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“Semantic and conceptual analysis of figurative expressions of emotions: A corpus investigation of the synonym pairs *worry&anxiety* and *euphoria&excitement*”

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To my parents

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“...If one ever wanted proof of Darwin's contention that the many expressions in humans are universal, genetically inscribed, then a few minutes by the arrivals gate in Heathrow's Terminal Four should suffice. I saw the same joy, the same uncontrollable smile, in the faces of a Nigerian earth mama, a thin-lipped Scottish granny and a pale, correct Japanese businessman as they wheeled their trolleys in and recognized a figure in the expectant crowd. Observing human variety can give pleasure, but so too can human sameness. [...] Mostly it was smiles and hugs, and in thirty-five minutes I experienced more than fifty theatrical happy endings, each one with the appearance of being slightly less well acted than the one before, until I began to feel emotionally exhausted and suspected that even the children were being insincere...”

Ian McEwan, *Enduring Love*

“...I find people confusing [...] The main reason is that people often talk using metaphors [...] The word metaphor means carrying something from one place to another, and it comes from the Greek words μετά (which means from one place to another) and φέρειν (which mean to carry) and it is when you describe something by using a word for something that it isn't. This means that the word metaphor is a metaphor...”

Mark Haddon, *The Curious Incident of the Dog in the Night-Time*

1. Introduction

Over the past three decades the investigation of metaphors, precisely of conceptual metaphors, has been of primary interest in research programs in the fields of cognitive science and cognitive linguistics. The development of the latter began primarily with Lakoff&Johnson's publication of their groundbreaking monograph *Metaphors we live by* (1980) in which the authors argue that “the human conceptual system is fundamentally metaphoric in nature” (Lakoff&Johnson 1980: 3). In other words, mental concepts structure how one perceives the world and so influence the way the individual interacts with other people. This perception of our surroundings is then reflected by the language we utter, given that language is tightly interlinked with our cognitive apparatus. In principle, the conceptual theory of metaphor (CTM) differs in several ways from previous approaches to metaphor, given that it is first and foremost a theory of metaphorical cognition rather than metaphorical language or expressions. Metaphorical mappings such as LOVE IS A JOURNEY or HAPPY IS UP are considered as instances of psychological and cognitive processing of “understanding and experiencing one kind of thing in terms of another” (Lakoff&Johnson 1980: 5). The novelty then is that metaphors are, as opposed to previous traditional views of seeing metaphors as a means of poetic flourish and the decoration of literary works, conceived as a crucially non-linguistic phenomenon. With respect to this, Lakoff (1993:

208) further argued that “what constitutes [a] metaphor is not any particular word or expression. It is the ontological mapping across conceptual domains” as well as that “conceptual metaphors are general mental mappings from a typically concrete source domain to a typically abstract target domain”.

Stefanowitsch (2006: 372) then contributed the notion of *metaphorical pattern*, being “a multi-word expression from a given source domain (SD) into which one or more specific lexical item [sic] from a given target domain have been inserted”. Patterns of that kind are reflected by conventional conceptualizations such as the aforementioned LOVE IS A JOURNEY or HAPPY IS UP, presumably not being arbitrary but very likely to be based in the physical and cultural experience of human beings in general. With respect to this, it seems that there is evidence to determine that some metaphors are common in a number of languages. This gives way to a number of critical investigations, both cross-linguistic or, as will be elaborated in the present paper, monolingual.

As a consequence, the focus of cognitive metaphor research lies predominantly in revealing general mappings applicable to certain domains rather than analyzing specific linguistic (and rhetoric) expressions that evoke those mappings. Traditional introspective methods were commonly based on the intuition of the researcher as well as an eclectic collection and investigation of individual citations in given texts. The latter approach may have a number of drawbacks, namely that it is impossible to quantify the results and, hence, determine the importance of a particular metaphor in a certain language. To put it another way, “it is difficult to establish a firm empirical basis for studying conceptual metaphor from a linguistic perspective” (Stefanowitsch 2006: 370).

One remedy to overcome these methodological shortcomings is a corpus-based approach to metaphor research, which was also chosen for the study presented in this paper. Since the extensive and often free availability of computerized corpora in the last two decades, the field of corpus linguistics has grown into a well-established area of research and its methods are increasingly being applied to the aforementioned domain of cognitive linguistics (Oster 2010: 728). Corpora nowadays contain vast quantities of data and as a consequence are especially suitable not just for quantitative studies but also for uncovering semantic and pragmatic aspects of language. Corpus linguistics has, due to a considerable number of advantages, including quantification and free availability, become ubiquitous in the academic field of language investigation in general. This was the decisive factor in selecting a corpus-based approach to conduct the study presented in this paper. In relation to this issue, one of the principal objectives of this paper is to apply the possibilities offered by electronic corpora to one of the central subject areas of cognitive linguistic research, namely the conceptual metaphoric and metonymic

behavior of emotions as well as their semantic and pragmatic evaluation.

In the field of investigating the complex nature of emotions, the Hungarian linguist Zoltán Kövecses almost holds a monopoly position. In a number of groundbreaking works he established nine basic emotion concepts, which are also frequently found in psychological literature, namely ANGER, FEAR, HAPPINESS, SADNESS, LOVE, LUST/SEXUAL DESIRE, PRIDE, SHAME and SURPRISE. All of these he examined in great detail, concerning their conceptual anchoring in the human cognitive apparatus as well as their conceptualization via concrete terminology of our everyday experiences. Stefanowitsch (2006: 369ff.) later investigated five of the above mentioned concepts by applying a corpus-based approach to metaphor extraction, as opposed to Kövecses' introspective method. In fact, it may be stated that combining CMT research with emotions and corpus methodology by no means represents a complete novelty in the field of corpus and cognitive linguistics. Nonetheless, there is still a great deal of additional research needed in order to fully understand the complex way in which emotions in general (not solely basic emotions) are conceived in the human conceptual system.

With respect to this, the principal objective of this paper is to investigate four emotions, which are not considered to be basic emotions, and have so far been neglected in metaphor as well as emotion studies. The emotion nouns under analysis in this case are two pairs of near-synonyms, namely *worry & anxiety* and *euphoria & excitement*, which opens up a completely new dimension of research, given that until now near-synonymous word pairs were indeed investigated via a corpus study, yet predominantly adjectives or adverbs and not emotion nouns. A further crucial difference to the studies conducted previously is the fact that this paper does not solely consider semantic and pragmatic aspects of the near-synonymous terms under analysis but first and foremost their metaphorical conceptualization. Regarding the latter, an exceptional impact of this study is that it could be shown that the respective near-synonyms indeed share several domains through which they seem to be comprehended in the human conceptual system, but also that a striking number of differences could be uncovered. Researchers like Kövecses (1986, 1989, 1990, 2000, 2010), Stefanowitsch (2004, 2006) and Oster (2010) have looked at a number of emotion nouns and investigated their metaphorical conceptualization, yet *worry&anxiety* and *euphoria&excitement* have never been taken into account and the focus of these studies has so far been set in examining the emotion terms separately rather than on comparing them to each other with respect to synonymy and antonymy. A further novelty lies in the fact that a number of distinct linguistic aspects are investigated in this paper. The emotion nouns are examined with regard to their metaphorical conceptualization. Even if this process reveals satisfactory

insights, the investigation does not seem to be entirely complete. The question is then addressed whether any metaphors exist that are typically associated with the respective emotions. Conceptual issues are taken into consideration as well as the semantic and pragmatic aspects that once again reveal several highly interesting findings on the linguistic expression of emotions in general, and the four emotion terms under analysis in particular. This study is relevant insofar as it looks at a number of distinct aspects of language that have heretofore indeed been investigated, but have not yet been combined into one investigation. By merging issues such as the conceptualization of emotions with the investigation of synonymy and antonymy, as well as semantic and pragmatic concepts, together in a joint project, this paper may pave the way to revolutionary findings with respect to the aforementioned categories.

This paper is divided into two separate sections. PART I – Theory Review is dedicated to reviewing the literature that has been published so far in the fields of CMT, emotions and embodiment, semantic preference and prosody as well as synonymy and antonymy. PART II – Empirical study is broadly concerned with the presentation, analysis, and interpretation of the results obtained through the corpus query. PART I begins with an overview of the Conceptual Metaphor Theory and the impact on cognitive linguistics in Chapter 2.1. This chapter also features the portrayal of different kinds of conceptual metaphors, the related domain of conceptual metonymy, and a section that critically looks at CMT as well as the issue of universality or culture-specificity. Chapter 2.2 is equally devoted to aspects of CMT, yet with a distinct focus on emotions and their neural grounding in embodiment. In this chapter I critically analyze the conceptual structure of emotions, general embodiment, and the embodiment of emotions. I then address the question of whether any metaphors exist that are more typically associated with certain emotions as well as universality and cultural variation in the conceptualization of emotions. The principal objective of Chapter 3 is to present the concepts of collocation, semantic preference, and semantic prosody as well as their relevance to the investigation at hand. This is followed by a detailed investigation of (near) synonymy, antonymy and their remarkable role in language in Chapter 4. Latter also portrays each of the emotion nouns, *worry & anxiety* and *euphoria & excitement*, separately and further displays the rationale for choosing those four items.

As aforementioned, PART II – Empirical study, is dedicated to presenting, analyzing, and interpreting the results obtained in the examination. In Chapter 5 I commence with outlining the decisive factors for choosing a corpus-based approach for this study and in particular the choice of the *Corpus of Contemporary American English* (COCA). The exact methodology of extracting instances of

metaphorical mappings from the corpus, the statistical calculation of emotion-specific metaphors, and the search process for semantic fields will be taken into account. With respect to metaphor extraction, I selected a method first proposed by Stefanowitsch (2006: 371 ff.), namely *Metaphorical Pattern Analysis* (MPA). It may be argued that this approach was by no means as straight forward as it seems, given that in general conceptual metaphors are not tied to specific lexical items and in a vast number of cases do not contain lexical items from the target domain. These facts presented a slight challenge for the investigation, for a corpus query reveals solely conceptual metaphors literally containing the target domain item (here *worry & anxiety* and *euphoria & excitement*). MPA may arguably capture only a subset of metaphorical expressions related to the respective emotions, but nonetheless it may be claimed with confidence that MPA still seems to be superior than traditional introspective methods with regards to the quantity of metaphors that can be uncovered. In fact, Stefanowitsch (2006: 369,109) proved in his investigation that applying MPA did not only reveal all of the metaphors presented in the previous literature but also helped to extract additional metaphors. Given all of this, even though this study may have faced a number of challenges and limitations, it can certainly be argued that the application of MPA was a reasonable choice given that the results obtained are highly satisfactory overall. These results are displayed in Chapter 6, which concerns the presentation and investigation of conceptual metaphors, metaphor subtypes and conceptual metonymies encountered in the scrutiny.

Chapter 6 is further divided into separate analyses of each respective emotion noun, including the comparison between *worry & anxiety* and *euphoria & excitement* as well as a section devoted to comparing all four terms amongst one another. One of the major findings was that, as had been elaborated in the theory review, the abstract domain of emotions shows great likelihood to be conceptualized via the terminology of concrete things. Concerning the present case, *worry & anxiety* as well as *euphoria & excitement* exhibit a clear preference for the conceptual mappings X IS A LIVING ORGANISM/ANIMATE BEING, X IS A CONCRETE/PHYSICAL OBJECT and X IS A LIQUID/GASEOUS SUBSTANCE IN A CONTAINER, particularly the latter in which the human body is conceived as the metaphorical container which seems to “contain” these substances. All three of these domains were found to be the three most frequent ways of conceptualizing the four emotions under analysis, however in a slightly different order of occurrence respectively. The widely discussed CONTAINER mapping was also uncovered alongside all four terms, yet it must be argued that this source domain appeared to be far less prominent than others. Apart from this the COCA query revealed a number of additional relevant results, showing that while there were indeed several conceptual

metaphors encountered already listed in the existing literature, some unique new source domains could also be withdrawn. This outcome may arguably be based on the challenge of naming the source-target domain mappings as well as on sorting the respective collocates, yet it can be claimed with confidence that investigating emotions other than the aforementioned basic emotions clearly helped to gain genuine new insights about the conceptualization of emotions in general and the four terms under analysis in particular, and that, however detailed a study may be, it will hardly be one hundred percent complete. Section 6.4 is dedicated to investigating whether any metaphors exist that are more typically associated with one emotion or another. In relation to this, statistical significance was calculated via the methodology of *Pearson's Chi-Square Test*, which offers information on the issue if the distribution of the data is statistically sound or simply random. What was discovered with respect to the investigation at hand was that there indeed seem to be some conceptual metaphors more closely related to one metaphor than to others. The overall distribution, however, turned out to be below the level of significance. Despite this it will be argued in Section 6.4 that the dispersion is by no means completely arbitrary.

Chapter 7 is then dedicated to displaying the results encountered with respect to semantic preference and semantic prosody. In short, it may be stated that it was highly interesting to discover that the respective near-synonyms indeed exhibit a similar prosody, yet also appear to show a clear preference for different collocates and as a result semantic fields. The latter certainly confirmed the assertion that synonyms are not fully interchangeable in different contexts.

In conclusion, it may be stated that even though the present investigation allowed a number of relevant questions to be answered with respect to the conceptualization of non-basic emotions as well as synonymy and antonymy, there is certainly a great deal of more research required in order to fully comprehend these complex phenomena. The final portion of the paper addresses these issues as well as the limitations and restrictions faced while conducting the study and during the interpretation of the results obtained.

PART I – Theory Review

2. The Conceptual Metaphor Theory

2.1 The Conceptual Metaphor Theory – an overview

2.1.1 Metaphors and Conceptual Metaphorical Mappings

Metaphor, originating from the Greek *metapherein*, meaning “to transfer”, is in principle a figure of speech in which a word or expression is used to describe something that is not literally denoted. As elaborated in the *Oxford Concise Dictionary of Linguistics*, a *metaphor* is “a figure of speech in which a word or expression normally used for one kind of object, action etc. is extended to another” (Matthews 1997: 224). It is a widely shared view, both amongst scholars as well as in the popular mind, that metaphor is merely a linguistic phenomenon: a rhetoric device applied to decorate works of poetry and literature, thus too enigmatic for scientific or everyday language (Gibbs 1996: 309). This common assumption can be dated back to the ancient Greeks and philosophers such as Aristotle, who in his work *Rhetoric* linguistically examined the metaphor. He stated that it is predominantly used as a stylistic and decorative function; only certain eloquent poets being able to use it adequately, given that it is the mark of genius (M. White 1996: 10).

Another common belief is that metaphor is exclusively based on a resemblance between the two entities that are identified and compared (Kövecses 2010: iX). This should be exemplified with the phrase “*Lisa is a snake*”, a metaphor with widespread use in many languages that reasonably gives cause to argue that the person (here, Lisa) must share some features with a snake in order for speakers to be able to use the word *snake* as a metaphor for her. This definition goes partly hand in hand with the description obtained from the *Oxford Concise Dictionary of Linguistics*. Glucksberg & McGlone (1999: 1541) argue that even a traditional view of linguistics treats utterances like the above stated as false or uninterpretable, unless they could be transferred into a simile. Thus, *Lisa is a snake* would be perceived as being false, whereas *Lisa is like a snake*, acceptable. A problem that arises with respect to this argumentation is that, generally speaking, any two things can be similar in certain ways. The question is, instead, how those similarities that appear to motivate the simile should be defined (Glucksberg & McGlone 1999: 1541).

Further, it is a commonplace belief that metaphor is always a “conscious and deliberate use of words”, implying that one must have a special talent in order to apply it and use it in an adequate way (Kövecses 2010: iX). Hence, it is frequently held that metaphor is solely a figure of speech that language could easily do without. Given its presumable function as a device of “poetic imagination and [...] rhetorical flourish” (Lakoff & Johnson 1980: 3) metaphor is considered a matter of extraordinary

rather than everyday language, which people apply to communicate. Thus, taking the above stated assumptions into account, it is certainly reasonable that metaphor is commonly “viewed as a characteristic of language alone” (Lakoff & Johnson 1980: 3), merely being a matter of linguistics and words rather than thought, neural activity, or action. However, nowadays it is far from a novel approach that metaphors are considered as being pervasive in our everyday lives, not only in language and literature, but widely governing our conceptual system and thus underlying the “poetic structure” of the human mind (Gibbs 1996: 309 ff.). In fact, several empirical studies demonstrate that speakers also apply metaphors in everyday conversations. Bochaver & Fenko (2010) conducted research with people who were seeking psychological help and, in the course of the interview, told their “unhappy life stories”. It was in this way discovered that interviewees used a considerable number of metaphors in their narration, amongst them some conceptual metaphors (like LIFE IS A JOURNEY), which will be presented shortly. Bochaver & Fenko concluded that the “language of subjectivity is inherently metaphorical [and that] in creating their life-stories people use culturally provided symbols, myths and metaphors” (Bochaver & Fenko 2010: 244). M. B. Smith (1991: 46ff.) further argues that metaphors play an essential role in the construction of human self-consciousness. He proposes that metaphors that speakers use are “intrinsically involved in constructing who they become as persons” and subsequently states, “our metaphors make us who we are” (Smith 1991: 46).

Over the past three decades, the detailed investigation of the metaphor phenomenon has become of primary interest in research fields such as cognitive science, more precisely cognitive linguistics but also psychology and philosophy. In their groundbreaking work *Metaphors we live by* (1980) George Lakoff and Mark Johnson elaborated a completely new and revolutionary view of metaphor that powerfully challenged the existing traditional theory (Kövecses 2010: X) by introducing the *Conceptual Metaphor Framework* or *Conceptual Metaphor Theory*. Their argumentation is based on the assumption that metaphors are anchored in the human ordinary conceptual system, which is “fundamentally metaphorical in nature” (Lakoff & Johnson 1980: 3). Specifically, mental concepts structure how one perceives the world and thus influence the way one interacts with fellow beings. This perception of our surroundings is then reflected by the language we utter, given that language is tightly interlinked with our cognitive apparatus. Thus, the conceptual system plays an essential role when it comes to defining our everyday realities even though this is by no means something that we are usually aware of. In order to encounter deeper insights into the widely discussed conceptual system, Lakoff and

Johnson (1980: 4) suggest that we must look at language, “since communication is based on the same conceptual system that we use in thinking and acting”.

In this context, the first innovation concerning the study of metaphor was the assertion that metaphor is a property of concepts rather than solely words or linguistic expressions, due to which it may be stated that the additional function of metaphor is to comprehend the nature of certain concepts and its principal purpose is not merely artistic or esthetic (Kövecses 2010: X). Clearly, the claim of metaphor being pervasive, both in thought and everyday language, further implies that this phenomenon is definitely not restricted to the competence of especially talented people and is far from being simply a superfluous poetic adornment (Stefanowitsch 2005: 161).

One of the most striking innovations in account of the *Conceptual Metaphor Theory*, was, however, opposed to the traditional belief of metaphor being predominantly based on certain similarities: the discovery that “*the essence of metaphor is understanding and experiencing one kind of thing in terms of another*” (Lakoff & Johnson 1980: 5, italics taken from the original source). In other words, concept A is understood and processed via the verbalization of concept B. Thereby, the phrase “to understand” is used to characterize the relationship between two concepts in metaphorical processing. Here, the terminology of a certain (usually more concrete) source domain is applied for describing the (generally more abstract) target domain concept. According to Kövecses (2010: 7) there exists a set of systematic correspondences between the source and the target domain concept, in the sense that “constituent conceptual elements of B correspond to constituent elements of A”. In the literature, these correspondences are often referred to a source-to-target-domain or metaphorical mappings. In order to demonstrate how these metaphorical mappings are defined, it is worth considering the following classic examples elaborated by Lakoff & Johnson (1980: 4). The capital letters state the conceptual metaphors, respectively, and italics are used to describe the corresponding metaphorical linguistic expressions. The latter are simply words that derive from the terminology of the more concrete source domain.

ARGUMENT IS WAR

Your claims are *indefensible*
He *attacked* a very weak point in my argumentation
I never *won* an argument with him
[...]

