3.584	2.421	13
rozdúchavať	8.268	3.306	4.435	11
spaľujúci	7.622	3.3	2.835	11
vyšľahnúť	7.032	3.291	1.884	11
roznecovať	8.303	3.152	4.545	10
roznietiť	8.214	3.152	4.274	10
ANGER IS FIRE	**8.4546**	**5.2674**	**5.981867**	**532**
lomcovať	7.121	12	2.003	146
zmocniť	9.028	10.8	7.514	117
zmocňovať	7.806	8.026	3.221	65
premáhať	7.959	7.519	3.58	57
zalomcovať	9.862	6.701	13.39	45
prevládnuť	7.181	4.329	2.088	19
opanovať	8.115	4.227	3.991	18
neovládnuť	7.499	3.145	2.604	10
ANGER IS OPPONENT	**8.071375**	**7.093375**	**4.798875**	**477**
zavrčať	8.243	9.025	4.359	82
štekať	8.591	6.387	5.548	41
vrčať	8.419	6.306	4.926	40
brechať	8.456	6.147	5.053	38
hrýzť	7.033	6.036	1.885	37
brechot	8.935	5.904	7.042	35
vyšteknúť	8.858	5.903	6.679	35
vrčanie	8.407	4.782	4.883	23
štekot	8.307	4.11	4.558	17
rozbrechať	9.942	3.996	14.16	16
besný	7.36	3.976	2.363	16
vyceriť	7.79	3.855	3.185	15
besnenie	7.763	3.301	3.125	11
peniť	7.813	3.302	3.235	11
ANGRY PERSON IS A DOG	**8.279786**	**5.216429**	**5.0715**	**417**
triasť	9.925	12.23	13.99	150
roztriasť	7.442	5.261	2.502	28
ANGER IS SHIVERING	**8.6835**	**8.7455**	**8.246**	**178**
uzda	7.237	6.589	2.171	44
krotiť	7.72	5.266	3.034	28
neskrotný	7.955	4.879	3.571	24

bičovať	7.7	4.338	2.992	19
popustiť	7.773	4.223	3.147	18
bezuzdný	7.888	3.857	3.409	15
vybičovať	8.088	3.592	3.916	13
ANGER IS ANIMAL	**7.765857**	**4.677714**	**3.177143**	**161**
vybíjať	9.907	8.417	13.81	71
vybiť	9.365	8.413	9.492	71
ANGER IS ENERGY	**9.636**	**8.415**	**11.651**	**142**
očervenieť	11.45	10.58	40.29	112
sčervenieť	8.689	4.348	5.938	19
červenieť	8.052	3.304	3.819	11
ANGER IS REDNESS	**9.397**	**6.077333**	**16.68233**	**142**
zblednúť	7.57	6.598	2.735	44
ozelenieť	9.233	3.311	8.661	11
stmavnúť	7.91	3.149	3.46	10
sfialovieť	10.24	2.826	17.39	8
ANGER IS CHANGE IN COLOR	**8.73825**	**3.971**	**8.0615**	**73**
zablysnúť	8.253	5.638	4.39	32
blýskať	7.219	4.764	2.144	23
zablýskať	8.915	3.865	6.944	15
ANGER IS LIGHTNING	**8.129**	**4.755667**	**4.492667**	**70**
zaslepený	8.467	4.347	5.094	19
zaslepiť	8.345	3.988	4.678	16
ANGER IS BLIDNESS	**8.406**	**4.1675**	**4.886**	**35**
žlč	7.357	4.217	2.359	18
horkosť	7.309	4.097	2.282	17
ANGER IS BITTER / GALL	**7.333**	**4.157**	**2.3205**	**35**