As can be comprehended from the above example, English speakers apparently talk about discussions and arguments using the terminology of war; one can win or lose an argument, attack points in an

argumentation, defend one's argument, or even shoot down another person's arguments. The target domain (TD) is thus the concept of ARGUMENT and the source domain (SD) the concept of WAR. Hereby, it is clearly discernible that the TD concept belongs to a rather abstract semantic category, given that arguments are neither physically tangible nor is it easily feasible to visualize how an argument should be depicted in concrete terms. In contrast, war is deeply anchored in human culture and portraying a battle in one's mind is simpler and can be done in a more straightforward way. Thus, WAR demonstrates the more concrete SD concept. However, it is worth noting that we do not just *speak* about arguments in terms of war; the above description that we can win, lose, or defend arguments leads to the conclusion that arguments are actually neurologically conceptualized in terms of wars (Lakoff & Johnson 1980: 4). Indeed, it is not meant that arguments are in any kind subspecies of war; ARGUMENT is simply partially structured, understood, performed, and talked about in terms of WAR.

The concept, the activity, and, as a consequence, the language are metaphorically structured. A second classic example given by Lakoff & Johnson (1980: 7) that elucidates the way metaphorical expressions found in everyday language provide insights into the metaphorical nature of concepts is the metaphorical mapping TIME IS MONEY, which reflects our contemporary cultural understanding of valuable commodities.

TIME IS MONEY

You're *wasting* my time
 I don't have the time *to give* you
 I've *invested* a lot of time *in* her
 You're *running out* of time
 The flat tire *cost* me an hour
 Is that *worth* your while?
 [...]

It is certain that in Western cultures time is a limited resource and thus a valuable commodity. Long working hours are typically associated with the working process, which consequently causes time to be precisely quantified, and so money as well. The above example demonstrates in a very illustrative way how an abstract target domain (time) is conceptualized and thus understood via the terminology of a more concrete source domain (money) (Lakoff&Johnson 1980: 8).

A systematic set of correspondences is also present in conceptual metaphorical mappings such as LOVE IS A JOURNEY or SOCIAL ORGANIZATIONS ARE PLANTS. Taking the first example into account, JOURNEY is considered to be the source domain and LOVE the target domain; given this

interpretation, it is further possible to explain mappings between individual constituent elements of the source and the target domains (Kövecses 2010: 8):

Source: JOURNEY		Target: LOVE
the travelers	→	the lovers
the vehicle	→	the love relationship itself
the journey	→	events in the relationship
the obstacles encountered	→	the difficulties experienced
[...]		

In the above depiction of the conceptual metaphor LOVE IS A JOURNEY, several of the constituent elements of conceptual domain A systematically correspond to elements of conceptual domain B; the abstract target domain LOVE is conceived in terms of the more concrete source domain JOURNEY. Moreover, the conceptualization of the source is being mapped onto the target concept as a complete system. Not only do we construe one concept in terms of the other, respectively, we also encounter a pattern of certain similarities within the various constituent aspects. However, having discussed this point, it is of great importance to notice that these systematic mappings happen in a largely unconscious manner and are not usually made obvious when used during conversation. An equally vivid conventionalized conceptual metaphor is the example SOCIAL ORGANIZATIONS ARE PLANTS, which seems to be characterized by the following set of mappings (Kövecses 2010: 10):

Source: PLANT		Target: SOCIAL ORGNIZATION
the whole plant	→	the entire organization
a part of the plant (e.g. branch)	→	a part of the organization
<i>growth</i> of the plant	→	development of the organization
the <i>root</i> of the plant	→	the origin of the organization
the <i>flowering, blossoming</i>	→	the most successful stage
the <i>fruits</i> or <i>crops</i>	→	the beneficial consequence
[...]		

It is apparent that constituent elements of plants are being systematically mapped onto those of social organizations, such as companies, as can be seen in the example sentences “He works for the local *branch* of the bank” and “Our company is *growing*”. Again, the words in italics mark metaphorical linguistic expressions that are applied to the respective conceptualizations.

The preceding analysis was an attempt to manifest widely shared views about metaphor that are traditionally held in the popular mind but also amongst scholars, and consequently introduce a different revolutionary approach, namely that metaphors are by no means a merely linguistic phenomenon used to adorn works of poetry and literature, but are indeed highly pervasive in everyday language, thought, and action. The examples given manifest in a straightforward manner how certain mental

conceptualizations are presumed to be metaphorically mapped from source to target conceptual domains. In the following sub-chapter different kinds of metaphor will be elaborated on and discussed.

2.1.2 Types of Conceptual Metaphors

Understanding and conceiving figurative language or mental conceptualizations seems to reveal a certain “poetic structure of the mind” (Gibbs 1994: 80) or, put differently, that people tend to think via the terminology of metaphor and see the world in terms of these (Gibbs 2004: 1191ff.). In relation to this assumption, conceptual metaphors can be classified according to their underlying cognitive functions. Three distinct kinds of conceptual metaphors can be distinguished: structural, orientational, and ontological metaphors. A discussion of these follows.

a) Structural Metaphors

The metaphors displayed in the last section can all be classified as structural metaphors, one concept being metaphorically structured in terms of another. The source domain concept provides a considerably extensive knowledge structure for the target domain concept. This means that “the cognitive function of these metaphors is to enable speakers to understand target A by means of the structure of source B” (Kövecses 2010: 37). As has been elaborated in the preceding chapter, understanding takes place through systematic conceptual mappings between elements of A and certain corresponding elements of B.

b) Orientational Metaphors

Orientational metaphors are based in another kind of metaphorical concept that does not only “structure one concept in terms of another but, instead, organizes a whole system of concepts with respect to one another” (Lakoff and Johnson 1980: 14). The classification into orientational metaphors derives from the fact that most of these metaphors are tightly connected to spatial orientation, be it up-down, in-out, front-back, on-off, or central-peripheral. These spatial orientations are claimed to arise from the fact that all human beings possess bodies of similar form that are in a certain manner spatially placed in the physical environment. Within orientational metaphors the conceptual domain underlies a spatial orientation, as can be seen in the sample conceptual metaphor HAPPY IS UP. This conceptualization leads to contemporary English expressions such as “I’m feeling *up* today” (Lakoff and Johnson 1980: 15). These metaphorical orientations are by no means arbitrary, rather, they are based in the human

physical and cultural everyday experience. However, although physical in nature, polar oppositions such as up-down or in-out may vary from culture to culture. An example can be provided by the fact that in most Western cultures “future” is conceptualized as being in front of us, while in other cultures it was found to be placed in the back. In *Metaphors We Live By* (1980: 14 – 19) Lakoff & Johnson suggest various up-down specialization metaphors, such as HAPPY IS UP- SAD IS DOWN, MORE IS UP- LESS IS DOWN, GOOD IS UP- BAD IS DOWN, RATIONAL IS UP- EMOTIONAL IS DOWN, etc., and further explain the physical basis obtained from taking the physical environment into account. The first example, HAPPY IS UP- SAD IS DOWN, is clearly in agreement with our cultural experience that a worn out and drooping posture usually corresponds to sadness and depression, whereas an erect posture seems to be connected with positive emotional states. Secondly, looking at the last example, RATIONAL IS UP- EMOTIONAL IS DOWN, the physical and cultural basis seems to be grounded in the fact that humans, due to their erect posture, view themselves as being in control of animals, plants, and the majority of the physical environment as such. Also, in terms of humans’ unique ability of rational thinking, they perceive themselves above other beings, which again ascribes them a certain control; “CONTROL IS UP thus provides a basis for MAN IS UP and therefore RATIONAL IS UP” (Lakoff and Johnson 1980: 17). Regarding emotional states, on the other hand, one is not in control of oneself, which as a consequence provides evidence for the metaphorical mapping EMOTIONAL IS DOWN. An example for the latter may be seen in the sentence “Today I’m feeling down”, a conventional expression in contemporary English.

The conclusion that can be drawn from the above examples is that many fundamental concepts about experiential grounding are organized via one or more spatialization metaphors (Lynott & Coventry 2014: 218). Further, spatialization metaphors are deeply anchored in physical and cultural experiences and are by no means randomly assigned (Lakoff & Johnson 1980: 18). With respect to this, a metaphor may serve as a vehicle for construing a concept solely by virtue of its experiential basis. Also, if there exist many possible physical and social bases for one and the same metaphor, it is the coherence with the overall system that seems to be, partially, the cause of why one particular system is chosen over another. In relation to the latter, which metaphorical system is in fact chosen may vary from culture to culture, given that the physical environment may be experienced in slightly different ways in various cultures- which again leads to fine-grained or even significant discrepancies. This fact will be discussed in more detailed in following sections.

c) Ontological Metaphors (Entity and Substance Metaphors)

Apart from spatial orientation, the human experience with physical objects and substances provides further basis for the understanding and perception of surroundings. “Once we can identify our experiences as entities or substances we can refer to them, categorize them, group them [...] and quantify them- and, by this means, reason about them” (Lakoff & Johnson 1980: 25). Similar to the basic experiences of human spatial orientation, our experience with physical objects, especially with our own bodies, fundamentally serves as provision for a remarkably wide variety of ontological metaphors or, rather, ways of viewing events, actions, emotions, ideas, etc. in terms of entities, substances, or both. According to Lakoff & Johnson (1980: 26 – 31) and Kövecses (2010: 38, 39), ontological metaphors serve various purposes. However, in many cases they are applied to viewing an abstract category as something concrete, which allows referring to it, quantifying it, identifying a particular aspect of it, and even seeing it as a causal factor. It is worth noting that we tend to view abstraction in terms of concrete physical entities in order to attempt rational understanding. However, similarly to orientational metaphors, most of the expressions containing ontological metaphors are not directly interpreted as being metaphorical; the metaphorical concepts are mentally structured and happen in an unconscious manner during mental neurological processing. Demonstrations of two of the most fruitful ontological source domains for metaphor, *container metaphors* and *personification*, follow (Lakoff & Johnson 1980: 29ff., 33).

Container Metaphors

Humans are physical beings who possess similar bodies. These bodies are viewed as bounded entities set apart from the rest of the physical environment, which one experiences as outside of this entity. Thus, each of us can be interpreted as a *container* with an in- and outside orientation (Gibbs 2004: 1195, 1196). Through this we also conceive abstract experiences in terms of objects, substances, and containers that are in some way bounded by surfaces (Kövecses 2010: 38). In our everyday lives we constantly move *into* certain containers and then again *out of* them, so that we also apply this conceptualization to solid objects and as a consequence tend to apply our knowledge to abstraction. Even if the boundaries seem to be somewhat fuzzy, the human cognitive apparatus tends to prefer conceptualizations in terms of concrete objects with clear boundaries in order to fulfill the act of quantification. Moving a step further, substances can be construed as CONTAINER SUBSTANCES being inside a CONTAINER OBJECT, whereby the latter manifests definite boundaries (Lakoff & Johnson 1980: 30).

In addition to simple CONTAINER and SUBSTANCE conceptualizations, there exist several subcategories; for example, viewing the visual field as a container by conceptualizing what we perceive as being *inside of* it, as the term “visual *field*” suggests (Lakoff&Johnson 1980: 30). This type of metaphor is claimed to emerge naturally, given the fact that when a person looks at a certain territory, one's field of vision automatically defines a fixed boundary- what one can perceive as being *inside* this field. As already established in the above discussion, a physical space is metaphorically conceptualized as a CONTAINER, thus also the limited and clearly bounded field of vision correlates with CONTAINER metaphors, as expressions such as “He is *out of sight*” or “The ship is coming *into view*” delineate (Lakoff & Johnson 1980: 30).

A further subcategory of ontological metaphors is used to describe events, actions, activities, and states. According to Lakoff & Johnson (1980: 30ff.) events and actions tend to be conceptualized metaphorically as objects; activities as substances; and emotional states as containers. The latter, especially, will be of great interest in this work's analysis, where the metaphorical conceptualizations of four emotion terms, *worry & anxiety* and *euphoria & excitement* will be elaborated on in detail. Examples of emotional states viewed as containers are figurative expressions, such as “He is in love” or “He entered a state of euphoria” (Lakoff & Johnson 1980: 32).

Personification- Living Organisms

Another fruitful category of ontological metaphors is the one in which the physical objects used for metaphorical conceptualization are further specified as human beings or living organisms in general. This allows us to understand a great variety of non-human entities in terms of human characteristics and activities; in these cases, non-human things are defined as human, or differently put: personified, further explaining the notion *personification*. Generally speaking, personification is an extension of ontological metaphors which covers a wide range of expressions, each referring to a different aspect of human beings or ways of looking at a person. The characteristic that all of these metaphors share is the fact that personification enables one to make sense of (abstract) phenomena occurring in the environment in human terms- terms that we are familiar with, given that they are based in our own actions, motivations, goals, and characteristics (Lakoff & Johnson 1980: 34).

2.1.3 Conceptual Metonymy

The conceptual metaphor is not the only “trope” that plays a significant role in human conceptual activities; equally important, especially when it comes to the conceptualization of emotional states, is

another figure of thought, *metonymy*. Despite several similarities to metaphor, there is a distinct cognitive process underlying this phenomenon. The idea of metonymy will now be characterized in terms of a cognitive linguistic view, followed by a discussion of the distinctions of both figures of thought, the conceptual metaphor and the conceptual metonymy.

In traditional rhetoric, metonymy is conceived as a “figure of speech based on an interrelation between closely associated terms- cause and effect, possessor and possessed [...]” (Riemer 2010: 249) or “a figure of speech in which a word or expression normally or strictly used of one thing is used of something physically or otherwise associated with it [...]” (Matthews 1997: 224). In other words, the speaker uses one entity, or thing, to indicate or provide mental access to another entity (Kövecses 2010: 172). Traditionally, it was said in a simplified way that one kind of entity stands for a different kind of entity; from the cognitive linguistic point of view, it is, however, important to mention that as with metaphor, metonymies are deeply anchored in the conceptual system and are thus also claimed to provide access to human cognitive activities through metonymic linguistic expressions. Apart from the examples given by the *Oxford Concise Dictionary of Linguistics*, there exist several other types of conceptual metonymy, such as PART FOR THE WHOLE (as in “there are many good heads in the University”), WHOLE FOR THE PART (as in “America is powerful”), AUTHOR OR PRODUCER FOR THE PRODUCT, EFFECT FOR CAUSE, PLACE FOR PRODUCT, and PLACE FOR ACTION. Kövecses (2010: 173) calls the entity that provides mental access to another entity “vehicle entity”, and the entity which is being referred to as “target entity”. However, it is essential to point out that hereby the latter is not to be confused with the notion “target domain”, which plays a significant role in the conceptual metaphor. Vehicle and target entities are contiguously related and in close conceptual proximity. It is suggested that both belong to the same conceptual domain. Kövecses defines metonymy as follows: “metonymy is a cognitive process in which one conceptual entity, the vehicle, provides mental access to another conceptual entity, the target, within the same domain or idealized cognitive model (ICM)” (2010: 173).

One of the most striking differences between metaphor and metonymy is, hence, that metaphor involves two conceptual domains whereas metonymy makes use of one single conceptual domain. The two concepts that structure metaphor are typically related through similarity; metonymy, in contrast, is based on the relationship of *contiguity* (Gibbs 1994: 321). The latter fact is fundamental for understanding the clear differences between both figures of thought. Metaphor builds on two concepts that are not directly related to each other in the human conceptual system, although in some ways

similar. The distance between both concepts is mainly anchored in the fact that one domain is typically abstract, whereas the other is usually concrete. Contrary to that, in metonymy two elements or entities are contiguously related to each other in the conceptual system within a single domain.

As has been discussed in the former analysis, the preeminent function of metaphor is to understand, or conceive, an abstract concept via the terminology of a more concrete one. Metonymy, however, functions less for the purpose of understanding; it rather seems to provide cognitive access to a target entity through a more concrete or salient vehicle entity (Kövecses 2010: 176). As with metaphor, what is taking place is a certain kind of conceptual mapping, the only difference being that it is a single mapping which takes the listener from one element of the concept to another within the same conceptual domain.

Metonymic relationships are of particular importance when it comes to the conceptualization of emotions, given that in the traditional folk model, emotions are viewed as the causes of certain physiological reactions. The emotion *anger*, for instance, is said to cause certain effects in the human body and neural system, such as increased body heat, amongst others. This cause-effect relationship between the emotion and a certain physiologic or sensorimotor body reaction can be formulated in the conceptual metonymy EFFECT FOR CAUSE, or, in this particular case BODY HEAT FOR ANGER. The corporeal effect thus stands for the actual emotion. According to Kövecses (2010: 184), conceptual metaphors such as ANGER IS HEAT emerge from a generalization of the bodily effects; analyzed further, the metonymic vehicle entity (here, body heat) turns into the source domain of the conceptual metaphor through the process of generalization. In fact, it may be suggested that many metaphors are based on some kind of metonymic motivation, deriving from conceptual metonymies such as MEMBER OF A CATEGORY FOR THE CATEGORY (Kövecses 2010: 185). This will especially come into effect when discussing the embodiment of emotions and their grounding in physiological experience.

2.1.4 Some Conceptual Metaphor Theory Criticisms

Despite its high popularity in cognitive linguistics, the Conceptual Metaphor Theory has received a number of criticisms since its introduction in 1980. Not only was there cause to argue against the methodology for extracting metaphors, whereby concepts are strongly foregrounded over words, but metaphor researchers also criticize the way in which metaphorical embodiment, or the role of a universal bodily experience and its relation to culture, was dealt with (Kövecses 2008a: 168).

At first, by taking the issue of methodology into deeper consideration, it has to be mentioned that there exists a considerable variety of approaches to identifying metaphorical constructions. The Pragglejaz Group (2007:3) presents a method referred to as “metaphor identification procedure” (MIP), which can be applied to real language discourse. First, a written text is systematically analyzed on account of metaphorical structures and expressions by determining the lexical units in the text, then for each encountered lexical unit establishing its meaning in context, and, finally, deciding if the lexical unit is used in a more basic context according to its original lexical domain, or rather contextually different. Occurring in a different context is defined via the fact that the basic meanings of the identified lexical units tend to be either “more concrete, related to bodily action, more precise, or historically older” (Pragglejaz Group 2007: 3). With this approach, researchers examine stretches of discourse following a concrete pattern and clear guidelines rather than basing the identification of (conceptual) metaphors on intuition and unsystematical exploration of one's own mental lexicon, or data encountered in dictionaries and thesauri. The Pragglejaz Group (2007: 17, 23 – 25) further criticizes that metaphor researchers, such as Kövecses, tend to take for granted which expressions are metaphorical and which are not, solely based on their own experience and intuition, despite the fact that reliability tests have shown that the decision upon when words or phrases are used literally or rather figuratively might vary considerably from person to person (Pragglejaz Group 2007: 22). Others (for example Stefanowitsch 2006: 369ff.) propose that the most reliable approach to discover metaphorical expressions is the use of real language corpora, which contain actually spoken and written discourse and thus also a natural use of figurative language as opposed to the intuitive mind of various researchers. Kövecses (2008a: 169) responds that he basically agrees with the above objections, however, argues that none of those criticisms could invalidate the methodology traditionally applied in the practice of CMT, given that the systematic filtering of metaphor in natural discourse only affects metaphors at the individual level, disregarding those on the supra- or sub-individual level. Metaphors on the supra-individual level are defined as “decontextualized metaphorical linguistic expressions (e.g., in dictionaries) on the basis of which we can suggest certain conceptual metaphors” (Kövecses 2008a: 169), while the sub-individual level is referred to as being the one where metaphors receive their physical, bodily, and cultural motivation.

Stating another point of criticism, Ibarretxe-Antuñano (2013: 316ff.) points out that authors such as Lakoff & Johnson (1980) and Lakoff & Turner (1989), who are indeed pioneers in the study of the conceptual metaphor, solely write in the English language and base their examples mostly on English

or, only marginally, on other Western cultures. Apart from agreeing with the latter argument, McGlone (2007: 109ff.) seems to doubt the existence of a universal conceptual metaphor framework and critically examines its explanatory value. He challenges Lakoff's (1993: 227 – 228) assertion that our knowledge of abstract concepts is always literally allocated to our knowledge of concrete concepts with the argumentation that a conceptual system arranged in this way would be incapable of generating propositions about abstract concepts with figurative intent (McGlone 2007: 112). McGlone (2007: 113) supports this argument by presenting several examples which partly refute Lakoff's theories. In account of the hypothesized conceptual metaphorical mapping THEORIES ARE BUILDINGS, inferred from idiomatic expressions such as “she constructed a theory” or “the theory is built on shaky ground”, Lakoff & Johnson (1980: 177) suggested that we do not understand *theories* in any real sense and can only apply our knowledge of buildings to understand any theory's properties. The claim that we understand theories solely in terms of buildings would further imply that one could occasionally make inaccurate inferences, such as “theories have stairwells, hallways or windows”; it is, however, questionable if people have ever made erroneous inferences of this kind (McGlone 2007: 113).