Appendix II

Collocation frequency for fear

lemma	*MI-score*	*T-score*	*Rel. f [%]*	*Abs. f*
kolaps	8.021	16.64	10.48	279
smrteľný	6.493	15.06	3.638	232
tŕpnuť	7.707	8.327	8.434	70
zmeravieť	6.723	7.608	4.266	59
stŕpnuť	7.444	6.595	7.029	44
ochromiť	6.821	6.499	4.565	43
skamenieť	6.649	5.512	4.052	31
zamdlieť	7.207	5.44	5.964	30
zdrevenieť	8.338	5.369	13.06	29
polomŕtvy	7.746	5.267	8.669	28
zmierať	9.023	4.99	21.01	25
vyhubenie	8.333	4.984	13.02	25
omdlieť	6.706	4.952	4.216	25
oslabovanie	6.519	4.744	3.704	23
tuhnúť	6.921	4.756	4.894	23
ochromujúci	9.09	4.682	22	22
zmeravený	7.27	4.66	6.232	22
ochromovať	7.695	4.451	8.368	20
zamrieť	6.757	4.319	4.368	19
ochromený	7.323	3.849	6.466	15
meravieť	8.314	3.73	12.84	14
paralyzujúci	8.499	3.596	14.61	13
stŕpnutý	6.856	3.574	4.676	13
zamierať	8.486	3.307	14.47	11
strnúť	6.662	3.284	4.089	11
zamdlievať	8.256	3.152	12.35	10
omdlievať	6.671	3.131	4.115	10
paralyzovaný	7.215	2.98	6	9
ochromenie	7.026	2.977	5.263	9
hynutie	7.602	2.814	7.843	8
nezamdlieť	8.611	2.443	15.79	6
stŕpať	8.187	2.441	11.76	6
omračujúci	6.493	2.422	3.636	6
trnúť	8.052	2.44	10.71	6
neochromiť	9.026	1.996	21.05	4
FEAR IS PARALYSIS	**7.564057**	**4.9426**	**8.961057**	**1200**

odvrátiť	6.652	16.09	4.061	264
premknúť	9.523	15.66	29.71	246
napĺňať	6.461	14.66	3.557	220
prameniť	6.524	10.51	3.716	113
pretrhnutie	8.017	6.221	10.46	39
preniknutý	7.078	3.844	5.455	15
naplňovať	7.179	3.294	5.851	11
zatopenie	8.226	3.306	12.09	11
premkýnať	9.341	3.312	26.19	11
premknutý	9.426	2.233	27.78	5
opadnutie	6.802	2.216	4.505	5
FEAR IS FLUID / SUBSTANCE	**7.748091**	**7.395091**	**12.125**	**940**
triasť	7.335	20.32	6.519	418
chvieť	6.514	11.15	3.689	127
zachvieť	6.479	8.954	3.601	82
roztriasť	7.255	8.252	6.166	69
záchvev	6.828	6.347	4.586	41
prechvieť	9.933	3.869	39.47	15
netriasť	7.354	3.719	6.604	14
klepať	6.848	3.434	4.651	12
neroztriasť	8.4	2.442	13.64	6
trasenie	6.905	2.429	4.839	6
FEAR IS SHIVERING	**7.318917**	**6.24025**	**8.706**	**798**
zmocniť	7.437	22.45	6.997	510
zmocňovať	7.763	13.24	8.771	177
opanovať	8.212	7.324	11.97	54
nezmocniť	7.868	3.149	9.434	10
nepanovať	6.712	2.801	4.233	8
diktovaný	6.477	2.211	3.597	5
FEAR IS SOCIAL SUPERIOR	**7.4115**	**8.529167**	**7.500333**	**764**
čeliť	6.555	16.73	3.796	286
premôcť	6.788	13.41	4.46	183
zahnať	6.443	11.78	3.512	142
premáhať	6.96	8.872	5.025	80
lomcovať	7.045	6.731	5.33	46
zalomcovať	7.052	4.211	5.357	18
FEAR IS OPPONENT	**6.807167**	**10.289**	**4.58**	**755**

pochytiť	7.925	14.5	9.81	212
nákaza	6.504	11.06	3.664	125
chorobný	6.958	9.252	5.02	87
opantať	7.096	6.119	5.523	38
prepuknutie	7.253	4.553	6.158	21
opantávať	7.985	4.226	10.23	18
nenakaziť	7.327	2.629	6.481	7
nákazlivosť	8.367	2.442	13.33	6
nainfikovať	6.563	2.212	3.817	5
FEAR IS ILLNESS	**7.330889**	**6.332556**	**7.114778**	**519**
zachvátiť	7.571	11.51	7.675	134
zošalieť	6.514	5.234	3.689	28
zachvacovať	8.228	4.344	12.1	19
zachvátený	8.689	3.99	16.67	16
pološialený	7.742	2.633	8.642	7
schvátiť	7.574	2.224	7.692	5
FEAR IS INSANITY	**7.719667**	**4.989167**	**9.411333**	**209**
narastajúci	6.747	9.707	4.336	96
prerásť	6.716	9.344	4.244	89
neprerásť	7.395	2.63	6.796	7
GROWING	**6.952667**	**7.227**	**5.125333**	**192**
zmietať	6.874	9.714	4.736	96
pohltenie	7.537	3.445	7.5	12
rozpútanie	6.888	3.289	4.783	11
zmietajúci	6.56	2.798	3.81	8
otriasajúci	7.026	2.625	5.263	7
zažehnaný	7.593	2.437	7.792	6
FEAR IS NATURAL FORCE	**7.079667**	**4.051333**	**5.647333**	**140**
mučivý	6.652	6.642	4.061	45
ukrutný	6.759	6.572	4.374	44
gniaviť	6.829	4.856	4.589	24
mučivo	6.714	3.132	4.237	10
FEAR IS TORMENTOR	**6.7385**	**5.3005**	**4.31525**	**123**
rozsievať	7.58	6.212	7.723	39
urodiť	6.753	4.854	4.356	24
rozosievať	8.135	3.986	11.35	16
zasievať	7.381	3.719	6.731	14

dozrievajúci	6.958	3.436	5.021	12
rozsievajúci	9.026	1.996	21.05	4
plodiaci	6.751	1.981	4.348	4
FEAR IS PLANT / CROP	**7.512**	**3.740571**	**8.654143**	**113**
zamraziť	6.522	4.846	3.709	24
drkotať	6.653	4.2	4.063	18
mrazenie	6.648	3.131	4.049	10
roztápanie	6.802	2.216	4.505	5
FEAR IS COLD	**6.65625**	**3.59825**	**4.0815**	**57**
vkrádať	7.121	5.346	5.62	29
číhajúci	6.839	3.288	4.622	11
FEAR IS HIDDEN ENEMY	**6.98**	**4.317**	**5.121**	**40**
zožierať	6.647	4.95	4.045	25
otrávenosť	8.239	2.229	12.2	5
zvieranie	6.467	1.977	3.571	4
FEAR IS POISON	**7.117667**	**3.052**	**6.605333**	**34**
obelieť	6.708	3.132	4.219	10
osivieť	6.967	2.218	5.051	5
ošedivieť	6.574	1.979	3.846	4
FEAR IS CHANGE OF COLOR	**6.749667**	**2.443**	**4.372**	**19**
posrať	7.28	4.097	6.273	17
pomočiť	7.574	2.437	7.692	6
pocikať	7.519	2.436	7.407	6
poondiať	9.574	1.997	30.77	4
nepomočiť	10.69	1.999	66.67	4
FEAR IS DEFECATION	**8.5274**	**2.5932**	**23.7624**	**37**
čierňava	**6.795**	**3.573**	**4.483**	**13**
FEAR IS DARKNESS				
oslepnutie	**8.125**	**2.818**	**11.27**	**8**
FEAR IS BLINDNESS				