A further widely spread criticism of CMT concerns the issue of metaphorical embodiment. The latter will be discussed in the subsequent chapter and is clearly one of the key elements in cognitive conceptual linguistic theories, where the human body and its experience with the physical environment plays a fundamental role. However, it was pointed out by several researchers (e.g. Ibarretxe-Antuñano 2013: 323, 324; Rakova 2002: 228ff.) that an over-extensive focus on embodiment might lead to contradictions within the theory, given that the embodiment theory attempts to equally account for universality as well as for culture specificity. Rakova (2002: 218ff.) indeed accepts that experientialism, which is the grounding of conceptualizations in bodily experience and projection of kinesthetic image schemes onto abstract concepts, is an illustrative and valuable theory. On the other hand, she argues that some of the claims proposed in Lakoff & Johnson's *Metaphors we live by* (1980) are not only philosophically inconsistent, but can even be partially refuted by empirical evidence. She heavily criticizes the body as a container schema (Rakova 2002: 220) with the argumentation that the body can indeed account for concrete conceptualizations built on clear and limiting boundaries. She argues that this is not so for container concepts with fuzzy and blurred borders, as would therefore contradict the actual human sensorimotor experience.

Furthermore, Rakova asserts that similar, or even equal, bodily and neural experiences shared by all human beings cannot, at the same time, explain the cultural variety and universality of metaphors

grounded on experiential bases (Rakova 2002: 228). It is undoubtedly true that some of the examples provided by Lakoff & Johnson (1980: 56 – 60) may evoke the impression of bodily grounding being primarily linked to universal experience, arguing thus that, in a way, the universality of embodiment might automatically provide the universality of meaning in general and of certain metaphorical concepts in particular. Kövecses (2008a: 177), on the other hand, counterargues that in order to challenge these criticisms it is essential to change the very commonplace view of embodiment as being a homogeneous and monolithic factor. Rather, embodiment should be viewed as consisting of several independent components, any of which can be selected and analyzed separately according to its particular purpose in various cultures; which he termed “differential experiential focus” (Kövecses 2005; 2008a: 178).

Finally, relating back to the latter issue, it is reasonable to mention that there exists another explanation for metaphorical variation between different cultures, which is based on the assumption that “metaphorical conceptualization in natural situations occurs under two simultaneous pressures: “the pressure of embodiment and the pressure of context” (Kövecses 2008a: 179). The latter being characterized as being determined by the local culture. This dual pressure further accounts for coherence both with bodily as well as cultural grounding, hence giving reason to why some metaphors can simultaneously be based in neural embodiment and also demonstrate some slight variation from culture to culture. In relation to this discussion, the following section will be devoted to examining the issue of metaphorical universality and the role of cultural values influencing metaphorical expressions in more detail.

2.1.5 Universality and Culture Specificity- The Impact of Cultural Influence on the Conceptual Metaphor Theory

The preceding discussion of universal embodiment as opposed to cultural grounding certainly leads to the question of whether there exist any conceptual metaphors that can be found in all languages and cultures. This, however, is an issue that is impossible to fully clarify, given that there are more than 4000 languages currently spoken around the world. Yet, one attempt to discover this is to clearly cross-culturally compare certain conceptual metaphors found in one language with others in other languages in order to find out if they appear in a comparable way. Several studies on metaphorical universality, cultural variation, and the fundamental reasons for one or the other have been meticulously conducted by Kövecses (2000: 139, 164; 2010: 209, 227) and lead to the conclusion that there are indeed several

metaphors that are shared among various genetically unrelated languages. However, it was established that, simultaneously, there also appears to be considerable cultural variation when it comes to comparing hypothesized universal metaphorical conceptualizations. The reasons for the latter are mainly anchored in different cultural backgrounds, more precisely in differing physical environments, thinking models, religious beliefs, and cultural traits (Lv & Zhang 2012: 356).

According to Ibarretxe-Antuñano (2013: 318), the role of culture in cognitive linguistics on a larger scale, and the Conceptual Metaphor Theory in particular, is an essential key concept that cannot be omitted under any circumstances. She acknowledges that at the time when the Conceptual Metaphor Theory was first introduced by Lakoff & Johnson (1980), the importance of culture was ascribed a certain value. Yet, she points out that in the following decades the metaphor framework has undergone different phases, during which the role of culture remained relatively unnoticed or was even ignored. She thus heavily criticizes this development. In principle, Ibarretxe-Antuñano (2013: 318) agrees with the theory of embodiment, which accounts for a number of conceptual metaphors, though argues that any experience, even if bodily grounded, can under no means be dislocated from culture. Thus, “every conceptual metaphor carries a cultural load” and should be treated “as any other necessary ingredient in metaphor theory” (318). Her major criticism concerns a trend which started in the mid 1990’s and primarily focuses on the so-called primary or universal metaphors that are claimed to be solely grounded in embodiment, opposed to complex metaphors, and which are assumed to result from a combination of primary metaphors and certain cultural elements. Given that all human beings around the world possess the same bodies, it was as a supposed consequence that they should undergo the same sensorimotor or neural bodily experiences, which is why culture could easily be left aside. In her article, *The Relationship Between Conceptual Metaphor and Culture*, Ibarretxe-Antuñano (2013: 325ff.) proposes a counterexample, based on research by Nick Evans and David Wilkins (2000), which clearly refutes the assumption that all bodily grounded conceptual metaphors are universal. Her argumentation builds on Eve Sweetser's (1990) influential analysis of English perception verbs, whereby she introduces the general conceptual mapping UNDERSTANDING/KNOWING IS SEEING, as in “I *see* your point”. This metaphor is claimed to be universal amongst all cultures and languages in the world, as vision seems to be our main source of information about our physical surroundings and is presumed to function exactly in the same way for every human being (Sweetser 1990: 38-39). In fact, the UNDERSTANDING/KNOWING IS SEEING conceptual mapping was treated as a prototype example for primary metaphors in the cognitive linguistic literature. Although it might be certainly true

that this conceptual metaphor is relatively widespread in a number of different languages, it has to be pointed out that there exist several studies that challenge the universal character of this metaphor. By analyzing more than sixty Australian aboriginal languages, Evans and Wilkins (2000: 567) discovered that the above mentioned mapping does not occur in these scrutinized languages. Instead of linking knowledge and vision, as it appears to happen in English, the Australian languages seem to prefer hearing as the perceptual modality. Evans and Wilkins (2000: 576) reason that this preference of hearing over vision is definitely based on cultural factors, due to the fact that oral transmission is an essential part of acquiring and passing knowledge and of socialization practices in Australian aboriginal populations; as opposed to most of the Western cultures, where written testimonies are the principal medium of conveying knowledge, resulting in more importance being ascribed to visual perception. By basing her argumentation in the above-presented study, Ibarretxe-Antuñano (2013: 332) clearly proves that culture definitely plays a fundamental role even when concerning primary central metaphors, which were earlier believed to be exclusively grounded in embodiment.

On the other hand, research conducted by Kövecses (2000: 139 – 163; 2010: 195 – 209) and by Gladys Nyarko Ansah (2014) supposes that in other cases there indeed exist metaphorical overlaps and even congruence amongst various unrelated languages and cultures. Nyarko Ansah (2014: 44ff.) investigated the emotion concept FEAR in English and Akan, a West-African Kwa language, which revealed a number of similar and even equal conceptualizations within both idioms. Kövecses compared the ANGER IS A HOT FLUID IN A CONTAINER conceptual mapping across eight genetically distinct idioms (English, Hungarian, Chinese, Japanese, Zulu, Polish, Wolof, and Tahitian) and encountered similar patterns in all of the languages, even if sometimes with slightly different foci. Thereby, it could be proved that some metaphors share, at least, a “near-universal status” (Kövecses 2010: 197). Kövecses further claims that these resemblances in conceptualization preeminently result from the universal aspects of the human body that are shared among all the cultures. In more detail, he suggested that people belonging to the examined linguistic cultures seem to have “similar ideas about their bodies and [...] see themselves as undergoing the same physiological processes when in the state of anger [...] They all view their body organs as containers” (2010: 203). A common physiological response to anger might include increasing body heat, internal pressure, and redness in the neck and face area. Given that such bodily processes are a part of the everyday human experience, it may definitely be argued that the matter with which it is dealt here is conceptual in nature; humans all around the world, independent from their cultural background, seem to conceptualize being angry in a

similar way. Thus, it is anchored in an equal experiential basis. Grounding in embodiment is also the main reason that many cognitive linguists (Sweetser 1990; Kövecses 2010; Lakoff & Johnson 1980) propose in order to account for the near-universality of certain conceptual metaphors. The issue of bodily grounding will be presented in more detail in the following chapter, particularly in relation to emotion terms and the universality of human emotions.

2.2 Investigation of the Conceptualization of Emotions and Embodiment

One reason why the investigation of emotions is of particular interest is, clearly, the fact that emotions are claimed to possess “essentially a metaphoric structure” (Snaevarr 2006: 175). Or, as Kövecses (2000: 1) argues, it is a particularly remarkable feature of emotion language that it is highly figurative and dominated by conceptual metaphors and metonymies. Concerning the question of what emotions are in concrete terms, Howarth (1995: 111) argues that the standard account of emotions is that emotions involve three elements: “an inner feeling, an object and some characteristic behavior. In connection with this, the cognitive theory of emotions proposes that there are two types of feelings, namely emotions on the one hand and sensations on the other” (Solomon 1976: 132). Whereby sensations are raw feelings such as pain or intensive well-being, emotions, however, always have a cognitive component. The latter forms the basis for the assumption that metaphors and emotions have important things in common, such as Gestalt-like qualities, which further means that we tend to see the world in terms of them. In relation to this, Jean-Paul Sartre had already analyzed emotions and asserted that an “emotion is a transformation of the world” (1948: 48); thereby implicitly underlining the metaphorical nature of emotions, as metaphors can be (very basically) described as seeing one thing in the light of another.

Inspired by Lakoff & Johnson, the Hungarian linguist Zoltán Kövecses has become one of the pioneer researchers on emotional conceptualizations. Having established nine basic emotion concepts, he investigated, amongst other things, “whether there are metaphorical mappings specific to individual emotion concepts” (Stefanowitsch 2006: 370; Kövecses 2000: 35). Apart from that, he maintains the claim (already made in former publications) that emotions have a metaphoric structure of which the source domains predominantly tend to be grounded in embodiment (Snaevarr 2006: 185). Furthermore, emotions have the tendency to be bodily conceptualized in the so-called container-schema, which was already presented in more detail in the precedent sections.

This leads to further investigation of the term *embodiment* as such. Based on sensorimotor and kinesthetic experiences of the human body and the corporeal grounding of human thinking, this notion has nowhere proved to be more relevant than in the research of metaphorical conceptualizations of emotions. Not only do emotional states typically involve bodily changes and somatic responses, for instance sensorimotor muscle activity, shifts of facial expressions, and increasing face heat (and the accompanying red complexion) (all scrutinized by Niedenthal et al. (2009: 1122); Wotschak and Klann-Delius (2013); and Leung et al. (2012)), in fact, the majority of emotion metaphors also draw upon physical reactions (Díaz-Vera and Caballero 2013: 266). An example for the latter would be the metaphorical mapping ANGER IS A (HOT) FLUID IN A CONTAINER, whereby expressions such as “she is boiling with anger” (Stefanowitsch 2006: 377) are figuratively conceptualized, ANGER being the target domain (TD) and HOT FLUID IN A CONTAINER the source domain (SD). Based on corporeal perception, the dimension of embodiment is indeed regarded as the foundation of most emotion metaphors, opposed to which the socio-cultural dimension is best reflected at the level of language: the way emotion metaphors are linguistically conveyed. With respect to this, Kövecses (2008: 177) outlines that universally-shared schemata might, however, possibly be lexicalized differently in particular languages, according to cultural constraints and preferences.

2.2.1 The Conceptual Structure of Emotions

Kövecses (1986; 1988; 1990; 2000: 127; 2010: 107) suggests in his research on the conceptual structure of emotion concepts that these are principally composed of four conceptual ingredients: conceptual metaphors, conceptual metonymies, related concepts, and cognitive models. The first two, particularly, are of great interest for the present study and will thus be examined in more detail in the subsequent sections. In principle, however, it can be said that conceptual metaphors that underlie the characterization of emotion concepts are presumed to be instantiations of a general force-dynamic pattern (Kövecses 2000: 61,62), which means that source and target domain can be seen as two forceful entities in interaction, as in the *cause* of the emotion against the self, or the emotion against the self. The force-dynamic character of conceptual metaphors was also meticulously outlined by Leonard Talmy (1988: 50ff.) in his article *Force Dynamics in Language and Cognition*, in which he argues that a number of lexical items fall into systematic semantic patterns based on certain force-dynamic parameters, which consequently establish references between the physical environment and the mental-conceptual world. Inspired by Talmy's study, Kövecses (2000: 62) assumes that emotions are widely

force-dynamically motivated and proposes the following conceptual mappings for the target domain of emotions in general (Kövecses 2010: 108):

EMOTION IS A FLUID IN A CONTAINER
EMOTION IS HEAT/FIRE
EMOTION IS A NATURAL FORCE
EMOTION IS A PHYSICAL FORCE
EMOTION IS A SOCIAL SUPERIOR
EMOTION IS AN OPPONENT
EMOTION IS A CAPTIVE ANIMAL
EMOTION IS A BURDEN

Given the above mappings, one essential part of the present study will consist of investigating which of the conceptual metaphors suggested by the literature can in fact be encountered when examining the emotion terms *worry & anxiety* and *euphoria & excitement*, which additional mappings can possibly be uncovered, and whether the results yielded are based on general force-dynamic patterns or presumed universal emotion metaphors.

Taking conceptual emotion metonymies into deeper consideration, it should be mentioned again that, unlike metaphors, these involve a single conceptual domain, whereby mental access to that domain is most likely provided by a part of the same domain or reversely. Conceptual metonymies relating to emotions can largely be grouped into two types of “stand for” relationships, more precisely CAUSE OF THE EMOTION (STANDS) FOR THE EMOTION and EFFECT OF THE EMOTION (STANDS) FOR THE EMOTION, the latter tending to be more common than the former (Kövecses 2010: 108). As aforementioned, conceptual emotion metonymies arise from physiological bodily reactions that are most typically associated with a particular emotion. A red facial complexion and increasing face heat usually corresponds to the feeling of SHAME; a cold shiver, on the other hand, is rather common when somebody experiences FEAR (Nyarko Ansah 2014: 48). This further explains why certain physiological and sensorimotor experiences are applied to metonymically represent, or stand for, an emotion. The following examples are, as suggested by the literature, some representative cases of the general and relatively common metonymy EFFECT OF THE EMOTION (STANDS) FOR THE EMOTION (Kövecses 2010: 108):

BODY HEAT FOR ANGER
DROP IN BODY TEMPERATURE FOR FEAR
CHEST OUT FOR PRIDE
HAIR STRAIGHTENS OUT FOR FEAR
INCREASE IN BODY HEAT FOR LOVE
INABILITY TO BREATHE FOR LOVE
[...]

In the course of subsequent analyses, it will be of great interest if the emotion pairs under investigation equally reveal metonymic relationships that draw upon physiological body reactions or, on the other hand, are rather conceptualized in terms of experimentally grounded source domains. A detailed examination of the results yielded will be expanded upon in Chapter 6.

In order to succinctly elucidate the remaining conceptual components of emotion concepts, related concepts and cognitive models will briefly be discussed in turn. Related concepts are basically emotional conceptual domains that stand in close proximity or are strongly interrelated with each other, for instance the concepts of LOVE and FRIENDSHIP, whereby the former can develop out of the latter. Furthermore, it may legitimately be assumed that someone who is in love also “exhibit[s] the emotional attitude of friendship towards the beloved” (Kövecses 2010: 109), which implies that the domain FRIENDSHIP is automatically inherent in the domain LOVE. Hence, related concepts can be characterized as a sub-category of PART FOR WHOLE (*pars pro toto*) metonymies.

Secondly, to understand the role of cognitive models, it is essential to consider Lakoff's (1987: 5 – 7) assumption that human beings think of certain concepts as being comprised of a given quantity of members, with some members being central and others rather peripheral to the concept. The mental representations of central members are consequently claimed to form prototypical cognitive models which can be metaphoric or metonymic. The idea of prototype cognitive models derives from a branch in linguistics called prototype semantic theory, in account of which Rosch (1978: 4) proposed the famous example of prototypical birds, a sparrow being viewed as a representation of a central member of the category “bird”, whereas a duck or a kiwi are construed as marginal members and seen as rather nonprototypical. Geeraerts (2006: 79ff.) and Liu (2013: 71) use the definition “semasiological salience” to refer to a comparable phenomenon, namely the prototypicality that a certain member of a category demonstrates to have in account of this very category. One example that is provided is when the word “‘car’ is used for a passenger vehicle that shares characteristics both of a car and a van, it means that ‘car’ is more prototypical for this type of vehicle and hence has more semiological salience” (Liu 2013: 71). Similar categorization processes can take place mentally when it comes to conceptualizing a certain emotion. Some physiological reactions or source domains might be more closely associated with the emotions, whereas others just stand in a loose relationship or else do not form part of that cognitive model in any sense. The cognitive processes involved in semasiological decision-making operations are in fact comparable to those inherent in “construal”, a salient key concept in cognitive

linguistics. Construal operations comprise “judgment/comparison”, “selection”, and “viewpoint” (Langacker 2008, in Liu 2013: 72).

Concerning the discussion regarding conceptual domains of emotion concepts, it is suggested that conceptual metaphors, conceptual metonymies, and related concepts all converge into a prototypical model (or models) for particular emotions (Kövecses 2010: 109). Those models are seen as a rather controversial issue and are frequently also perceived as typical folk theories and generally as non-scientific understandings of certain emotions (Kövecses 1990, in Kövecses 2010: 109). Differently put, human beings tend to have a general idea of what emotions are or feel like, given that various causes (outside or inside the human body) lead to emotions and, consequently, the emotions we experience make us (or rather our body) produce particular responses. In terms of the latter, different cultures may consider different responses as socially acceptable, which is again why various cultures may impose a slightly different understanding of the folk theoretic models.

2.2.2 General Embodiment and the Embodiment of Emotions

An important issue regarding the investigation of emotions has already been raised in the introduction of this chapter: *embodiment*. A number of authors claim (Coutinho & Cangelosi 2007; Wotschak & Klann-Delius 2013; Niedenthal et al. 2009; and others) that emotions and the associated emotion concepts are fundamentally grounded in neural embodiment and experientialism. However, it must be argued that the term *embodiment* is relatively complex in nature and, hence, a difficult concept in cognitive linguistics and cognitive science on a larger scale.

Rohrer (2007, in Kövecses 2010: 116) proposes that this concept can be interpreted in various different ways, including embodied metonymies, embodied metaphors, image-schemas, and phenomenological “feeling-tones”. By linking the aspect of embodiment to emotions (it has already been discussed that emotion metonymies build on sensorimotor responses that are associated with certain emotion concepts), it can be concluded that within metonymies emotion concepts are largely based on the human physiological experience. As a consequence it may clearly be argued that metonymical expressions represent the characteristics of what is referred to as embodiment.

As aforementioned, conceptual metaphors partly build on so-called image-schemas, whereby the CONTAINER and the FORCE schema play an eminent role concerning the conceptualization of emotion concepts (Kövecses 2010: 117). In the former case, the human body is conceived as a CONTAINER in which the emotions, largely represented by certain states of affairs or events, tend to

happen. The latter has already been discussed in more detail, namely that the cause-force schema (Talmy 1988: 54ff.) represents the interaction between the emotional self and the emotion, which can be conceptualized both in- and outside the human body. It can, thus, definitely be argued that those two image-schemas are based on physical bodily experience, in other words, grounded in embodiment, and are, according to Kövecses (1990; 2000; 2010: 119), fundamental ingredients for the conceptualization of emotions in general. However, it is important to mention that the above-discussed image-schemas are not the only source domains which build a rich basis for the motivation of conceptual emotion metaphors; other relevant mappings constitute metaphorical mappings such as EMOTION IS A FORCE IN A CONTAINER, A PHYSICAL FORCE, A NATURAL FORCE, A BURDEN, and several others. It can clearly be argued that these source domains reflect basic physical, natural, biological, and social experiences – all having certain effects on the human body and therefore further explaining why emotion concepts are claimed to be grounded in embodiment.