Appendix III

Collocation frequency for happiness

lemma	*MI-score*	*T-score*	*Rel. f [%]*	*Abs. f*
priniesť	5.6	32.35	2.274	1091
prinášať	6.578	32.49	4.477	1078
prijať	5.521	27.82	1.37	809
prijímať	5.175	16.7	1.694	295
rozdávať	7.022	16.46	6.092	275
darček	6.629	16.3	2.953	271
dar	5.256	15.49	1.14	253
podeliť	6.786	14.96	5.172	228
spraviť	5.114	12.62	1.033	169
dopriať	6.955	10.54	3.701	113
zdieľať	6.921	9.768	5.682	97
neprinášať	7.071	8.596	6.303	75
rozdávanie	7.328	8.073	7.534	66
obdariť	6.055	7.88	3.117	64
odmeniť	5.43	6.768	1.287	48
vniesť	5.594	6.347	1.441	42
obdarovať	6.036	6.228	3.077	40
dávanie	6.811	5.428	5.263	30
vnášať	5.688	5.281	1.538	29
obdarovaný	7.411	5.069	7.975	26
zriecť	5.168	4.861	1.073	25
oplývať	5.988	4.617	1.893	22
prijímaný	5.487	4.262	1.338	19
roznášať	5.34	4.138	1.899	18
obdarúvať	6.012	4.059	3.025	17
rozdávajúci	7.918	3.303	11.34	11
podarovať	5.656	3.1	2.364	10
HAPPINESS IS GIFT	**6.168519**	**10.87067**	**3.557593**	**5221**
plný	5.281	33.97	1.823	1216
napĺňať	7.168	20.28	6.742	417
naplniť	6.199	20.05	3.443	413
prekypovať	8.328	13.85	15.07	193
naplnený	5.938	11.85	2.875	145
naplnenie	5.999	11.27	2.998	131
plnosť	7.209	10.97	6.936	122

schladiť	7.77	7.646	6.512	59
prekypujúci	7.95	7.319	11.59	54
vybuchnúť	5.024	6.922	0.9705	51
rozplývať	6.49	6.176	2.682	39
vytrysknúť	6.299	5.497	2.348	31
zaplnený	5.62	5.091	2.306	27
kypieť	6.368	4.073	3.872	17
explodovať	5.277	3.773	1.157	15
nenapĺňať	6.174	3.556	3.385	13
naplňovať	6.964	3.29	5.851	11
výlev	6.265	3.121	2.294	10
HAPPINESS IS FLUID IN CONTAINER	**6.462389**	**9.928**	**4.603028**	**2964**
zaplaviť	6.53	12.74	4.333	166
zaplaviť	6.785	11.12	3.289	126
nával	6.614	9.698	4.593	96
odkloniť	7.545	8.952	8.757	81
nával	6.929	8.646	3.636	76
opadnúť	7.555	7.957	5.609	64
prameniť	5.488	7.822	2.105	64
búrlivý	5.222	7.348	1.113	57
zaliať	5.316	7.36	1.867	57
prameniť	5.948	7.362	1.841	56
kaliť	9.082	7.335	16.17	54
nespútaný	7.368	6.668	7.745	45
nespútaný	7.955	6.531	7.401	43
skaliť	9.552	6.549	22.4	43
zaliať	5.457	6.181	1.31	40
zaplavovať	6.332	6.167	3.775	39
gejzír	6.936	6.114	5.74	38
unášať	5.109	5.907	1.618	37
vytrysknúť	5.78	5.725	2.576	34
vyprchať	7.337	5.709	4.825	33
vyvierať	5.627	5.184	2.316	28
zaplavovať	6.506	5.233	2.711	28
unášať	5.306	5.065	1.181	27
vliať	5.687	4.903	2.415	25
príval	5.334	4.778	1.204	24
vliať	6.28	4.836	2.319	24
vlievať	5.584	4.696	2.248	23
vlievať	6.105	4.516	2.053	21
neskalený	10.13	4.468	52.63	20