When discussing the notion of neural embodiment, phenomenological feeling-tones of our experience of emotions also come into play; each emotion has certain bodily feelings with which it is most typically associated. For example, “being in love” might feel similar to being tickled, intoxicated, drunk, or warm. Given fusions of emotional with non-emotional experiences can therefore provide a very productive motivational basis for the embodiment of a number of emotions.

Taking the various above-mentioned kinds of emotional grounding in embodiment into account, we may summarize the following with a general definition provided by Raymond Gibbs in

Embodiment and Cognitive Science:

[...] People's subjective, felt experiences of their bodies in action provide part of the fundamental grounding for cognition and language. Cognition is what occurs when the body engages in the physical, cultural worlds and must be studied in terms of the dynamic interactions between people and the environment. Human language and thought emerge from recurring patterns of embodied activity that constrain ongoing intelligent behavior. [Therefore] [w]e must not assume cognition to be purely internal, symbolic, computational and disembodied, but seek out the gross and detailed ways in which language and thought are inextricably shaped by embodied action. (Gibbs 2006: 9)

Given this detailed definition of what is largely understood by embodiment, it may easily be suggested that those mentioned “subjective, felt experiences of [our] bodies” in motion build the basis for making our emotion concepts grounded or embodied. Moreover, given Gibbs' argumentation, this definition may be applied to human language and thought in general, as according to his view both language and cognition are embodied. This largely forms the basis for the assumption that bodily grounded concepts

in a wider sense, and embodied emotions in particular, should be universal (or at least near-universal) amongst all human beings and cultures, as in fact all humans share the same kinds of bodies and also similar ways of physical experience and interaction with the environment. While different approaches to the universality of conceptual metaphors and cultural variation have already been discussed in former sections, the universality and culture-specificity of emotions will be expanded on in Section 2.2.4.

In the course of this section it has been demonstrated that the conceptual structure of emotions is basically comprised of four components: conceptual metaphor, conceptual metonymy, related concepts, and cognitive/cultural models, whereby the latter two derive from the former two. Emotions are abstract categories which, in order to be fully understood, are conceptualized in concrete terms and therefore premise upon the concrete interaction between the self and the physical environment which human beings experience in their day-to-day life. It was thus argued that both conceptual metaphors and metonymies are grounded in (neural) physiological embodiment. It can additionally be said that the embodiment hypothesis further stretches to other abstract mental concepts or language and cognition in general, as has been argued by Gibbs (2006: 9).

2.2.3 Are There Any Emotion-Specific Metaphors?

The general question that has to be asked in this section is whether there are in fact any metaphorical source domains that are unique to certain specific emotions or the concept of emotion on a larger scale. That is, are particular source domains of emotions applied outside the understanding of emotions, or solely inside it? This issue is especially important given that it can help illuminate a new dimension for understanding the conceptual structure of the human mind. As has been discussed in former chapters, emotions are abstract concepts that tend to be conceptualized in terms of concrete objects and happenings; an interesting idea is, hence, to find out if this abstract domain is conceptualized in a unique way or rather if we understand it via source domain concepts that are also shared by other non-emotional, or even non-abstract, concepts in their metaphorical comprehension. Kövecses (2000: 35) argues that “source domains of conceptual metaphors do not have unlimited applications”, in other words, specific source domains solely apply to a clearly identifiable area of target concepts. Further, he points out that in account of the above question, four related issues have to be considered. These issues are: whether there are “metaphorical source domains of emotions specific to one emotion; [whether

they are] specific to a subset of emotions”, and if there are metaphors specific to all emotions in general or if they extend beyond the domain of emotion (Kövecses 2000: 35).

In his highly relevant work, *Metaphor and Emotion*, Kövecses (2000: 20ff.) proposes that in relation to every emotion there exist some metaphors significantly associated with particular emotion terms. He bases some of his assumptions on existing literature and research conducted by Lakoff & Johnson (1980), Lakoff (1987), Lakoff & Turner (1998), Sweetser (1990), and Gibbs (1994) and thereafter argues for the detailed investigation of nine basic emotion concepts that have received the most attention from scholars in this field. These are *anger*, *fear*, *happiness*, *sadness*, *love*, *lust*, *pride*, *shame*, and *surprise* and are claimed to be representatives of culturally universal prototypical emotions. Kövecses (2000: 21ff.) begins his chapter with metaphors typically associated with the concept ANGER, already scrutinized in former studies from a cognitive-semantic point of view (Lakoff 1987; Gibbs 1994) and in account of universality or culture-specificity (Kövecses 2000: 47). He elaborates on the presumption that there are indeed a number of source domains that significantly co-occur with this emotion. The following list shows an extraction of the main metaphorical source-target domain mappings for the concept ANGER, in English, according to Kövecses (2000: 21):

ANGER IS A HOT FLUID IN A CONTAINER
ANGER IS FIRE
ANGER IS INSANITY
ANGER IS AN OPPONENT IN A STRUGGLE
ANGER IS A CAPTIVE ANIMAL
ANGER IS A BURDEN
ANGER IS AGGRESSIVE ANIMAL BEHAVIOR
THE CAUSE OF ANGER IS TRESPASSING
ANGER IS A NATURAL FORCE

He further claims that the ANGER IS A HOT FLUID IN A CONTAINER mapping is the most central one for this particular emotion, an argument that is, however, largely refuted by Omori (2008: 139), who asserts that *anger* shows greater likelihood to be associated with a cold feeling. She argues that, in her corpus investigation, *anger* is found more frequently related to cold temperature than to warmth, out of which she concluded that raw frequency correlates with prototypicality; this is, however, a rather doubtful assumption. She thus heavily criticizes Kövecses' intuitive method for the extraction of metaphors, in a similar manner to Deignan (2005: 110), who points out that cognitive linguists largely use data derived from their own “internalized language experience”. Stefanowitsch (2006: 379) equally argues for the preference of corpus studies concerning research into metaphor, however, confirms that a vast number of conceptual *anger* metaphors accounted for by Kövecses could also be extracted via

metaphorical pattern analysis when conducting a corpus investigation. In fact, looking in more detail at metaphors significantly associated with anger, Stefanowitsch's (2006: 394) examination revealed that *anger* is most strongly associated with being a HEATED LIQUID ($\chi^2= 50.97$, $p<0.001$), which largely confirms Kövecses' theory (2000: 21) of this being the most central mapping.

In addition to prototypical source-target domain mappings for the concept ANGER, Kövecses (2000: 21ff.) further lists a vast number of metaphors for basic emotion concepts FEAR, HAPPINESS, SADNESS, LOVE, LUST, PRIDE, SHAME, and SURPRISE, of which (due to lack of space in this paper), solely the former three will be taken into consideration. Looking at the emotion term FEAR, Kövecses (2000: 23) provides, amongst others, the following metaphorical mappings:

FEAR IS A FLUID IN A CONTAINER
FEAR IS A VICIOUS ENEMY
FEAR IS A TORMENTOR
FEAR IS ILLNESS
FEAR IS INSANITY
FEAR IS A SUPERIOR
FEAR IS A BURDEN
FEAR IS AN INCOMPLETE OBJECT
FEAR IS A NATURAL FORCE

Given this, it may certainly be argued that some of the above mappings may seem questionable, or as Stefanowitsch (2006: 384) points out, the reasons why VICIOUS ENEMY and TORMENTOR are accounted for as separate categories are rather doubtful. Yet, his corpus investigation confirmed that apart from two exceptions, namely *fear* conceived as a BURDEN and as an INCOMPLETE OBJECT, “all of the metaphors identified via the introspective method [could also be] found by MPA” (Stefanowitsch 2006: 385). He discovered that the metaphors most strongly associated with fear in this case are the mappings FEAR IS A SUPERIOR ($\chi^2=33.47$, $p<0.001$), followed by FEAR IS A CAUSER ($\chi^2=18.82$, $p<0.05$), an additional mapping identified via metaphorical pattern analysis, which constituted a genuinely new insight given that it had not yet been taken into account in the literature. Oster (2010: 747) conducted a whole semantic and conceptual analysis on the emotion concept FEAR and equally found that most metaphors listed in the former analyses could be identified via the corpus investigation, yet she also proposes additional mappings based on the frequency of occurrence in the corpus and argues that the most prominent source domain for *fear* is, contradicting Stefanowitsch' hypothesis, SOMETHING INSIDE THE BODY. However, it must be pointed out that the classification and naming of mappings may lie in the eye of the beholder and is largely based on the creativity of the researcher. Nevertheless, it is a crucial insight that there indeed exist certain metaphors that are more

closely associated with some emotion terms than with others, some of which may even be considered emotion-specific.

As for the target concepts SADNESS and HAPPINESS, due to lack of space in this paper, solely a small selection of conceptual mappings will be presented. It is, however, essential to point out that both concepts semantically constitute antonyms, hence also their metaphors were expected to stand in a certain opposition. This phenomenon will be outlined in more detail in subsequent chapters and in the analytical section of this work. Still, it seems crucial to elaborate on some of the most prominent mappings found in relation to both target concepts in order to demonstrate the metaphorical differences between a “positive” and a “negative” emotion. First, looking at the emotion concept HAPPINESS, Kövecses (2000: 24) identified, amongst others, the following typically associated source domains:

HAPPY IS UP
HAPPY IS LIGHT
HAPPINESS IS VITALITY
HAPPINESS IS BEING OFF THE GROUND
HAPPINESS IS INSANITY
HAPPINESS IS AN OPPONENT IN A STRUGGLE
HAPPINESS IS A FLUID IN A CONTAINER
HAPPINESS IS A NATURAL FORCE

Stefanowitsch (2006: 388) argued that some of the mappings listed in the original literature might partially seem problematic, and these were not included in the above list. Stefanowitsch's (2006: 388ff.) metaphorical pattern analysis also enabled the identification of most of the above-mentioned source domains, even though his investigation is limited to the withdrawal of metaphors that contain a lexical item of the target domain. In fact, it was even possible to extract metaphors from the corpus that were not encountered in the existing literature. Hereby it is crucial to point out that the metaphors most strongly associated with *happiness* in account of their p-value are those identified via metaphorical pattern analysis, opposed to what was suggested by previous research. Typically associated metaphors are TRYING TO ATTAIN HAPPINESS IS SEARCHING FOR AN OBJECT ($\chi^2=34.82$, $p<0.001$) and THE INTENSITY OF HAPPINESS IS QUANTITY ($\chi^2= 15.56$, $p<0.05$). Especially considering the first mapping, it is essential to point towards the fact that it forms part of the so-called *pursuit-of-happiness* model, deeply anchored in the Western cultures and in particular in the Anglo-Saxon world (Stefanowitsch 2004; 2006: 394). Considering the emotion largely construed as antonymous to happiness, Barcelona (1986) identified the subsequent source domains for the concept SADNESS, which were presented in a slightly modified way by Kövecses (2000: 25):

SADNESS IS DOWN
SADNESS IS DARK
SADNESS IS LACK OF HEAT
SADNESS IS A FLUID IN A CONTAINER
SADNESS IS A PHYSICAL/NATURAL FORCE
SADNESS IS AN ILLNESS
SADNESS IS INSANITY

Taking the above mappings into account, it is immediately noticeable that there are some metaphors that apply both to *happiness* and *sadness* and even other emotion concepts as has been previously demonstrated (as for instance the FLUID IN A CONTAINER mapping). However, there also exist some crucial differences that present a certain contrary relation of the emotions under analysis. SADNESS IS DOWN and SADNESS IS DARK form binary oppositions to HAPPY IS UP and HAPPY IS LIGHT. This insight will further be relevant to the actual examination of *worry & anxiety* and *euphoria & excitement* further on, given that we are dealing with near-antonymous emotion nouns. Hence, it will be of great interest to investigate if similar oppositions can also be revealed in the present study. Concerning the metaphors most strongly associated with *sadness*, Stefanowitsch (2006: 396) argues that *sadness* is the only emotion in his investigation significantly related to INTENSITY OF EMOTION IS DEPTH ($\chi^2 = 67.73$, $p < 0.001$), a subcategory of the CONTAINER mapping, containing expressions such as “deep sadness”.

This discussion reveals that there are in fact several source domains and metaphorical mappings typically associated with particular emotion concepts. However, it might be of equal interest to discover if there are certain source domains that apply to all emotions in general or others that significantly co-occur with some emotions but perhaps not others. Kövecses (2000: 36) argues that EMOTION IS A LIVING ORGANISM generally applies to all emotions, be it basic, complex, or peripheral ones. It will, hence, be of special interest to find out if this claim can be confirmed in the present investigation.

Further, Kövecses (2000: 35ff.) proposes that there are several source domains that apply to the majority of the emotion concepts, some of which are, however, more closely related to particular emotions. The first conceptual metaphor listed in the argumentation is the CONTAINER metaphor, considered a prototypical metaphor for emotion terms and basically building on the assumption that humans perceive their own bodies as a container with an in- and outside dimension. This forms the basis for presuming its universal status amongst different cultures, given that, as has been outlined in previous sections, all humans around the world possess the same bodies and thus share similar experiences with the physical environment. Omori (2008: 145) agrees that the CONTAINER mapping

is indeed present with the domain of emotion in general; however, she argues against its centrality and prototypicality. In her corpus investigation of conceptual emotion metaphors, she proposes a different mapping, namely EMOTION IS A HUGE MASS OF MOVING WATER, which derives from the fact that she predominantly extracted metaphors via the search string “[nominal] of [nominal]”. In this case the two nominal expressions require to express both the vehicle and the tenor of metaphor, and thereafter yielded a vast number of examples in the corpora that indeed demonstrate to possess a source domain connected to *water*. However, it may clearly be argued that those water metaphors can be considered to form subcategories of certain other general mappings, such as *depth of emotion* for the CONTAINER or *wave of emotion* for the NATURAL FORCE schema. Relating to the latter, Kövecses (2000: 37) mentions EMOTION IS A NATURAL/PHYSICAL FORCE and suggests that natural forces may be seen as a subclass of physical forces. He further points out that images of natural forces, such as wind, storm, or flood seem to be a highly motivating source domain for a considerable number of emotions. Instead of the NATURAL FORCE schema, Omori (2008: 134 ff.) prefers to call the source domain NATURAL PHENOMENA, which is suggested to cover subcategories such as FIRE, WATER, WIND, and EARTH, based on the traditional folk understanding of the four elements that constitute the natural world. As Howarth (1995: 108) points out, we “indeed 'naturize' humans by predicating emotion terms to nature [however equally] nature terms to humans [and human emotion]”. Omori (2008: 142) further argues that those natural phenomena mappings, preeminently described by moving water metaphors, should be regarded as superior to the CONTAINER conceptualization; however, as has been discussed above, the reality is rather reflected vice versa. Additionally, it can be regarded as a rather philosophical question whether a certain mapping forms part of an independent category, such as FIRE/HEAT metaphors (typically associated with *anger*, *love*, or *lust*), or if those metaphors should rather be considered as belonging to a subcategory of the NATURAL PHENOMENA mapping. Similar doubts may arise when trying to group expressions like *volcano of emotion*; it clearly lies in the eye of the beholder if one is dealing with a FIRE or an EARTH metaphor.

To conclude the above discussion, Kövecses (2000: 37) further proposes source domains, such as OPPONENT IN A STRUGGLE, CAPTIVE ANIMAL, INSANITY, BURDEN, and ILLNESS, to apply to the domain of emotion in general. He thereby claims that BURDEN may be significantly associated with *shame*, whereas ILLNESS preferably provides a source domain for the concepts *fear*, *(unrequited) love*, *sadness*, or, again, *shame*. Concerning *shame*, a corpus-based study by Catherine Norberg (2012: 164) confirms that this emotion might indeed be conceived as being a burden; however, the

investigation yielded no results in which *shame* was conceptualized as an ILLNESS. A subcategory of the latter domain may be provided by a conceptual metaphor whereby *shame* is comprehended via the terminology of a PHYSICAL WEAKNESS- yet again, this certainly leaves room for interpretation.

The above elaborations proved that there are, indeed, some metaphors specifically associated with certain emotion terms and others that generally apply to at least the majority of all investigated emotions. Yet, it is crucial to raise the question of whether emotions form some kind of a general system in a sense that they are instantiations of a generic superordinate metaphor (Kövecses 2000a: 7), in other words, whether there exists a “master metaphor” for the domain of emotion in general. It has previously been discussed that the CONTAINER metaphor applies to a vast number of emotions; however, it is equally present in conceptualizations outside the domain of emotions. Kövecses (2000: 37) hence argues that the one metaphorical mapping typically associated with all emotions is the *force-dynamics schema* presented by Talmy (1988). This scenario widely represents the folk theory of emotions and is based on the assumption that “there is a cause that induces a person (self) to have an emotion, and the emotion causes the person to have some response” (Kövecses 2000a: 8). He further suggests that force-dynamic metaphors can be separated into two partially interdependent groups, namely those that focus on the first part of the scenario and those that focus on the second. PHYSICAL FORCE metaphors belong to the former group, and are largely presented through MECHANICAL or MAGNETIC source domains. The latter group, by contrast, includes NATURAL FORCE, OPPONENT, and SOCIAL SUPERIOR metaphors. Kövecses (2000a: 13) provides “she knocked me off my feet” as an example for MECHANICAL FORCE and “I’m attracted to her” and “that repels me” for MAGNETIC FORCE.

In fact, Kövecses (2000: 36, 37) claims that force-dynamic schemata are typically associated with the majority of emotion concepts and might, hence, constitute a so-called “master-metaphor” for emotions; however, it certainly has to be argued that force-dynamic mappings can equally be found outside the domain of emotions. As a consequence, it may be stated that there is no unique metaphor solely specific to the conceptualization of emotions, but rather some that are more strongly associated with emotions than with other domains, such as the CONTAINER and PHYSICAL/NATURAL FORCE metaphors. Also, it was argued above that there indeed exist a number of source domains that apply to almost all emotion terms, as well as several mappings that are most typically associated with certain emotions over others. These fundamental insights provide a number of aspects that will be investigated in great detail in the present study. It will, thus, be of high interest to find out if the

emotion terms under analysis demonstrate a metaphorical behavior that corresponds to the hypothesis outlined in the above discussion, or, to the contrary, if the theory will be partially refuted.

2.2.4 Universality and Cultural Variation in the Conceptualization of Emotions

The present chapter provides a brief overview of the presumable universality of embodied cognition, more precisely, the cross-cultural similarity in the expression and conceptualization of emotions. A considerable number of researchers in the tradition of cognitive linguistics, psychology, and social anthropology (Kövecses 2000; Lakoff 1987; Lakoff & Johnson 1980; Russel 1991; Scherer et al. 2011; Kagan 2001; Shilling 1997) have examined the question of whether the expressions and related conceptualizations of human emotions are universal (or near-universal) amongst unrelated cultures or, on the other hand, are rather language/culture specific. Generally speaking, biologists and neural psychologist are more likely to direct their research towards finding similarities in the mechanisms that are underlying human behavior and mental processes, whereas anthropologist tend to focus on uncovering the differences that are shaped by the broader cultural context (Russel 1991: 444; Kagan: 178).

It was assumed for a long time that the mental conceptualizations of emotions, especially basic ones, are almost equal across cultures, given the fact that they are grounded in neural embodiments. Bodily grounding certainly derives from the manner of how the human species experiences its environment, but also from physiological reactions within the body and the respective facial expressions when it comes to undergoing a certain emotional state. The presumable universality of embodiment and the outer expression of emotions can be dated back to early scientists, such as Charles Darwin (1872/1998: 130ff.) who argued for the cross-cultural continuity in the expression of emotions when stating: “the different races [sic] of men [sic] express their emotions and sensations with remarkable uniformity throughout the world”. Subsequently, many emotion theorists, amongst them also present-day researchers, have been highly influenced by the suggestion that emotions might be anchored in basic biological processes and, as a consequence, that the expression of emotion is very likely to be universal (Scherer et al: 2011: 403). Scherer *et al.* (2011: 403ff.), however, argue that perception and expression should by no means be regarded as being fully interdependently lumped together, given that even though the expression of emotion may be universal to a certain extent, its conceptualization might differ considerably among cultures.

In connection to the above discussion, Kagan (2001: 177ff.) proposes that “biological processes bias humans to develop a particular set of cognitive, affective, and behavioral forms; but the cultural context of growth shapes these forms in very particular ways”. He states that humans undergo emotional changes when violating a personal standard; as an example, he provides the assumption that Japanese students might experience *anxiety* when arguing with their teacher, whereas American students in the same situation rather tend to feel *ashamed*. According to him, the capacity of experiencing *shame*, *guilt*, or *anxiety* is based on the violation of a personal standard and is hence universal and rooted in basic bio-physiological processes. The cultural context, on the other hand, “determines the conditions for the actualization of one or more of these feelings” (Kagan 2001: 178).

Russel (1991: 426) partially argues against the universality of emotions, even though he admits that there certainly might be some similarities and overlaps. Crucial evidence that he points out is that not even the definition of the term *emotion* can be considered fully congruent among languages and cultures. He states that neither Tahitians nor the Gidjingali aborigines in Australia, and other groups of indigenous peoples, actually have a word for the concept of emotions (Russel 1991: 429). It may indeed be argued that these peoples do have emotions, and that their concept for this term might be implicit or integrated in a different concept, such as feelings; however, this example clearly proves that their conceptualization of any emotion state must considerably differ from how emotions are conceived in Western thinking. Similarly, Wierzbicka (1995: 249) argues that an emotion word frequently does not have an exact equivalent in other languages, yet she concludes that emotion terms can generally be defined via universal semantic primitives, which are hypothesized to be basic units of meaning, such as *good* or *bad*. Her definition consequently introduces a universal framework which further allows the comparison of (emotion) words amongst different languages.

Cognitive scientists and linguists largely base their investigations on biological determinism and are more interested in the mental conceptualizations of certain semantic categories than in the actual expression of emotions, even though it may certainly be argued that bodily reactions and physiological changes play a fundamental role in the tradition of cognitive linguistic research. A number of scholars (such as Kövecses 1990, 2000; Nyarko Ansah 2014; Yu 1995) have conducted extensive cross-cultural examinations of (basic) emotion concepts. Frequently discussed in terms of conceptual metaphors and metonymies, the similarities considering the conceptualization of emotions across languages and cultures have been explained via the aforementioned thesis of embodied cognition, as a consequence of which presumable universal human experiences, including those of emotions, are claimed to produce

universal conceptual metaphors (Nyarko Ansah 2014: 55). In one of his early influential works, *Emotion Concepts*, Kövecses (1990: 182ff.) claimed that emotions are in fact conceived as completely universal. Later research, however, refuted this assumption and Kövecses (2000: 164; 2010: 227) himself admitted that this hypothesis had turned out to be faulty. However, he still continues to argue for, at least, a near-universality with slight variations and provides plausible explanations for these discrepancies. Many of his early suppositions were clearly based on the experientialists' view (Lakoff 1987, Russel 1991), which is largely aligned with the embodied cognition thesis and thus beliefs that prototypical emotion scripts must be widely universal. The script hypothesis (Russel 1991: 442) highlights that certain categories of emotions are defined by features. These features are claimed to describe conscious subevents, such as causes, beliefs, feelings, physiological changes, overt actions, and vocal and facial expressions and are further claimed to be arranged in a causal sequence similarly to the way actions and occurrences are ordered in a playwright's script. In relations to this issue, Russel (1991: 442) states the following:

To know the meaning of a term like happiness, fear, or jealousy is to know a script for that emotion. In other words, the script hypothesis is that the meaning of each such word, the concept it expresses, is a script. No emotional essence is added to the features, just as biologists found no vital essence needed to spark chemical constituents to life.

In other words, he claims that human emotions are inert and occur naturally and unconsciously following predetermined scripts that are largely anchored in bodily grounding. With respect to this, social constructionists, such as Lutz (1988: 56), agree on the hypothesis that emotions are indeed scripts that are biologically fixed, however, argue against the experientialists' assumption that the conceptualization of emotion scripts and scenarios is universal among different cultures. Instead, they view emotion concepts as sociocultural constructs of which the properties depend on certain aspects of a given culture, whereby particular concepts “are given different sociocultural salience in different cultures” (Nyarko Ansah 2014: 53).

However, evidence from more recent cross-cultural investigations on the conceptualization of basic human emotions shows that both the experientialists' and the social constructionists' argumentation might indeed be valid to a certain extent. Scholars such as Kövecses (2000: 160) or Maleej (2004: 55ff.) proposed the “embodied cultural prototype view”, which should synthesize the above presented opinions. According to this view, the conceptualization of human emotions is both rooted in universal embodied experiences and, at the same time, in more specific sociocultural

constructions of a certain culture. Hence, while the general conceptualization is grounded in universal physiological processes and sensorimotor reactions, more specific aspects of these bodily experiences “may be highlighted or hidden by different cultures to reflect individual sociocultural salience” (Nyarko Ansah 2014: 53). According to Kövecses (2000: 164; 2005) both the similarities and variations occur in two major conceptual domains, namely the source domains via which a certain target concepts is understood and the culturally influenced elaborations in the conceptual correspondences of mutually shared conceptual metaphors. Specifically, Kövecses (2000: 139 ff.) investigated conceptual metaphors related to the target domain concept ANGER in a number of very distinct and mostly unrelated languages, amongst which were English, Hungarian, Chinese, Japanese, Wolof, and Tahitian. In fact, he encountered several similarities shared amongst all the languages under investigation, most significantly that all cultures make use of a basic central metaphor, namely the already analyzed CONTAINER metaphor. As aforementioned, this metaphor is based on the assumption that humans conceive of their bodies as containers for emotions and, in this case, ANGER is a substance (be it fluid or gas) inside of this very container. It is remarkable that all languages under examination contain expressions such as “he was filled with anger” or “try to get your anger out of your system”. Another interesting point that may be stated is that there is evidence to presume that it is mainly blood that accounts for the fluid component in the CONTAINER metaphors and metonymies. Further, many of the examples provided suggest that when a person is entering the emotional state of being angry, blood is viewed as producing an increase in blood pressure, which as a consequence might be responsible for the pressure element in those conceptual metaphors. The latter fact is, due to biophysical reactions, a clear evidence for metaphorical grounding in embodiment, which appears to be a key component in cross-culturally similar conceptualizations of the same target domains (Kövecses 2000: 162). Partially fine-grained, and in some cases fundamental, variations are, as a consequence, rooted in differing sociocultural models: differences in prototypical folk understandings as well as in historical languages changes, the latter being equally based in the alterations of particular cultural values.

In relation to the above discussion, Nyarko Ansah (2014) investigated language-specific realizations and elaborations of shared metaphors and metonymies of FEAR in Akan, a West African language, and English and encountered linguistic evidence for both similarities and differences. Nyarko Ansah (2014: 53) states the following conclusions:

In terms of conceptual metaphors, the two languages shared the following source domains: THE HUMAN BODY, A CONTAINER, A BEING, A

SUPERNATURAL BEING, ILLNESS/DISEASE, and AN OPPONENT. However, the source domains FLUID IN A CONTAINER, TORMENTOR, SUPERIOR, BURDEN, ILLNESS, and NATURAL FORCE occurred exclusively in English, while the FIRE IN A CONTAINER source domain occurred exclusively in Akan.

As can be understood from this quote, there indeed exist a number of shared conceptualizations across those two linguistically unrelated languages. On the other hand, it is equally crucial to point out that there are also fundamental differences to be accounted for. In fact, this study has revealed a genuine new insight, given that the FLUID IN A CONTAINER mapping did not appear in Akan, which consequently signifies that this metaphor can solely be considered near-universal and by no means equal amongst all cultures.

The conclusions to be drawn from this section are, hence, that there are certain aspects that support the (near) universality of certain, first and foremost basic, emotion terms, amongst them grounding in bodily experience and physiological sensorimotor reactions. On the other hand, it was also argued that several sociocultural constraints determine the actual conceptualization of emotion terms in a particular language. This certainly does not imply that both phenomena are to be considered as isolated occurrences that have to be neatly separated when it comes to cross-cultural investigations, but should rather be understood as a synthesizing conflux of two interrelated components. The latter was proved via factual evidence provided by cross-linguistic examinations conducted by several scholars (Kövecses 2000; Nyarko Ansah 2014, Yu 1995).

In the present study, the conceptual metaphors of the emotion terms under analysis will be uncovered via a meticulous corpus investigation. The method, metaphorical pattern analysis, will be presented in more detail in Chapter 5.2: Data Collection and Methodology and Scope of the Research; in short, it may, however, be stated that this method is based on examining various collocates of the respective emotions in terms of metaphorical behavior. The following chapter is, therefore, devoted to a detailed explanation of what constitutes a *collocation*, as well as to introducing the related concepts *semantic preference* and *semantic prosody*.

3. Semantic Analysis of Metaphorical Collocates- Semantic Preference and Semantic Prosody

A second important point of this paper consists of investigating the semantic and pragmatic behavior of the first 100 most frequent nominal, verbal, adjectival and adverbial collocations that co-occur with the

emotion terms under analysis. The respective emotion concepts will, hence, not only be examined concerning their conceptual metaphorical behavior, but their description will also be enriched via adding a semantic viewpoint to the discussion, which as a consequence reveals more insights into the evaluation of the particular emotion terms in general. The examination of the semantic characteristics of emotions has, so far, been largely ignored in the research of emotion concepts, given that prior research had been first and foremost based on investigating how emotions are conceived in the human cognitive apparatus. It will, hence, be essential to uncover the semantic fields and attitudinal value that emotions are associated with in order to learn more about their actual conceptualization. The concepts that are proposed to be employed for investigating the above issues are *semantic preference* and *semantic prosody*, two notions that can be dated back to Louw (1993), Sinclair (1987, 1991, 1996, 1998), and Stubbs (2001).

Stubbs (2001), inspired by Sinclair's (1996, 1998) former analyses, argues for the existence of four separate kinds of relations between lexical units, listed as follows in ascending order of abstraction: “(i) *Collocation*: the relationship between a lexical item and other lexical items; (ii) *Colligation*: the relationship between a lexical item and a grammatical category: For example, the word-form cases frequently co-occurs with the grammatical category of quantifier, in phrases such as in some cases, in many cases” (Stubbs 2001: 65); (iii) *Semantic preference*; (iv) *Semantic prosody*. Three of the above mentioned relations will be now discussed in turn, which will further uncover their exact relevance for the present study.

3.1 Collocation

The issue of collocations has proven its importance in a number of studies, especially in the area of language teaching (Walker 2011: 291), where a number of authors argued for their arbitrariness. This was because collocations of several lexical units cannot be based on a trustworthy rule and thus have to be simply learned by heart when trying to acquire a foreign language (Lewis 1997: 32). A different field of interest is corpus linguistics, where large quantities of data allow for the identification of vast numbers of relevant collocates for particular words. Liu (2010) is one of the researchers who critically examined collocations from a different perspective, mostly drawn from the disciplines of corpus and cognitive linguistics. In a number of corpus investigations, Liu (2010: 69ff.) and Liu & Espino (2012: 199ff.) examined the behavioral profile of near-synonymous nouns, adverbs, and adjectives, based on the fact that collocations are not simply an arbitrary combination of different lexical items but are co-

occurrences of words that show great likelihood to appear together in close proximity. Nesselhauf (2005: 11ff.) argues for a similar approach, namely that collocations are co-occurrences of lexical units that can be considered as being “more frequent than could be expected if words [were] combined randomly in a language”. Sinclair (1991: 170) termed the notion in a wider sense, arguing that collocation is generally the “co-occurrence of two or more words within a short space of each other in a text”. Furthermore, much beforehand, Sinclair (1966: 415) coined three elements essential for any discussion of collocation: *node*, to refer to an item of which the collocation is being studied; “*span*, as the number of lexical items on each side of a node”, and; *collocates*, referring to the items in the close environment of the node set by the span. In account of the latter, there exists statistical evidence for using a span of four words on each side of the node (Mason 1997: 361ff.), an issue that will be further scrutinized in Chapter 5.2: Data Collection and Methodology and Scope of the Research.

Taking the previous definitions into account, there is good evidence to support latter perspectives rather than considering the phenomenon of collocates a mere matter of coincidence. The issue of co-occurring lexical units (collocations) will be of great importance for the present study when it comes to identifying metaphorical conceptualizations of the four emotion terms via a meticulous corpus investigation. Additionally, the concept of collocation forms the primary basis for semantic and pragmatic analyses premised upon *semantic preference* and *semantic prosody*, frameworks which tightly bind words together and consequently form extended units of meaning (Sinclair 1996: 87). Both concepts will be discussed in turn in the subsequent sections.

3.2 Semantic Preference

Semantic preference and its related concept semantic prosody are based on similar realities, while describing different lexical behaviors. Thus, they tend to be confused even by a number of scholars (Bednarek 2008: 119). Even so, they have turned out to be of great use for the investigation of linguistic expressions in language corpora (Partington 2004: 133). The phenomenon of semantic preference refers to the “semantic subsets a word's collocates predominantly belong to” (Oster 2010: 732). In other words, it is related to the “habitual collocation of lexical items with linguistic expressions that belong to certain semantic fields” (Bednarek 2008: 120). Stubbs (2001: 65) and Partington (2004: 146ff.) investigated lexical items such as “large”, “sheer”, and “entirely” and encountered that their collocates belong to a limited number of semantic categories, such as “quantities and sizes” for “large” and “persistence and strong emotions” for “sheer”. Through studies of this kind it became clearly

evident that certain lexical items “co-occur typically with other words that belong to a particular semantic set” (Hunston 1995: 137). Stubbs (2001: 65) concludes from his examination that the notion of semantic preference can be defined as “the relation, not between individual words, but between a lemma or word-form and a set of semantically related words” and elsewhere argues that lexical items show semantic preference when they co-occur with “a class of words which share some semantic feature (such as words to do with ‘medicine’ or ‘change’)” (2001: 88).

In this study, the concept of semantic preference will be applied in order to determine how the particular emotions under analysis are semantically described and in which way they combine with certain groups of other lexical units (cf. Oster 2010: 733). For this very purpose, the semantic fields of the collocates of the emotion terms *worry*, *anxiety*, *euphoria*, and *excitement* will be classified and analyzed in detail, which will support the investigation of the main descriptive dimensions of the concept as well as the typically co-occurring items from a functional perspective. It will be further interesting to find out if differences between metaphorical and literal collocates can be encountered, given that according to Bednarek (2008: 125) “literal and metaphorical uses of lexical items may result in different semantic preferences”.

3.3 Semantic Prosody

Semantic prosody, which can be seen as a subcategory of semantic preference and was meticulously studied by Sinclair (1987, 1996, 1998) and Louw (1993), refers to instances where a lexical item “shows a preference to co-occur with items that can be described as bad, unfavorable or unpleasant, or [on the other hand] as good, favorable or pleasant” (Partington 2004: 149). It is also sometimes called POS/NEG collocation. It is proposed that words with a preference for NEG collocation may acquire negative connotation themselves, in other words carry a negative evaluative load when frequently occurring with items that share a negative emotive value (Stubbs 2001: 66). This issue has, however, been heavily controversial. For instance, Partington (2004: 150) argues that the simple fact of being designated to in the environment of collocates of a certain evaluative sense, be it good or bad, does not constitute sufficient condition to suggest that an item might acquire the same sense. However, this aspect lies beyond the scope of this paper and will, hence, not be taken into further consideration.

Classic examples considering the general phenomenon of semantic prosody are Sinclair (1987: 171), who examined the items HAPPEN and SET IN¹ and discovered that both items usually tend to

1 In order to avoid confusion with the capitalized source domains of metaphors, it is here essential to point out that in corpus linguistics words in capital letters stand for *lemmas* rather than for individual *word forms*.

have an unfavorable prosody, hence collocate with items that carry a negative value; Louw (1993: 157), who demonstrated that UTTERLY shows high frequency to combine with adjectives expressing something negative; and Stubbs (1995), who argues that the word CAUSE shows a clear preference to co-occur with negative nouns such as “harm”, “alarm”, “danger”, and “quarrel”. Furthermore, he proposes that:

CAUSE is near the stage where the word itself, out of context, has negative connotations. [...] The selection restrictions on CAUSE are not (yet?) categorical: it is not (yet?) un-grammatical to collocate CAUSE with explicitly positive words. But it is easy to see how an increase in frequency of use can tip the balance and change the system. (Stubbs 1995:16).

CAUSE, as a consequence, reveals to have an overall NEG prosody. For example, Partington (2004: 144) suggests that items belonging to the happen-like semantic group show more likelihood to have a NEG prosody, given that in general humans “tend to feel greater need to talk about problematic events and processes than unproblematic ones”. Of course, to a certain extent, one might argue against the validity of the above claims, given that the expression “negative semantic context” may be largely based on the authors' intuition. In account of this issue, however, the investigation of corpus data shows a clear advantage over other methods, as corpus data allows to examine a large quantity of collocation entries and can hence provide statistical evidence for the frequency of positive versus negative co-occurrences with particular lexical units.

Another aspect that partially opened a controversial debate is the question of whether the analysis of semantic prosodies should predominantly focus on positive or negative evaluation, or whether it might also be useful to point out more graded and differentiated perspectives of attitudinal meaning, i.e. slightly more negative or positive (Bednarek 2008: 133). This would, however, hardly be feasible in account of the present study and will, thus, not be taken into deeper consideration.

For the purpose of the corpus investigation at hand, the identified (metaphorical) collocations of the emotion terms that carry additional evaluative load will be listed separately with the aim of assessing a potential positive or negative connotation of some kind (cf. Oster 2010: 733). Yet, it is necessary to point out that semantic prosody obtains a number of limitations for corpus investigations of all kind, due to the fact that its analysis remains at least partially intuitive, as attitudinal meaning cannot be fully objectively derived from the corpus data and further requires considerable inference by the analyst (Bednarek 2008: 132). Apart from that, as can be understood from the above description,

semantic prosody describes a rather complex phenomenon, which again might provide some restrictions for the present corpus investigation. Arguably, these problematic issues cannot be fully taken into consideration. It may, however, be pointed out that the mentioned aspects are definitely of great importance for future research in this field in order to examine semantic prosody in more detail.

3.4 The Relationship Between Semantic Preference and Semantic Prosody

A final issue that requires further clarification is the precise relationship between semantic preference and prosody, two concepts that, as has been pointed out, tend to be confused even amongst scholars. The differentiation might be somewhat problematic as Stubbs (2001: 66) remarks that “the distinction [...] is not entirely clear-cut. It is partly a question of how open-ended the list of collocates is: it might [certainly] be possible to list all words in English for quantities and sizes, [not, on the other hand] for ‘unpleasant things’”. Yet, the relation can be assumed to occur in two ways. On one side, as aforementioned, semantic prosody can be considered a subcategory of semantic preference, being reserved for the special instances where a lexical item preferably co-occurs with items that can be described as bad, unfavorable, and unpleasant, or rather as good, favorable, and pleasant. According to Partington (2004: 149), this description is in a general sense suggested to work as a rule of thumb. However, following Stubbs’ (2001: 66ff.) and Sinclair’s (1996: 86 – 87) argumentation, the issue of their relationship is by no means fully covered by the above assumption. One key point lies in the aforementioned remark that semantic prosody is at a further stage of abstraction than preference. In fact, it is argued that semantic preference generally constitutes a phenomenon more closely related to simple collocation. As has been demonstrated, semantic preference describes a specific matter “whereby a particular lexical item *x* collocates frequently, not with another item *y*, but with a series of items which belong to a semantic set” (Partington 2004: 150). To a certain extent, prosody can be similarly defined as the connection between two items; however, it frequently tends to have a wider extent over a considerable stretch of text.

The latter fact, and to further elucidate what constitutes the intertwined relationship between both preference and prosody, can be best illustrated by giving some examples. Partington (2004: 150) discusses some evidence provided by Stubbs (2001: 89-95), who investigated the semantic behavior of the lexical item UNDERGO and noticed that, on the one hand, the word collocates with a number of semantic fields like “medicine” (e.g. treatment, brain surgery) and “tests” (e.g. examination, training) and, on the other, with fields in connection to “change” and “transformation”. It had already been

investigated that words within the area of “change” frequently tend to be associated with negative or unfavorable prosody. Hence, it can be concluded that the item UNDERGO co-occurs with a variety of semantic preferences, the above mentioned fields amongst them. Furthermore, these identified preferences show great likelihood to build up a strong negative prosody. A second relevant example is the word CAUSE, which has been dealt with in former sections and has demonstrated to also show a negative prosody. In order to, again, prove the interrelation between preference and prosody, it is most useful to quote Stubbs (2001: 66): “the lemma CAUSE has a strong unfavorable prosody, but if we take syntax into account, then there are relations of semantic preference between the word CAUSE and sets of abstract nouns, such as 'illness' and 'personal feelings’”. Hence, it can be said once again that a certain variety of semantic preferences combine to reflect an overall semantic prosody. Therefore, these examples support the argument that semantic preference is in general a less abstract phenomenon, within which the node item is via collocation related to another item belonging to a particular semantic set, whereas semantic prosody may also affect wider stretches of text. It was thus proved through the above illustrative examples that these two terms certainly interact. Basically, it can be stated that the former, preference, forms the basis for the latter, prosody, while conversely, “the latter dictates the general environment which constrains the preferential choices of the node item” (Partington 2004: 151).