živelný	5.041	4.336	0.9818	20
zmietať	5.048	4.337	0.9867	20
zaburácať	7.017	4.091	3.864	17
zalievať	5.297	3.774	1.173	15
neskaliť	10.01	3.738	48.28	14
prameniaci	5.448	3.656	2.047	14
prchavý	5.611	3.665	1.458	14
zakaliť	6.672	3.57	4.779	13
neskaliť	10.44	3.462	41.38	12
poryv	5.501	3.243	2.124	11
prameniaci	5.752	3.255	1.608	11
zakaliť	7.083	3.292	4.044	11
rozlievať	5.181	3.075	1.701	10
HAPPINESS IS RIVER	**6.559524**	**5.787238**	**7.004917**	**1651**
žiariť	6.891	15.87	3.54	256
vyžarovať	6.661	12.25	4.744	153
zažiariť	6.609	10.71	4.577	117
jasať	8.204	10.16	8.799	104
rozžiariť	7.799	9.124	6.646	84
jasot	8.387	7.85	9.984	62
žiariaci	6.914	7.151	5.652	52
rozžiarený	7.028	6.73	6.117	46
jasavý	9.248	6.547	18.14	43
zajasať	8.59	6.308	11.49	40
záblesk	5.535	5.952	1.383	37
žiarivý	5.152	5.667	1.061	34
zasvietiť	6.019	4.722	1.934	23
rozjasniť	5.648	4.158	2.35	18
osvietiť	5.25	3.895	1.784	16
prežiariť	6.904	3.289	5.612	11
iskrička	5.773	3.104	2.564	10
pohasnúť	6.176	3.119	3.39	10
HAPPINESS IS LIGHT	**6.821556**	**7.033667**	**5.542611**	**1116**
pominúť	5.559	8.533	2.211	76
zápal	5.094	8.122	1.019	70
opadnúť	7.011	8.242	6.047	69
ošiaľ	7.312	7.697	4.739	60
prepuknúť	6.671	7.67	3.04	60
zblázniť	5.404	7.372	1.985	57
vytrženie	6.821	7.216	5.3	53

opojenie	6.696	7.142	4.86	52
bláznivý	5.074	6.581	1.005	46
zachvátiť	5.781	6.586	2.577	45
šalieť	6.476	5.232	4.173	28
vyvierať	5.864	4.504	1.737	21
opájať	6.61	4.314	2.914	19
opojiť	7.453	4.1	8.213	17
opojný	6.395	4.074	2.511	17
opojený	7.502	3.586	8.497	13
vytriezvenie	5.567	3.391	2.222	12
HAPPINESS IS INSANITY	**6.311176**	**6.138941**	**3.708824**	**715**
schladiť	7.118	7.626	6.512	59
sršať	6.748	7.28	5.037	54
vyprchať	6.811	5.947	5.263	36
ohňostroj	5.184	5.586	1.704	33
prchavý	6.106	5.487	3.229	31
zadúšať	6.683	5.424	4.815	30
hrejivý	6.338	5.132	3.792	27
sálať	6.036	4.619	3.077	22
vzbĺknuť	5.078	4.34	1.584	20
upaľovať	6.827	4.321	5.322	19
zápalistý	6.94	4.323	5.758	19
hriať	5.161	4.008	1.067	17
iskierka	5.733	4.046	2.493	17
vzplanutie	5.959	4.057	2.916	17
blčať	5.038	3.755	1.54	15
iskriť	5.591	3.793	2.259	15
plamienok	5.462	3.785	1.315	15
zapaľovať	5.199	3.768	1.096	15
ochladnúť	6.074	3.413	3.158	12
zaiskriť	5.555	3.246	2.204	11
pohasnúť	6.828	3.134	3.39	10
rozhorieť	5.422	3.089	1.279	10
HAPPINES IS FIRE	**5.995045**	**4.553591**	**3.127727**	**504**
vychutnať	6.046	9.7	3.098	97
štipka	6.045	8.809	3.095	80
hŕstka	5.866	8.164	2.735	69
okúsiť	5.784	5.102	1.643	27
hrsť	5.068	4.851	1.001	25
požívať	6.29	4.936	2.334	25