Another key issue that is relevant is the fact that semantic prosody lies, despite its name, more “on the pragmatic side of the semantics/pragmatics continuum” (Sinclair 2004: 34), given that it refers to all grades or stages of attitudinal meaning and does not just carry a purely positive or negative evaluative load. Semantic preference, on the other hand, constitutes a largely semantic phenomenon.

In conclusion, it might be valuable to sum up some central ideas. It certainly appears to be essential to maintain the distinction between semantic preference and semantic prosody, as is proposed by Sinclair (2004: 37). He considers the term semantic preference reserved for instances in which certain lexical items collocate with more or less specific semantic subsets, while the notion semantic prosody refers to connotations of all kind, be it POS/NEG connotations or even attitudinal meanings more complex in nature. The latter may again affect single words, but also larger units of meaning and stretches of text (Bednarek 2008: 132ff.).

4. Semantic and Metaphorical Behavior of Near-Synonyms and Antonyms

The emotion terms that will be investigated in the corpus study at hand can be said to constitute pairs of near-synonyms: the terms *worry* and *anxiety* share several characteristics in meaning and similarly do the notions *euphoria* and *excitement*. Further, it may also be stated that the emotion pairs under scrutiny can, in some ways, be considered near-antonyms, given that *worry* & *anxiety* represent strongly negative phenomena and *euphoria* & *excitement* are mainly associated with considerably positive attitudes. This might, however, lie in the eye of the beholder and is not based on scientific research. In the course of this chapter, first and foremost, the concepts which precisely define synonyms and antonyms will be outlined, followed by a review of several studies through which the semantic, collocational, and metaphorical behavior of synonymous words was identified (Stefanowitsch 2006; Liu 2012, 2013). The fact that the present investigation focuses on emotions that do not belong to the group of basic emotions (cf. Kövecses 1989; Sauter et al. 2009; Griffiths 2003) and that have, so far, not been investigated neither with respect to their metaphorical nor their semantic behavior, provides reason to suggest that this corpus study will shed light on a completely new dimension of their lexical and conceptual characteristics and may thus challenge the existing understanding of emotion structures. Furthermore, a key issue will be to examine if the emotion terms under analysis behave similarly regarding conceptual metaphors and metonymies as well as semantic preference and prosody or if the findings reveal the opposite. Thereby, it will be essential to compare the overall findings amongst all four items in more detail, and to confront the near-synonym pairs, as well as one positive and one negative emotion, respectively, in order to point out fundamental similarities and differences. Detailed findings will be presented and discussed in Chapter 7.

4.1 Synonyms and Near-Synonyms – Their Remarkable Role in Language

As has been discussed in former chapters, the human conceptual system is able to encompass information about an extraordinarily wide range of objects, facts, and ideas. As Jeon *et al.* (2009: 449) put it, semantic relations between words, be it synonymy or antonymy, reflect the organization of word storage in the brain and thus crucially contribute to an understanding of the human conceptual system. An essential component of this knowledge is clearly the “representation of many different types of semantic relationships which exist between these entities” (Crutch *et al.* 2012: 2636). These semantic relationships may be defined by superordinacy (e.g. tree-plants), co-ordinacy (e.g. mother-daughter), or

association. Considering the present study, the latter subclass of semantic relationship, which can be separated into synonymous and antonymous associates, will be taken into deeper consideration. In relation to this issue, and also to the fact that the present investigation concerns abstract emotion concepts, it is certainly crucial to point towards the assumption that abstract words tend to have a greater reliance upon the representation of associative information than concrete ones (Crutch *et al.* 2012: 2637).

Despite their ubiquity in language, synonyms or near-synonyms are a highly complex and intriguing linguistic phenomenon. Even though synonyms basically convey the same concept or idea, they are, as a matter of fact, not completely and indiscriminately interchangeable. In a number of cases, they indeed express the same underlying meaning while doing so “in different fashions, for different contexts, and/or from different perspectives” (Liu 2013: 58). As DiMarco *et al.* (1993: 1) formulate, synonyms differ in shades of meaning as well as vary their connotation, implication, and register within different contexts. Hereby it is also crucial to mention Edmond & Hirst’s (2002: 107) point of view, which states that if two synonymous words were truly and fully interchangeable in any context, one of them would with great likelihood result as being superfluous and consequently fall out of use. To the contrary, Miller and Fellbaum (1991, in Jeon *et al.* 2009: 449) consider two expressions as synonymous if the substitution of one word for the other never changes the truth value of a sentence. While this might work in some cases, what has to be taken into account is the fact that the respective words have to be synonymous in the same context. Also, according to Church *et al.* (1994: 169), lexical substitutability is a good indicator for semantic similarities or relations, even though “distributional evidence alone cannot be used conclusively” on this issue. Therefore, synonyms are challenging, but at the same time important, linguistic items, in part because they are essential for precise and meaningful communication in all the fundamental nuances that underlie the exact transfer of information. Despite their intricacy and importance for gaining more insights into the human conceptual system as well as the lexis of a particular language in general, synonymy has only recently received the scholarly attention it deserves, thus additional semantic research may be needed to shed more light on this intriguing linguistic phenomenon.

Recent advancements in corpus linguistics allowed scholars to conduct a number of fruitful investigations concerning sets of synonymous and near-synonymous words. A method that was largely applied amongst researchers is the behavioral profile (BP) approach, which is in short “a lexical research method that uses corpus data to examine the distributional patterns of lexical items, such as

the linguistic contexts a word is typically used in and the words/phrases it usually collocates with, so as to identify its unique semantic and usage patterns” (Liu & Espino 2012: 199). In other words, this approach builds on the theory that the meaning of a certain lexical item stands in close correlation with its behavioral profile or distributional patterns (Liu 2013: 68). Although it is widely believed that Hanks (1996) has coined the term “behavioral profile” to describe the above phenomenon, the theory can be dated back to authors such as Firth and Sinclair, who were involved in early linguistic research. Firth (1957: 7, 11) discovered that “the complete meaning of a word is always contextual”, as well as that a word is principally understood “by the company it keeps”. Several years later, Sinclair (1966: 411), who devoted a great amount of his research to collocational and semantic prosodic profiles, argued that “the tendencies of [lexical] items to collocate with each other” should be the primary focus of lexical studies in general.

For the last two decades a number of comprehensive corpus studies on how meanings may be determined based on lexical collocation and other distributional patterns have been conducted (Sinclair 2004; Stubbs 2001). By investigating synonymy in more detail, it was possible to reveal several fine-grained semantic and usage differences in sets of synonymous or near-synonymous words (Gries & Otani 2010; Liu 2010; Liu & Espino 2012, Liu 2013). In fact, it may be claimed that corpus-based descriptions of language have demonstrated to be considerably more accurate and informative than traditional non-corpus-based descriptions. In this context, Liu (2010: 58) argues that corpus studies of lexical items may have an even more fruitful explanatory value than traditional grammar books or thesauri, given that in a corpus study one is dealing with natural, real language data. He further criticizes that thesauri frequently solely offer rather general or even circular descriptions. In one of his first behavioral profile studies, Liu (2010) examined the collocational patterns and semantic differences of five near-synonymous adjectives, *chief*, *main*, *major*, *primary*, and *principal*, and by doing so yielded some findings that challenged the existing understandings of this set of words in terms of precise meanings, fine-grained usage differences and descriptions in reference works (78ff.). Liu & Espino (2012: 199) argue that this study and others focused on synonymous verbs (such as Divjak 2006; Hanks 1996) have significantly contributed to an understanding of the synonyms examined and synonymy in general. However, they criticize that only investigating verbs or adjectives provides a number of limitations, as there is no evidence to suggest that the procedures that can be applied to better use and understand the above mentioned word categories could also be relevant to other categories, such as nouns and adverbs.

Based on this assumption, Liu & Espino (2012) conducted a detailed behavioral profile corpus study on four near-synonymous adverbs, *actually*, *genuinely*, *really*, and *truly*, which again yielded groundbreaking results in terms of detailed semantic and usage differences amongst the four investigated items. Their findings offer a clear delineation of the very complex internal structure of the synonym set as well as their remarkable elusiveness and variability of meanings and functions in different sentence positions. Thus, the investigation revealed that this set of lexical units is by no means “totally synonymous”- an unlikely occurrence that, which the *Dictionary of Linguistics and Phonetics* (Crystal 2008: 470) describes as “two words that are [completely] identical in meaning, i.e. interchangeable in all CONTEXTS, and with identical CONNOTATIONS” (Capitalization adapted from the original). A further insight gained from this study is that the corpus-based BP approach is indeed an equally effective methodology for the investigation of synonymous adverbs, as it has proven to be in former studies concerning adjectives and nouns (Liu & Espino 2012: 220).

Given that synonymous nouns have been widely left aside in research, Liu's (2013) critical examination of two sets of near-synonymous nouns, *authority*, *power*, *right* and *duty*, *obligation*, and *responsibility*, aims at paying more adequate attention to the subject matter. Hereby, he decided on applying the aforementioned collocation-focused BP approach (Liu 2013: 73ff.). It is hardly surprising that this investigation yielded similar results to the above discussed studies, namely equally elucidated fine-grained discrepancies of semantic and usage patterns between the various units in the respective sets. Stefanowitsch (2006: 398), as well, meticulously analyzed the metaphorical behavior of several basic emotion nouns via MPA (metaphorical pattern analysis) and equally discovered a number of crucial differences concerning the selection of metaphorical collocates, source domains, and semantic preferences of near-synonymous emotions (e.g. *joy* and *happiness*).

Similar to the latter investigation, the principal aim of the study at hand is the detailed and critical examination of two sets of near-synonymous emotion nouns, *worry* & *anxiety* and *euphoria* & *excitement*. It might certainly be argued that there already exists sufficient research devoted to this subject matter; however, the rationale for this investigation is based on several innovations. First and foremost, the lexical items dealt with do not form part of the so-called basic emotions (cf. Kövecses 1998; Stefanowitsch 2006: 77) and have hence not been taken into consideration in former corpus-based approaches. A further novelty is grounded in the fact that a great number of different facets will be analyzed, as opposed to existing research which has been either focused on the metaphorical profile or on lexical and semantic usage patterns of particular items. Additionally, it is crucial to point out that

the objective of this study does not simply concern an isolated analysis of the terms under investigation, but allows a cross-comparison amongst each other in a number of different ways. It will, hence, be of great interest to uncover the various metaphorical source domains of the particular words, and subsequently find out if there are significant similarities or strong discrepancies between the synonymous terms; or, on the other hand, if the distribution of different source domains is rather balanced among all four emotion terms. The latter would definitely point towards the assumption that synonyms are by no means equal considering their usage and internal structure. In addition, the study aims at presenting semantic preference and prosody patterns of emotions, a fact that has so far received rather marginal attention and was only analyzed by Oster (2010), who, however, devoted her research solely to scrutinize one single emotion: *fear*. Given that the investigation at hand is concerned with four emotions, focused on two synonymous pairs, it may be argued that a number of novel insights can be gained, especially in the account of semantic and pragmatic distinctions as well as both metaphorical and literal collocation preferences.

4.2 Worry & Anxiety and Euphoria & Excitement- Rationale for Choosing these Items

The main reasons for examining this particular set of near-synonyms are its rather complex internal semantic structure and the existing inadequacies in the descriptions of near-synonyms in general. However, a large and important part of the study consists of investigating their metaphorical behavior, a condition that has only been peripherally taken into account and will, hence, shed light onto an entirely new dimension of the notoriously complex and intricate structure of synonyms on a larger scale, and emotion terms in particular. The selection of the near-synonyms was based on a close consultation of a number of leading dictionaries and thesauri, the *Cambridge Advanced Learner's Dictionary* (2008), the *Oxford Advanced Learner's Dictionary of current English* (2005), the *Collins English Dictionary* (1999), the *Cambridge Online Dictionary* (2014), the *Oxford Online English Dictionary* (2014), the *Online Thesaurus* (2014), the *Oxford Thesaurus for Students* (2007), and the *Oxford Thesaurus of English 2nd Edition* (2006). A decisive reason for choosing the four emotion nouns under analysis is the fact that, in the majority of the consulted thesauri and dictionaries, they are applied to define one another. As a matter of fact, the selected nouns each have additional and distinctive synonyms, which will, however, be left aside given that their meanings are not shared between the particular two nouns in each synonymous pair.

a) *Worry* and *Anxiety*

Both the *Oxford Advanced Learner's Dictionary of Current English* (2005: 57) and the *Cambridge Advanced Learner's Dictionary* (2008: 57) define *anxiety* as a “worry or feeling of worry about something that might happen in the future”, or, as the *Collins English Dictionary* (1999: 53) puts it: “a state of intense apprehension or worry often accompanied by physical symptoms such as shaking, intense feelings in the gut etc.”. *Worry*, on the other hand, is referred to as “being anxious or uneasy about something uncertain or potentially dangerous” (*Collins English Dictionary* 1999: 1682). Furthermore, when it comes to investigating the synonyms of both emotion terms, one is always applied in order to define the other. To give an example, the *Oxford Thesaurus of English 2nd Edition* (2006: 34) lists *worry* as the very first synonym for *anxiety*, followed by concern, apprehension, and uneasiness; the *Online Thesaurus* (2014) also uses *worry*, before angst, apprehension, and concern, to define *anxiety*. Taking the opposite scenario into consideration, all three consulted Thesauri employ *anxiety*, or the state of being anxious, as the first or second synonym listed with the state of *worry*.

b) *Euphoria* and *Excitement*

When it comes to investigating the potential synonymy of the emotion nouns *euphoria* & *excitement*, one is confronted with a decisively more complex situation. According to the *Collins English Dictionary* (1999: 491), *excitement* is defined as a “strong feeling of pleasurable anticipation or nervous agitation”, while *euphoria* is referred to as “a great feeling of exaggerated elation” or “extreme happiness, sometimes more than is reasonable in a particular situation” (*Cambridge Online Dictionary* 2014). This means that both terms define a similar phenomenon of happy, positive elation, and agitation, even though they are not directly applied to define each other. Hence, it can certainly be argued that these notions are in principal near-synonymous in a less obvious manner than *worry* and *anxiety*. A detailed consultation of the thesauri at hand revealed, however, that *excitement* is indeed listed as a synonym for *euphoria*, while *euphoria* is solely once pointed out as a synonym in the opposite scenario (*Oxford Thesaurus of English 2nd Edition* 2006: 268). Despite this rather illogical fact, it is essential to point out that both nouns share a considerably vast number of synonyms, amongst them *elation*, *happiness*, *joy*, *buzz*, and *intoxication*, which once again proves their close semantic relation and remarkable similarity in meaning. The latter was, apart from the fact that *euphoria* and *excitement* have so far not been examined in a corpus investigation, decisive for selecting these particular emotion terms.

4.3 Antonymy- Positive and Negative Emotions as an Opposition

The present chapter contains a short review of antonymy, given that the respective emotion pairs do not truly build up sets of binary oppositions. It is fundamental to point out that two of the emotion terms refer to positive and the other two to negative emotions. This fact will additionally play a decisive role when it comes to investigating the semantic prosody and collocational profile of the words under analysis.

According to the *Dictionary of Linguistics and Phonetics* (Crystal 2008: 28), antonymy describes a phenomenon that is “used in SEMANTICS as part of the study of oppositeness of MEANING” (Capitalization adapted from the original), and belongs to the set of sense relations that also include synonymy and hyponymy. Generally, antonymy is claimed to refer to all different kinds of semantic oppositeness, however, it is crucial to point out that there are several subdivisions to be made between, for instance, graded antonyms (*big-small*) and ungraded ones (*single-married*). Some linguists, such as the British linguist John Lyons in his work *Semantics* (1977: 270ff.), reserve the term antonymy simply for the phenomenon of graded antonyms, whereas the other type is frequently referred to as complementaries. For other authors, any lexical circumstance bound with oppositeness is generally accepted (Murphy and Andrew 1993, in Hyeon-Ae Jeon 2009: 449). In fact, it seems to be a matter of high controversy what exactly constitutes the qualities of an antonym, hence “the use of the term 'antonym' must always be viewed with caution” (Crystal 2008: 29). In this context, it must be noted that *worry & anxiety* and *euphoria & excitement* can neither be considered as graded nor as complementary antonyms, and will hence be referred to as positive and negative opposites in the course of this paper. It is, however, interesting to point out that parts of the antonyms listed in the thesauri (e.g. *Online Thesaurus* 2014) constitute synonyms of 1 or 2 other emotions. To give an example, *joy*, *happiness*, and *pleasure* are proposed as antonyms for *worry*, but at the same time are listed as synonyms for both *euphoria* and *excitement*. Considering this, the exact definition of antonyms might certainly depend on the researcher and can truly be argued to comprise a rather philosophical issue, hence deeper insights into this subject matter will be left aside in the present paper as they are simply beyond the scope of research. What will be taken into consideration, instead, is the question of semantic prosody, positive and negative collocations, and the variety of semantic fields in semantic preference.

PART II – Empirical study: Presentation, Analysis and Interpretation of the Results

5. Data Source and Methodology

5.1 Corpus Choice

“Following the current trend of quantitative corpus approaches to conceptual and semantic analyses” (Rojo López, Orts Llopis 2010: 3300, Stefanowitsch 2006, Oster 2010, Gries 2010), this study is based on one of the largest freely available online corpora, the *Corpus of Contemporary American English* (COCA). Over recent decades, corpus linguistics has grown into a well-established field of research, its methods being increasingly applied in cognitive linguistics due to the fact that, nowadays, corpora contain vast quantities of data and are hence particularly useful for quantitative analyses (Oster 2010: 728). Further, corpus linguistics has developed a number of conceptual tools and search processes, such as co-occurrence and collocation, semantic preference, and semantic prosody, which are highly useful in order to identify semantic, conceptual, and pragmatic aspects of certain lexical units. The corpus approach, thus, differs considerably from traditional introspective methods for the elicitation of certain data. In the research of cognitive metaphor especially, the corpus-based approach has been proved to be equally successful or even superior “in terms of data coverage compared to the traditional method of eclectically collecting citations or gathering data from introspection” (Stefanowitsch 2006: 369), as not only could all the relevant mappings identified in the previous literature be extracted, but even additional conceptual metaphors were uncovered. The study at hand does not solely aim at investigating the metaphorical behavior of the four emotion terms, but also has a certain focus on revealing their semantic behavior via semantic preference and semantic prosody. Given this, it is legitimate to claim that choosing a corpus-based approach for the present examination is definitely the best method.

The COCA is a compilation of more than 450 million words retrieved from 5 different genres, namely spoken, newspapers, fiction, magazines, and academic texts, dating from 1990 to the present (Davies 2013). However, for the principal purpose of this study, there are no particular needs regarding genre. Rather, the *size* was a decisive factor, as emotion words are not high frequency words and hence a considerably larger amount of textual material is required in order to be able to draw accurate conclusions about their behavior in context (Oster 2010: 743). A further reason why I decided to choose the COCA is its practicability, as it allows entering a vast number of user-defined search strings and displays the data in a transparent way. Additionally, the corpus is regularly updated (at least until 2012), which means, however, that the results may vary slightly when a search is carried out at different moments in time.

5.2 Data Collection and Methodology and Scope of the Research

Given that the principal aim of this study is to identify the conceptual metaphors that correspond to the four emotion terms under analysis, I first and foremost followed the *Metaphorical Pattern Analysis* (MPA) methodology proposed by Stefanowitsch (2006: 371ff.) in order to extract all the relevant data from the corpus. This method is, however, not as simple as the term might suggest, given that “conceptual metaphors are not tied to specific lexical items, and in particular, they do not all contain lexical items from the target domain” (Stefanowitsch 2006: 371). As already mentioned, a metaphorical pattern is a “multi-word expression from a given source domain (SD) into which one or more specific lexical items [sic] from a given target domain (TD) have been inserted” (ibid.) and provides a crucial basis for target domain-oriented corpus-based studies.