zakúšať	7.766	4.977	6.494	25
dúšok	5.181	4.239	1.701	19
kúštik	6.764	3.963	5.096	16
hltať	5.324	3.776	1.195	15
nasýtiť	5.078	3.631	1.008	14
nezakúsiť	8.004	3.592	12.04	13
priehrštie	5.559	3.391	2.21	12
zakusovať	7.45	3.144	8.197	10
HAPPINESS IS FOOD	**6.158929**	**5.1625**	**3.703357**	**447**
zavládnuť	6.407	12.18	3.979	152
zmocniť	5.272	11.19	1.811	132
panovať	5.094	6.864	1.019	50
premôcť	5.135	6.371	1.048	43
opanovať	6.049	3.685	3.104	14
neubrániť	5.346	3.517	1.906	13
HAPPINESS IS OPPONENT	**5.5505**	**7.301167**	**2.1445**	**404**
nebeský	5.461	9.773	1.314	100
výšina	5.214	4.459	1.107	21
povznášajúci	6.443	4.309	4.077	19
povznášať	6.276	3.823	3.632	15
rozlet	5.339	3.649	1.897	14
uletieť	5.224	3.371	1.752	12
HAPPINESS IS BEING OFF THE GROUND	**5.6595**	**4.897333**	**2.2965**	**181**
plodnosť	5.064	4.55	1.568	22
rozkvitnúť	5.797	4.606	2.607	22
zožať	5.43	4.582	1.286	22
životabudič	9.497	4.576	33.87	21
rozsievať	6.249	4.187	3.564	18
rozkvitnutý	5.065	3.63	1.57	14
HAPPINESS IS PLANT / CROP	**6.183667**	**4.355167**	**7.410833**	**119**
zapýriť	6.61	4.849	4.58	24
začervenať	5.35	4.575	1.911	22
horúčkovitý	5.26	4.245	1.796	19
očervenieť	5.013	3.753	0.9634	15
rumenec	6.224	3.821	3.505	15
HAPPINESS IS REDNESS	**5.6914**	**4.2486**	**2.55108**	**95**
nákazlivý	6.373	6.326	3.886	41

nakaziť	5.343	5.933	1.902	37
HAPPINESS IS CONTAGIOUS	**5.858**	**6.1295**	**2.894**	**78**
zachvieť	5.228	6.156	1.757	40
záchvev	6.209	5.492	3.468	31
rozochvenie	7.737	3.448	10	12
HAPPINESS IS SHIVERING	**6.391333**	**5.032**	**5.075**	**83**
bezuzdný	6.514	3.426	2.727	12
spútaný	5.528	3.245	1.377	11
zaerdžať	7.15	3.14	4.237	10
HAPPINESS IS ANIMAL	**6.397333**	**3.270333**	**2.780333**	**33**

Appendix IV

Collocation frequency for sadness

lemma	*MI-score*	*T-score*	*Rel. f [%]*	*Abs. f*
utápať	8.537	4.347	3.823	19
nával	6.465	4.31	0.9091	19
zaplaviť	6.835	6.649	1.175	45
napĺňať	6.652	7.92	1.035	64
vyvierať	6.329	3.123	0.8271	10
prameniť	6.261	4.835	0.7892	24
ponoriť	6.206	5.312	0.76	29
naplnený	6.075	5.828	0.6939	35
naplniť	5.529	7.386	0.4752	57
utopiť	5.237	3.229	0.3881	11
plný	5.14	15.12	0.3629	242
SADNESS AS FLUID IN CONTAINER	**6.296909**	**6.187182**	**1.021682**	**555**
skleslosť	9.964	3.313	10.28	11
skleslý	8.807	3.155	4.608	10
zvesený	7.969	3.591	2.579	13
zvesiť	7.266	4.096	1.584	17
hlboký	6.562	17.17	0.9726	301
bezodný	7.4	3.297	1.738	11
upadnúť	5.404	4.026	0.4358	17
hlboko	4.843	7.158	0.2954	55
SADNESS IS DOWN	**7.276875**	**5.72575**	**2.8116**	**435**
temnota	5.418	3.383	0.4399	12
čierny	5.145	15.82	0.3641	265
tmavý	5.136	7.588	0.3619	61
tma	4.748	6.74	0.2766	49
SADNESS IS DARK	**5.11175**	**8.38275**	**0.360625**	**387**
zavládnuť	7.254	7.695	1.571	60
zmocňovať	6.968	5.058	1.288	26
presila	8.549	5.729	3.855	33
premôcť	6.67	6.493	1.048	43
premáhať	6.517	3.831	0.9422	15
zmocniť	6.459	8.032	0.9055	66
prevládať	5.575	5.362	0.4906	30
panovať	4.985	3.874	0.326	16