With respect to the present investigation, MPA consists of choosing a lexical item referring to the target domain under analysis, in this case the emotion concepts *worry*, *anxiety*, *euphoria*, and *excitement*, and further extracting samples of collocations co-occurring with the respective items in the corpus. Regarding the search node, I decided to search by lemmas, which enables to find different forms of one lexical unit in one single search. This is insofar relevant, as through this, inflections such as the plural of the search items, can also be included in the analysis. The encountered collocates were subsequently divided into subgroups, namely nominal, verbal, adjectival and prepositional collocates, a fact that is inasmuch of importance as, for example, conceptual metaphors and metonymies are frequently expressed through verbs and nouns, while adjective, adverb and preposition searches may reveal more about how the particular emotion is described in terms of semantic fields. The search span was in this case chosen to be the classic 4-gram (cf. Gries 2010: 329), which proved to be most adequate for looking at nominal and verbal collocations. With respect to adjectives, adverbs, and prepositions, however, I decided to reduce it to a 2-gram, as those are bound more tightly to the search word and prevent irrelevant data from being included. The results were then grouped by lemmas (e.g. level+levels of anxiety), ranked via the overall frequency of occurrence and examined separately. At first I solely wanted to consider collocates exhibiting an MI-score > 3 , however, this search mode did not reveal enough instances referring to conceptual metaphors and was as a result left aside. Basically, the MI score measures the significance of each co-occurrence and calculates how strongly two words seem to associate in a corpus. Listing the collocates via MI score and not according to raw frequencies would have been inasmuch favorable as it helps to exclude insignificant collocates that might indeed demonstrate high frequencies that are, however, no typical co-occurrences of the search word.

Unfortunately, ranking words solely via MI-score would not have revealed much about the conceptual and semantic behavior of the emotions under analysis, which is why the simpler method of looking at the most frequently occurring collocates was preferred.

Following the above described search process, I was provided with a relatively vast list of co-occurrences. The next step consisted of analyzing and classifying those lists for possible indication of metaphorical expressions. Uncovering the latter was partly based on intuition, whereby several monolingual dictionaries, amongst them the *Cambridge Online Dictionary*, the *Cambridge Advanced Learner's Dictionary* (2008), the *Oxford Advanced Learner's Dictionary of current English* (2005), and the *Collins English Dictionary* (1999), were consulted in order to verify if the encountered expressions are used in a figurative or rather in a literal sense. Having identified the relevant metaphorical expressions, these were grouped into coherent sets illustrating general mappings based on common source domains that have motivated those figurative expressions. Naming the metaphorical mappings was partially inspired by existing research on emotions in general such as X IS A FLUID IN A CONTAINER (Lakoff & Johnson 1980; Stefanowitsch 2006; Kövecses 1990, 2000, 2010); however, several of those mappings were irrelevant since I only searched for expressions literally containing the lexical target domain concept. For that very reason, some of the metaphorical subtype mappings presented in the subsequent sections are in fact grounded in my personal intuition and are not usually found in existing literature. On the other hand, expressions such as “I'm feeling down today” for the conceptual mapping SADNESS IS DOWN are excluded due to being beyond the realms of possibility of this study. Specifically, classifying the collocations meant deciding whether they are relevant for one (or even more) of the following points (cf. Oster 2010: 737):

- a) Evidence of a metaphorical understanding of the emotion (e.g anxiety attack)
- b) Metonymic usage (body reaction stands for the emotion)
- c) Description or evaluation of the emotion. This will be of greatest interest for the investigation of semantic preference and semantic prosody.

Finding evidence for conceptual metonymy was, in contrast to that for conceptual metaphors, a considerably more challenging process. As has already been mentioned before, cognitive linguists speak of conceptual metonymy when an emotion is “represented by its physiological effects or by the behavioral reactions it generates” (Oster 2010: 741). This was clearly a considerable limitation for the corpus study at hand, as given to the methodological necessity of including the lexical target domain node in the search string, it is only possible to uncover instances of physiological effects or

sensorimotor reactions if the emotion itself is also mentioned. There does not seem to be a straightforward way within corpus analyses of extracting instances where the physical effect actually stands for the emotion. Nonetheless, several collocations could be encountered that include expressions providing evidence for biophysical or behavioral effects of the emotions under scrutiny. An analysis of these metonymical co-occurrences can certainly reveal new insights into the issue of which effects are predominantly present in the conceptualization of a particular emotion.

After having extracted the most relevant metaphorical and metonymic expressions from the corpus, I also chose to present figures of the statistical significance of the data, especially regarding the question of whether there are any metaphors more frequently associated with some emotions than with others (cf. Stefanowitsch 2006: 392 – 397). For this I used statistical methods such as the p-value of the Pearson's Chi-Square test. A further indicator for whether a metaphorical expression shows great likelihood to be associated with a certain emotion is the relative frequency of its occurrence in the corpus, which can be calculated by taking the absolute frequency of a collocation and dividing it by the total number of classified metaphorical expressions. The last step, considering the investigation of the metaphorical behavior before looking at the semantic and pragmatic peculiarities of each emotion, was a cross-comparison between all the results yielded in account of the four emotion terms under analysis, which again enabled to gain a number of relevant insights, given the similarities and differences encountered among the respective near-synonym pairs. An exact outline of the results will be presented in Chapters 6 and 7.

6. Conceptual metaphors, metaphor subtypes and conceptual metonymies

The present chapter concerns the systematic presentation of the results yielded in the COCA query with respect to the four emotional terms under analysis. The first subsection is dedicated to a detailed portrayal of the metaphorical and metonymical behavior of the synonym pair *worry & anxiety*. The words are first and foremost presented separately and as a following step, they are compared to one another. Subsequently, the same procedure will be undertaken concerning the synonymous pair *euphoria & excitement*. The last part of this chapter consists of an overall cross-comparison between all four emotional terms on account of conceptual metaphors as well as metonymies encountered with a particular focus on similarities and discrepancies not only among (near) synonyms but also alongside (near) antonyms.

6.1 Metaphorical and metonymical behavior of *worry* & *anxiety*

As aforementioned, this section concerns the detailed portrayal of the results yielded regarding the first near-synonym pair *worry* & *anxiety*. Given that a relatively huge number of metaphorical (as well as metonymical) instances were encountered, each emotional term will first be analyzed separately, followed by a detailed investigation of congruences and distinctions. The first emotional term to be scrutinized in the subsequent section is *worry*.

6.1.1 *Worry*

Given the difficulty of searching for general conceptual metaphors that do not literally contain the target concept in the metaphorical expression, all the subsequently listed instances are derived from collocations of the lexical target domain item *worry*. With respect to this, the Appendix contains a more detailed representation of all occurrences encountered; firstly it is divided into nominal, verbal, adjectival and prepositional collocates, and henceforth it is classified according to their most likely source domains. The most representative metaphorical source domains of the target concept *worry* are listed in the following table. Concerning this, it is worth mentioning that some of the metaphors encountered by means of the corpus query are based on previous literature and were already described in several studies based on lexical introspective methods. However, it is also essential to point out that various additional subtypes can be identified.

Table 1. Metaphorical source domains (SD) of the emotional concept *worry*, ranked by frequency of occurrence

Conceptual Metaphors	Raw frequency / percentage ratio
WORRY IS A LIQUID/GASEOUS SUBSTANCE (IN A CONTAINER) (water metaphors)	46 / 27.21%
WORRY IS A LIVING ORGANISM/ANIMATE BEING	31 / 18.34%
WORRY IS A CONCRETE/PHYSICAL OBJECT	31 / 18.34%
WORRY IS A LOCATION	8 / 4.73%
WORRY IS A CONTAINER	7 / 4.14%
WORRY IS (A STINGING) PAIN	5 / 2.95%
WORRY IS LUMINOSITY/COLOR	5 / 2.95%
WORRY IS PART OF A WHOLE	5 / 2.95%
WORRY IS INSANITY	3 / 1.77%

WORRY IS AN EVENT	3 / 1.77%
WORRY IS ELECTRICITY	3 / 1.77%
WORRY IS COLDNESS	2 / 1.18%
WORRY IS A NUMERIC VALUE	2 / 1.18%
WORRY IS WAR	2 / 1.18%
DIRECT LINGUISTIC METAPHOR	2 / 1.18%
WORRY IS A SCRIPT	1 / 0.59%
WORRY IS A REINFORCER	1 / 0.59%
METONYMY (facial changes)	12 / 7.10%
Total	Σ 169

As can be discerned from the above table, a relatively large number of conceptual metaphors related to the target domain *worry* can be identified in the COCA query. With respect to this, it is worth noting that WORRY IS A LIQUID/GASEOUS SUBSTANCE, is by far the most productive metaphorical source domain given that 46 different instances of metaphorical collocates referring to this conceptualization can be withdrawn from the corpus. *Worry* is thereby partly conceived as a LIQUID IN A CONTAINER (with the human body being interpreted as the container). This is a conceptual metaphor that was already largely used in existing literature to describe the conceptualization of various emotional terms (cf. Stefanowitsch 2006: 375; Kövecses 2010: 123ff.). However, not all of the metaphors encountered display *worry* as being inside a container, as the subsequent example will reveal. The personification of WORRY AS A LIVING ORGANISM/ANIMATE BEING as well as the view of *worry* as a CONCRETE/PHYSICAL OBJECT was equally productive and yielded a considerably high number of different collocates referring to the respective domains (31). Other source domains are represented by a remarkably lower relative frequency, which signifies that by and large, *worry* is conceptualized through the three above-mentioned mappings. However, this should not automatically lead to the fallacy that the other domains are less important, given that a corpus query can hardly be 100% complete. As a matter of fact, allocating the metaphors to the various source domains, as well as naming them predominantly depends on the intuition of the researcher. It is worth pointing out that WORRY IS A CONTAINER is a conceptual metaphor that is widely discussed in existing literature and is regarded as one of the most prominent conceptual source domains. In relation to this, *worry* indeed yielded a number of hits – however, it is far from the most important source

domain when it comes to the conceptualization of the *worry*.

Another interesting insight gained is the fact that several conceptual metaphors that were heretofore not classified were encountered in the present investigation; instances of this phenomenon are metaphorical mappings such as WORRY IS ELECTRICITY, WORRY IS A SCRIPT or WORRY IS A NUMERIC VALUE. Finally, the search for conceptual metonymy yielded a highly surprising outcome, given that 13 examples of *worry* involved bodily (or facial) changes that *stand for* the emotion. All in all, it must be mentioned that not only metonymies, but also a vast number of conceptual metaphors are constructed from alterations of facial expressions of the human who finds him/herself in a state of *worry*. Equally, PAIN metaphors can be considered as instances of bodily reactions.

In the following sections, I will briefly explain the most significant aspects regarding the most prominent metaphors. The reader may refer to *Appendix 1* for a more complete and detailed list of linguistic expressions as well as the division into nominal, verbal adjectival and prepositional collocates referring to the various source domains.

A. WORRY IS A LIQUID/GASEOUS SUBSTANCE (IN A CONTAINER)

As aforementioned, this subgroup is, with a relative frequency of 46, by and large the most productive metaphorical source domain. *Worry* is hereby conceptualized as a liquid or gaseous substance. The expressions encountered point towards the fact that *worry*, as the liquid substance, is placed in a CONTAINER, the latter being the human body in which the liquid is conceived as floating, being held or continuously rising up (cf. Lakoff&Johnson 1980: 29). With respect to this idea, on a general level, the most pervasive signs for the conceptualization of *worry* as being something located inside the human body are prepositional structures, such as *worry [...] in*, *worry [...] inside* or *worry [...] into* some other entity. Examples that contain prepositional phrases but at the same time portray *worry* as a certain kind of substance are: “you could see the worry seeping into his face”, “she held worry in her mind”, “he felt worry creeping into his chest”, “worry filling his stomach with pressure”, “and worry surge through her”, “full of worry”, “worry etched into her mind/ they inject worry into our lives”, “he felt worry creeping into his chest” or “worry floating inside Dale's stomach”.

Additionally, there appear to be a number of metaphorical conceptualizations where *worry* is conceived as a liquid/gaseous substance – however, its not necessarily visualized inside a container. Instances pointing towards this very phenomenon are exemplified by the following data extracted from

the COCA: “the level of worry is rising”, “a wave of worry washing over her”, “worry filled the air between them”, “worry began to mix with anger/sadness”, “worry floated in the air”, “worry dissolved the tension between them”, “a vapor of worry surrounding the child”, “he could feel waves of worry rolling off him” as well as “subtle waves of worry across his brow”. It can clearly be deduced from these examples that *worry* is either viewed as a gaseous substance floating in the air, or as some kind of liquid that is equal to water, driven by physical laws and hence able to form waves. Concerning the illustrative phrase “worry began to mix with anger/sadness”, both emotions are conceived as a different set of substances that are able to mix and mingle, presumably inside the human body that provides the CONTAINER in which the substances are being mixed.

Conceptual mappings referring to the measurement of an emotion via scales or increasing/decreasing levels, as well as referring to the *degree* of *worry*, are inter alia collocations. These collocations demonstrated one of the highest overall frequencies. Regarding this fact, it can be mentioned in advance that this type of metaphor was found to be very productive amongst all four emotional terms used in this analysis.

B. WORRY IS A LIVING ORGANISM/ANIMATE BEING

Furthermore, *worry* is frequently understood via the idea of *personification*, a viewpoint from a larger scale that interprets the emotion as a LIVING ORGANISM OR ANIMATE BEING. As aforementioned, this allows us to understand a great variety of non-human entities in terms of human characteristics or, as in the present case, characteristics of living organisms. The latter can, on the one hand, take the form of an animal “worry began poking at her”, “worry gnawed at her”, “worry nagged at Rachel”, “worry chewed at him”, “worry is worming its way into”, “worry hummed in the air” or on the other hand, might also be conceived as a plant, as examples such as “he saw the worry bloom” or “worry stems from an honest mistake”, show. Some occurrences even reveal instances of literal personification, for *worry* might take human characteristics such as “sick”, “old”, “tired” or “serious”, or perform actions only living organism can do, as for example “enter something”, “fall silent”, or “coursing around in its familiar pace”. For a more detailed portrayal of the results yielded, I refer the reader to the *Appendix 1*.

C. WORRY IS A CONCRETE/PHYSICAL OBJECT

Given the fact that the emotional term *worry* is an abstract concept and hence, rather difficult to be comprehended by human beings, it is highly understandable why it shows a great likelihood to be conceptualized via the terminology of CONCRETE/PHYSICAL OBJECTS. A number of instances refer to the “dimensions” of *worry* as “enormous”, “big”, “small” or “little” as well as its “burden”, “weight” or “amount”. For example, “he carried the weight of his worry with him/bent under the weight of their worry” or “his face heavy with worry”. Other collocations describe its physical position as “widespread”, “below” or as being *located outside* of our bodies (which is of special interest given that in the majority of instances the emotion is located *inside* the human body). Equal to the SUBSTANCE metaphors, scales and measurement play an important part concerning this metaphor subtype, given that weight and heaviness can similarly affect the level of a substance as measured with a scale. Other findings demonstrate that *worry* might be conceptualized as a *knot* (his worry *unraveling* under their influence) or as a kind of material that can be cut through (that did not cut through her worry). WORRY IS PART OF A WHOLE might hereby be interpreted as a subtype of the PHYSICAL OBJECT metaphors.

D. WORRY IS A CONTAINER

Expressions relating to the general idea of WORRY BEING A CONTAINER are phrases like “the content of worry”, “worry contains”, “worry involves” or also the prepositional structure “*in* a state of worry”. Two findings refer to the depth of *worry*, namely “deep worry” and “deep inside her worry”. The example sentence “that decision comes amidst worry” clearly demonstrates that something else (here “that decision”) is located in the middle or rather inside the *worry*, henceforth it can be assumed that *worry* is also here understood as a container-like vessel inside of which the decision is placed. As aforementioned, this widely discussed metaphor is hardly productive concerning the conceptualization of the emotion *worry*. Nonetheless, it certainly has to be pointed out that those few instances seem to be of great importance due to the relatively high absolute frequencies in the COCA, especially regarding the prepositional expression “*in* a state of worry”.

E. WORRY IS A (STINGING) PAIN

This metaphor subtype, which certainly builds on bodily reactions to emotion, is of special interest given that it does not appear in existing literature. Some emotions might indeed be conceived as pain or

annoying. However, a linguistic strategy that occurs far more frequently is the mapping EMOTION X IS ILLNESS/INSANITY. The results yielded in the corpus query show that *worry* is comprehended via the terminology of a particular kind of (stinging) pain. Examples of this phenomenon are metaphorical expressions such as “worry is needling the edge of her brain”, “worry pinched my brow” or “worry edged into her mind”. The phrase “sick with worry” would better be classified into the mapping WORRY IS AN ILLNESS. However, given that it was the only instance of ILLNESS encountered, and further due to the fact that ILLNESS may involve a certain type of pain, this expression was allocated to the source domain WORRY IS PAIN. “Harry could feel the sharp worry” equally represents a not fully clear-cut case, yet it may be assumed that feeling a sharp object with one's sensory apparatus shows great likelihood to cause pain in the receiver of the emotion.

F. WORRY IS LUMINOSITY/COLOR²

The source domain WORRY IS LUMINOSITY and the related subtype WORRY IS COLOR is located in the middle field of productiveness, given that alongside with two other mappings, five metaphorical collocations can be extracted. When paying attention to general physics, light (which further determines luminosity or brightness) is composed of several different rays or particles (depending if you are a defender of the wave theory or quantum mechanics of light; cf. Jagielski 2009: 6 – 9) that when reaching the surface of an object, trigger the experience of different colors in the eyes of the observer. Thus, luminosity metaphors ought actually be assigned a subtype of color metaphors. However, regarding the fact that X IS LIGHT mappings are highly pervasive in existing literature, I decided not to leave this reality aside and henceforth attributed both conceptual metaphor types to the same category. Yet, given that LIGHT is typically associated with positive emotion (e.g. “gleaming with joy), and *worry* is arguably considered as negative, the present domain was rather labeled as LUMINOSITY than LIGHT. The phrase “worry flickered across his face”, is a very illustrative example of when *worry* is comprehended via the terminology of brightness, because it is usually rays of light that flicker across a surface. Two of the other instances of the COLOR subtype draw upon bodily reactions, indicating that *worry* is dis(coloring) one's face. Expressions such as “her face was dark with worry” or “I'll go gray with worry” certainly underline this assertion. The phrase “they are all staring with pale worry” characterizes *worry* as a *pale* entity. This example could thus be attributed to the PHYSICAL OBJECT or PERSONIFICATION metaphors. In the last example, “worry discolored

² At this point it is worth mentioning that the LUMINOSITY (LIGHT) domain is somewhat questionable and is predominantly based on my intuition.

every frame of his dream”, *worry* is the agent that is discoloring a person's dreams and might hence be interpreted as darkness or a shadow, a phenomenon that resulted from light or its absence. This is especially relevant in the given case, for darkness is usually associated with negative emotions.

G. WORRY IS INSANITY

This group of conceptual metaphors is first and foremost characterized by prepositional structures including “with”. “Frantic with worry”, “crazy with worry” or “mad with worry” are examples that clearly underline this statement and demonstrate that *worry* is conceptualized as a condition that drives human beings insane. Given that *worry* is a rather negatively connoted emotion (as will be demonstrated later), the insanity connected to it is comprehended as something undesirable. It is, however, worth mentioning that emotional insanity might also carry a highly positive connotation when associated with positively connoted emotions such as *love*, or as will be demonstrated in the course of this paper, *excitement*.

H. WORRY IS ELECTRICITY

Another highly interesting instance of the figurative representation of emotions can be seen through ELECTRICITY metaphors. These draw upon the laws of physics, similar to LIGHT or WAVE metaphors. Furthermore, they are grounded in embodiment, given that they refer to the physical reactions of the human body when being in a state of *worry*. “A low voltage shock of worry tingled in the back of his mind”, “my worry numbing my mind like a stroke” and “worry paralyzes the sufferer” are very illustrative and self-explanatory demonstrations for how *worry* is conceptualized as electricity and thus, no further clarification is needed.

Yet, it should be pointed out that ELECTRICITY metaphors could be considered a subtype of FORCE-DYNAMIC (or NATURAL/PHYSICAL FORCE) metaphors, which are assumed to play an eminent role concerning the conceptualization of emotional concepts (Kövecses 2000: 61ff.). Hence, this finding perfectly underlines the theory mentioned in the literature review (cf. Chapter 2.2.3).

I. WORRY IS A NUMERIC VALUE/A SCRIPT

Metaphors of these types have so far not been listed in the literature and therefore represent a complete novelty. However, it has to be pointed out that the occurrence of both source domains is rare. “Her intense worry multiplied by six” as well as “added worry” are instances in which *worry* is

conceptualized via the terminology of numerical values, whereas “worry written on his face” portrays this emotion as a certain kind of script.