vládnuť	4.513	5.894	0.235	38
ovládnuť	4.441	3.569	0.2235	14
zápasiť	4.368	3.009	0.2124	10
vyhrávať	4.306	3.289	0.2035	12
SADNESS IS OPPONENT	**5.88375**	**5.152917**	**0.941725**	**363**
boľavý	9.533	12.43	7.624	155
bôľ	8.673	7.398	4.202	55
trpiaci	5.55	3.662	0.4823	14
mučivý	6.454	3.126	0.9025	10
krutý	5.355	6.092	0.4213	39
bolieť	4.438	4.266	0.223	20
SADNESS IS PAIN	**6.667167**	**6.162333**	**2.309183**	**293**
odieť	8.166	4.228	2.956	18
zahaliť	8.003	5.722	2.64	33
zastrieť	7.523	4.665	1.893	22
závoj	6.926	5.522	1.252	31
zahaľovať	6.717	3.285	1.083	11
zahalený	6.344	4.417	0.8358	20
nosiť	6.007	11.09	0.662	127
SADNESS IS CLOTH	**7.098**	**5.561286**	**1.6174**	**262**
zatrpknutosť	8.219	3.593	3.066	13
zatrpknutý	7.82	3.725	2.326	14
trpkosť	7.605	5.449	2.004	30
horkosť	7.513	3.721	1.879	14
trpký	7.084	7.158	1.396	52
SADNESS IS BITTER	**7.6482**	**4.7292**	**2.1342**	**123**
doľahnúť	7.765	6.527	2.238	43
doliehať	6.347	4.072	0.8379	17
ťaživý	7.107	3.971	1.418	16
bremeno	5.562	4.267	0.4862	19
ťažiť	4.611	3.181	0.2515	11
SADNESS IS BURDEN	**6.2784**	**4.4036**	**1.04632**	**106**
šalieť	7.316	3.296	1.639	11
zachvátiť	6.936	4.652	1.26	22
záchvat	5.165	3.889	0.3693	16
SADNES IS INSANITY	**6.472333**	**3.945667**	**1.089433**	**49**

hnedý	4.926	5.117	0.3129	28
belasý	4.913	3.986	0.3101	17
SADNESS IS COLORED	**4.9195**	**4.5515**	**0.3115**	**45**
vanúť	7.482	4.1	1.84	17
rozptýliť	6.076	3.816	0.6941	15
rozplynúť	5.228	3.078	0.3857	10
SADNESS IS VAPOUR	**6.262**	**3.664667**	**0.973267**	**42**
pochovávať	6.63	3.429	1.02	12
pochovať	5.706	5.097	0.5371	27
SADNESS IS DEAD	**6.168**	**4.263**	**0.77855**	**39**
vyžarovať	5.498	3.787	0.4651	15
záblesk	5.32	3.234	0.4112	11
SADNESS IS LIGHT	**5.409**	**3.5105**	**0.43815**	**26**
vkrádať	8.042	3.727	2.713	14
vkradnúť	6.963	3.137	1.284	10
SADNESS IS HIDDEN ENEMY	**7.5025**	**3.432**	**1.9985**	**24**
vystavať	6.927	4.323	1.252	19
SADNESS IS BUILDING				
uzda	**5.583**	**3.096**	**0.4933**	**10**
SADNESS IS ANIMAL				
požať	**12.32**	**3.162**	**52.63**	**10**
SADNESS IS PLANT				

Appendix V

Collocation frequency for pride

lemma	*MI-score*	*T-score*	*Rel. f [%]*	*Abs. f*
vypäť	10.98	3.604	7.345	13
vztýčený	10.97	8.362	7.307	70
vzpriamene	9.726	4.118	3.085	17
vypínať	8.895	5.088	1.734	26
vzpriamený	8.558	3.863	1.374	15
týčiť	8.26	4.458	1.117	20
vztýčiť	8.244	3.453	1.105	12
zdvihnúť	5.533	6.49	0.1687	44
vystrieť	6.943	4.757	0.4483	23
vypnúť	6.669	4.316	0.3709	19
dvíhať	5.955	4.174	0.2261	18
PROUD PERSON IS BIG	**8.248455**	**4.789364**	**2.207364**	**277**
napĺňať	8.15	7.972	1.035	64
naplniť	6.148	5.489	0.2584	31
PRIDE IS FLUID IN CONTAINER	**7.149**	**6.7305**	**0.6467**	**95**
žiariť	**6.172**	**4.298**	**0.2628**	**19**
PRIDE IS LIGHT				
zmocniť	**5.498**	**3.387**	**0.1646**	**12**
PRIDE IS SOCIAL SUPERIOR				
raniť	**8.115**	**3.151**	**1.01**	**10**
CAUSING HARM TO PROUD PERSON IS CAUSING INJURY				

Appendix VI

Collocation frequency for shame

lemma	*MI-score*	*T-score*	*Rel. f [%]*	*Abs. f*
pýriť	10.55	3.462	8.824	12
zapýriť	9.416	4.576	4.008	21
rumenec	9.223	3.867	3.505	15
očervenieť	8.912	6.619	2.826	44
začervenať	8.888	5.645	2.78	32
červenať	8.141	7.589	1.656	58
červeň	7.018	3.578	0.7602	13
červený	4.343	6.723	0.1191	50
ASHAMED PERSON IS BLUSHING	**8.311375**	**5.257375**	**3.059788**	**245**
porážka	6.558	6.099	0.5528	38
premôcť	6.514	4.639	0.5362	22
prehra	6.799	11.97	0.6534	146
podľahnúť	4.787	4.201	0.162	19
SHAME IS OPPONENT	**6.1645**	**6.72725**	**0.4761**	**225**
nahý	6.642	6.182	0.5858	39
nahota	9.173	6.697	3.386	45
vyzliecť	6.15	3.944	0.4164	16
zakryť	6.69	6.263	0.6056	40
zakrývať	6.741	4.953	0.6277	25
holý	4.981	3.623	0.1853	14
ASHAMED PERSON IS HAVING NO CLOTHES ON	**6.625286**	**5.380286**	**1.686686**	**179**
ponížený	7.987	3.858	1.488	15
poníženie	9.344	7.472	3.812	56
hlboký	4.269	5.609	0.1131	35
hĺbka	4.252	3.416	0.1118	13
SHAME IS DOWN	**6.463**	**5.08875**	**1.381225**	**119**
zhorieť	6.737	4.084	0.6259	17
horieť	6.016	5.569	0.3796	32
SHAME IS FIRE	**6.3765**	**4.8265**	**0.50275**	**49**
zaliať	7.388	5.445	0.9826	30
zaplaviť	5.613	3.249	0.2871	11
SHAME IS NATURAL FORCE	**6.5005**	**4.347**	**0.63485**	**41**

štipka	7.422	5.069	1.006	26
žať	5.642	3.25	0.2929	11
SHAME IS PLANT / CROP	**6.532**	**4.1595**	**0.64945**	**37**
zmyť	**9.15**	**5.282**	**3.333**	**28**
SHAME IS DIRT				