J. Evidence for CONCEPTUAL METONYMY

As it is discernible from *Table 1*, a surprisingly high number of instances referring to conceptual metonymy could be extracted from the COCA. In chapter 2.1.3 it was discussed that conceptual metonymy can be described as a phenomenon where the physical reaction of the human body “stands for” the emotion. However, the following examples are not completely “clean” cases, given that manual corpus searches have to contain the lexical target domain item, which again hardly allows one to track conceptual metonymies. Contrary to conceptual metaphors, in metonymy two elements are contiguously related to each other in the conceptual system within a single domain. Concerning the following examples however, it is not entirely obvious if the structures are conceptualized in two different or one single conceptual domain.

Yet, it must be stated that emotions are widely grounded in embodiment, or in other words, entering a certain state of emotion evokes physical reactions in the body of the human experiencing the emotion that are frequently overtly displayed through facial expressions and gestures. Hence, particular expressions are unconsciously connected to certain types of emotions. In the case of the emotional term *worry*, undergoing this emotional state manifests itself predominantly through facial expressions; people might be able to discern solely by the gestures and facial expression of a person that he/she is worried. The examples encountered in the corpus confirm this assertion. *Worry* might for instance cause the widening of the eyes, or the creasing of one's forehead as observed in expressions such as “her eyes wide with worry”, “his brow creased with worry”, “sharp edges of worry creased his forehead”, “her expression taut with worry”, “his face grows thick with worry” or “her face wrinkled with worry”. Persons who are constantly worried might obtain permanent worry marks on their faces as exemplified in the expression they had “worry line[s] between [their] eyes” or a constantly wrinkled brow. The instance “wringing his hands with worry” could be considered as a statistical outsider, given that it is the only occurrence in which worry manifests itself through a physical gesture rather than a facial expression.

The principal aim of the above analysis was merely to present genuine, new insights gained by the corpus investigation as well as to demonstrate the most important examples encountered through the

query. As a result, this presentation is rather superficial; for more detailed examples and to find the source domains not separately mentioned in this chapter, please consider *Appendix 1*.

Frequency of occurrence

A quick glance at the most frequent co-occurrences (cf. Table 2) reveals several relevant insights. On the one hand, the importance of facial expressions and the manifestation of *worry* in the voice as well as the fact that prepositions enjoy an exceptional status. On the other hand, it is remarkable that verbal collocates are by far the rarest ones, given that none of them could enter the list of the most frequent collocations. Six out of the ten most frequent co-occurring lexical items are prepositional constructions, which are far more frequent in comparison to other metaphorical expressions. Additionally, all of the examples presented in *Table 2*, except one, contain a prepositional phrase.

Table 2. The ten most frequent co-occurrences of *worry*

Collocation	Absolute subtype frequency
of → full of worry/a stain of worry	1033
with → sick/frantic/crazy with worry	475
in → in a state of worry	371
on → worry on their face	241
big/biggest	130/97
face → you could see the worry seeping into his face	69
over → worry over what will happen	68
eyes → her eyes wide with worry	46
lot – a lot of worry	45
at → worry nagged at her	37

Despite the fact that the prepositions expressing a metaphorical understanding of an emotion are rather few in number (of, with, in, on at), this remarkable numerical distinction between prepositional constructions and other word classes leads to a considerable impact of the former on the overall distribution of conceptual metaphors (cf. Oster 2010: 744). This is clearly demonstrated in *Table 2*.

The above analysis is aimed at investigating in what ways the emotion *worry* is conceived in the human conceptual system, underlined by prominent instances of conceptual metaphor as well as metonymy. The subsequent subsection will henceforth be concerned with the examination of a near-synonym, *anxiety*.

6.1.2 Anxiety

In contrast to the corpus query for the search item *worry*, the investigation of *anxiety* revealed considerably fewer occurrences of conceptual metaphors. This phenomenon might possibly be explained by the fact that *anxiety* describes a far more specific emotion and is first and foremost applied in clinical, psychological and academic contexts rather than in colloquial speech, newspapers or fiction. However, sufficient instances referring to metaphorical conceptualizations could be identified in order to demonstrate in what ways *anxiety* is comprehended in the human conceptual system as well as to point out if and how different the near-synonyms *worry* and *anxiety* are metaphorically (and metonymically) understood.

Equivalent to the previous inquiry, all the subsequently listed instances contain the lexical target domain item *anxiety*. Table 3 portrays the most representative metaphorical source domains, as identified for the target concept. All conceptual metaphors encountered by means of the corpus query are based on previously discussed literature and were already described in several studies based on lexical introspective methods. For *anxiety*, no additional subdomains were identified.

Table 3. Metaphorical source domains (SD) of the emotional concept *anxiety*, ranked by frequency of occurrence

Conceptual Metaphors	Raw frequency / percentage ratio
ANXIETY IS A CONCRETE/PHYSICAL OBJECT	40 / 38.46%
ANXIETY IS A LIQUID IN A CONTAINER	29 / 27.88%
ANXIETY IS A LIVING ORGANISM/ANIMATE BEING	14 / 13.46%
ANXIETY IS AN EVENT/ A SITUATION	6 / 5.76%
ANXIETY IS A CONTAINER	5 / 4.80%
ANXIETY IS A SUBSTANCE	3 / 2.88%
ANXIETY IS WAR	2 / 1.92%
ANXIETY IS PRESSURE IN A CONTAINER	2 / 1.92%
ANXIETY IS ILLNESS	1 / 0.96%
METONYMY	2 / 1.92%
Total	Σ 104

As can be deduced from the above table, considerably fewer source domains were identified for the lexical target domain *anxiety*, all of which were already mentioned in existing literature. However, its

interesting to notice that the three source domains with the highest relative frequencies in COCA overlap with those encountered for the search item *worry*, though in a different order relative to their frequencies. In opposition to the former analysis where the most prominent conceptual mapping showed that WORRY IS A LIQUID/GASEOUS SUBSTANCE (IN A CONTAINER), the most productive metaphorical source domain for *anxiety* is the CONCRETE/PHYSICAL OBJECT mapping. Furthermore, *anxiety* is solely conceptualized as being a LIQUID IN A CONTAINER. There are no examples that refer to the emotion as a gaseous substance. ANXIETY AS A SUBSTANCE is a more general domain than while portraying *anxiety* as a substance, neither specifies a liquid or in a container.

The personification of *anxiety* that classifies this emotion as a LIVING ORGANISM/ANIMATE BEING also shows a relatively high productivity index, given that 16 instances that relate to this metaphor could be uncovered through the corpus query. This again supports the claim raised in the literature review that humans tend to conceptualize abstract entities in terms of subject matters they are familiar with. In this case, human characteristics are often used, or at least the properties of organisms that structure the world around us.

As a following step, I will again explain the most significant aspects regarding the most prominent metaphors. Please refer to *Appendix 2* for a more complete and detailed list of linguistic expressions as well as the division into nominal, verbal adjectival and prepositional collocates connected to the various source domains.

A. ANXIETY IS A CONCRETE/PHYSICAL OBJECT

As aforementioned, human beings show a great likelihood for conceptualizing abstract concepts via the terminology of concrete ones, in order to facilitate greater understanding. The following examples show that the abstract emotional term *anxiety* is frequently conceptualized as CONCRETE/PHYSICAL OBJECT that can be measured, felt or possess a physical location. A number of metaphorical collocates refer to the measurement of anxiety, such as “scale”, “measures”, “amount”, “widespread” or “indicate”, while others characterize this emotion through its physical dimension, as co-occurrences such as “little”, “major”, “multidimensional”, “enormous” or “huge” illustratively demonstrate. Thus, *anxiety* is conceived as a concrete object with a certain expansion and size. Further interesting metaphorical collocates are for instance the fact that one can “hide one's anxiety”, that something “creates or produces anxiety” or even that *anxiety* might be “modern” or “physical”. Furthermore, the investigation of prepositional collocates reveals illuminating insights, for they tend to refer to the

physical position of *anxiety*. Examples that support the latter claim are: “the anxiety over something”, “stress and anxiety on young girls”, “between anxiety and daily existence”, “anxiety towards the content knowledge of mathematics”, “under the influence of anxiety”, “the model has been recently extended beyond anxiety”, “beneath his fear and anxiety” and “to be beside oneself with anxiety/besides the anxiety attack”. Other instances that classify anxiety as a concrete entity are the passive constructions “anxiety was found” or “anxiety was based” as well as collocates such as the “direction of anxiety” and “lead towards anxiety”.

B. ANXIETY IS A LIQUID IN A CONTAINER

With respect to this subdomain, it is worth noting that *anxiety* is predominantly conceptualized as a liquid substance rather than a gaseous one. Additionally, most collocations adumbrate towards the conceptualization of the human body as a CONTAINER that holds these very substances and seems to increase or decrease in direct relation to the intensity of the emotion. Just as with the PHYSICAL OBJECT metaphors, the LIQUID IN A CONTAINER mappings can be “measured”. However, in this case measurement is less with a “scale” but rather from the “level of height” of the substance. The example phrases “increasing/decreasing the level(s) of anxiety” or “the level of anxiety was measured by” confirm this statement. *Anxiety* is, hence, conceived as a substance of which the level is “increasing” or “decreasing”, “reduced” or “rising”, preeminently depending on how strongly the emotion is perceived. Furthermore, the level of the substance in the container can be “low”, “lessened”, “below the baseline” “elevated” or even “mounting” which then would refer to a really strong feeling of *anxiety*. Two instances that clearly refer to the conceptualization of the human body as vessel for this (liquid) substance are “he was filled with anxiety” or “full of anxiety they decided to”, given that the emotion seems to be continuously poured into the body of the person who is experiencing a feeling of *anxiety*. The latter assertion can be further emphasized by the conceptualization of *anxiety* as a running “stream” or “river” inside the human body, as in “a stream of anxiety went through him” or “a river of anxiety (flows) inside him”.

Additional instances that refer to the comprehension of *anxiety* via the terminology of a liquid substance are “free-floating anxiety” or “bottling up anxiety”. “Anxiety rippled across her shoulder” is less an example of a CONTAINER metaphor, yet it may be stated that *anxiety* is being understood in terms of a liquid or a slight wave that is floating across the person's shoulder, since a “ripple” is defined according to the *Cambridge Online Dictionary* as a “small wave on the surface of water”. A last

instance that classifies *anxiety* as a LIQUID is “the anxiety began to drain”. In this example, “to drain” is described as “removing liquid from something”. Therefore, if the emotion starts to drain, one might imagine it as liquid running out of the human body, or in metaphorical terms LIQUID pouring out of a CONTAINER.

C. ANXIETY IS A LIVING ORGANISM/ANIMATE BEING

The third most frequent conceptual metaphor of *anxiety* as identified in the COCA is the LIVING ORGANISM/ANIMATE BEING metaphor, which is partially characterized by personification but also by “animalisms” or living organisms in general. Obvious examples that allow *anxiety* to be comprehended in terms of an animate entity are “anxiety began eating at my stomach”, “growing anxiety”, “there is some anxiety moving around” and “anxiety gripped us all equally”. “To grip” is defined as “to hold very tightly” (*Cambridge Online Dictionary*), as for instance “the baby gripped my finger” and is, hence, also particularly utilized in connection with animate beings. Other results portray *anxiety* with partially human characteristics such as “old”, “free” “strong”, “competitive”, “following” or “showing” something else. Finally, *anxiety* might “come out all of a sudden”, be “natural” or “make somebody shiver”. To sum up, the LIVING ORGANISM mapping seems to be relatively prominent when it comes to the conceptualization of this emotion. Even though the corpus query did not yield so many examples, a simple Google search revealed additional colloquial personifications such as “anxiety knocked at the door” or “anxiety chewed him up from inside”.

D. ANXIETY IS AN EVENT/ A SITUATION

It was argued in the theory review that conceiving emotions in terms of EVENT-STRUCTURE metaphors is quite a common phenomenon. The present corpus search yielded some instances that might possibly refer to an EVENT or a SITUATION, although the following examples could equally have been assigned to other categories. “To exhibit one's anxiety”, “public anxiety” or to say that “the anxiety began on a foggy September morning” are instances that show great likelihood to be related to a certain event. “Severe anxiety” as well as “to manage one's anxiety” refers to a SITUATION, since a situation can be “severe” as well as “managed”. “The source of anxiety” might equally be classified as a LIQUID IN A CONTAINER metaphor, however, given the fact that a source is not only the origin of a watery spring, but also “the cause of something” or “the place something comes from” (*Cambridge Online Dictionary*), “the source of anxiety” can equally be interpreted as referring to an event or a

situation.

E. ANXIETY IS A CONTAINER

This type of conceptual metaphor again confirms what has been stated in the literature review, despite the fact that the data analysis yielded few instances in which anxiety is characterized as a CONTAINER. The most prominent example is, similarly to the case of *worry*, the prepositional construction of being “in a state of anxiety”. Also, other CONTAINER references could be revealed, such as “anxiety includes” and “deep anxiety”. These are rather obvious examples that illustrate being “deep inside some entity” or being able “to include” something and the existence of a container-like vessel is necessary. The expression “great variance outside anxiety” provides good evidence to suggest that *anxiety* is being depicted as a CONTAINER, for the mentioning of an *outside* leads to the assumption that there must equally be an *inside*. “To allay” may be defined as “to satisfy one's thirst”, which in everyday life basically requires water or any other kind of liquid that is poured into the human body. Hence, coming back to the present case, if *anxiety* is being “allayed”, it is metaphorically stilled by a kind of substance that is filled *into* it, which again characterizes the emotion as a CONTAINER.

F. ANXIETY IS A SUBSTANCE

As has been discussed before, SUBSTANCE metaphors were assigned a separate category, due to the fact that in the following instances, *anxiety* is viewed more as any type of substance rather than solely a liquid and additionally, the substance does not seem to be held inside a container, as was the case in former instances. Within the SUBSTANCE metaphors, *anxiety* shows properties such as “cold”, “mild” or “fresh”, so the abstract emotion category is conceptualized as something concrete and palpable.

G. ANXIETY IS WAR

WAR metaphors are one of the most prominent linguistic strategies used in CMT and they were discussed in great detail in the existing literature (cf. Lakoff&Johnson 1980: 4). With respect to this, the conceptual metaphor ARGUMENT IS WAR, underlined by phrases such as “he attacked my arguments” or “I defended my arguments”, was one of the first principal examples provided by Lakoff&Johnson (1980: 4). Indeed, the present analysis yielded only two instances in which *anxiety* is conceptualized via the terminology of WAR, yet it can be stated that both examples are classic and popular. A term used both in colloquial speech as well as clinical reports and academic literature is the

notion “anxiety attack”. The sufferer is hence conceived of as being attacked by this intense emotion and seems to be defenselessly exposed to it. The second very illustrative example encountered in the COCA is the phrase “a battle against anxiety and loneliness”, which is again self-explanatory since “a battle against something” is prototypically associated with the source domain WAR. In other words, the person who is undergoing a state of *anxiety* is trying to fight against it, in the same way that literal battles are fought.

H. ANXIETY IS PRESSURE IN A CONTAINER

Generally speaking, PRESSURE metaphors are also strongly associated with emotions and feelings, given that a person who is undergoing the state of a certain emotion might experience particular feelings of pressure and tension. In relation to this, the following two examples are good evidence to suggest that the human body is viewed as the CONTAINER inside of which the pressure is building up and henceforth might or might not be released in order to reduce the unpleasant tension. Two examples dealt with in the corpus query that refer to these phenomena are “the tension of anxiety had been replaced” and “the efforts included releasing the tension of anxiety”.

I. ANXIETY IS ILLNESS

Although there was merely one instance referring to the conceptualization of *anxiety* as an ILLNESS, it is a very illustrative example; “debilitating anxiety” was the trigger to assign a separate category to this particular source domain. The adjective “debilitating” is, according to the *Cambridge Online Dictionary*, defined as “making someone physically weak” and is typically associated with diseases and illnesses. Therefore, if *anxiety* is *debilitating* the person, it is legitimate to equate it with the sensation of suffering from an illness.

J. Evidence for CONCEPTUAL METONYMY

As can be seen from *Table 3*, unlike in the case of *worry* there are merely two instances that provide evidence for conceptual metonymy related to the emotion *anxiety*. Furthermore, it is important to mention that both cases are exclusively related to physical reactions of the human body, yet there are no instances that might lead to the assumption that an anxious person displays his/her feeling through facial expressions. The two occurrences found are “he was feeling cold with anxiety” and “fresh pangs of anxiety began eating up my stomach”. As the former example clearly displays, the human being

experiencing the feeling of *anxiety* is likely to feel cold by doing so; therefore, the person's physical reaction is a cold shiver gliding through the body. This quote was already analyzed within the LIVING ORGANISM/ANIMATE BEING section and is a very figurative example for both a metaphor and a metonymy, given that “anxiety began eating up” is a figurative case of a metaphor. However, the example can also be interpreted as a metonymy, based on the fact that “pangs” are characterized as a “sudden feeling of pain” (*Cambridge Online Dictionary*) inside the stomach. Hence, the anxious person is experiencing feelings of pain inside his/her stomach, caused by the sensation of *anxiety*. With respect to this, it may be stated that feeling queasy and uneasy is relatively prototypically associated with both *worry* and *anxiety*. However, it's worth noting that in relation to the former, no such instance was encountered in the COCA, while worrying facial expressions are absent in the present case of *anxiety*.

In contrast to the analysis of the emotional term *worry*, the portrayal of *anxiety* was slightly more detailed for all different types of conceptual metaphors that were presented. This is predominantly based on the fact that fewer types were extracted from the corpus. The following subsection is devoted to displaying the ten most frequent collocates that are connected with *anxiety*.

Frequency of occurrence

Taking a look at the ten most frequently co-occurring lexical items of *anxiety* (cf. Table 4) sheds new light on the distribution of collocates. Similar to the case of *worry*, none of the verbal collocations showed a high enough frequency to enter the list of the most frequent co-occurrences. Yet other relevant insights could be revealed, such as the fact that prepositions again seem to obtain a quite exceptional status. However, contrary to the previous analysis, nominal and adjectival collocates prove to be of almost equal importance; as can be seen from Table 4, four out of ten collocations are nominal and a further three are adjectival. Moreover, it is highly remarkable that seven out of ten co-occurrences were assigned to LIQUID IN A CONTAINER or PHYSICAL OBJECT metaphors, which were the metaphorical mappings listed as the most productive in Table 3. As aforementioned, the conceptual metaphor ANXIETY IS WAR was only coined by two instances found in the COCA, yet as the present analysis reveals, “anxiety attack” can be found among the most frequent co-occurrences, which again provides some evidence for its relevance. Prepositional phrases with “in”, such as “in a state of anxiety” have a raw frequency of 1785, making them by far the most frequent collocates. This fact again supports the significance of the widely discussed CONTAINER metaphors.

Table 4. The ten most frequent co-occurrences of *anxiety*

Collocation	Absolute subtype frequency
in → in a state of anxiety	1785
over → the anxiety over sth.	473
Levels	412
high	280
on → on test anxiety	255
competitive	206
scores	141
scale	136
low/lower	115
attack (noun)	104

The above analysis is aimed at investigating in which ways the emotion *anxiety* is conceived in the human conceptual system, underlined by eminent instances of conceptual metaphor as well as conceptual metonymy. The following section will be devoted to a succinct comparison of overall features encountered between the near-synonym pair *worry & anxiety*.

6.1.3 *Worry & anxiety* – a comparison

As can be extracted from the above analysis, despite being near-synonyms, several discrepancies regarding the different conceptual metaphor subtypes were encountered. Yet, it may be stated that the three most productive source domains are congruent with regard to both emotional terms, although they appear in a different order of occurrence. *Table 5* displays the most prominent source domains of *worry & anxiety*, as well as the absolute number of instances encountered in the COCA and the respective relative frequencies in %.

Table 5. The 3 most prominent source domains (SD) of *worry* & *anxiety* and their absolute and relative frequencies (in %)

<i>Worry</i>			<i>Anxiety</i>		
Conceptual Metaphors	Absolute frequency	Relative frequency	Conceptual Metaphors	Absolute frequency	Relative frequency
WORRY IS A LIQUID/GASEOUS SUBSTANCE (IN A CONTAINER)	46	27.21%	ANXIETY IS A CONCRETE/PHYSICAL OBJECT	40	38.6%
WORRY IS A LIVING ORGANISM/ANIMATE BEING	31	18.34%	ANXIETY IS A LIQUID IN A CONTAINER	29	27.88%
WORRY IS A CONCRETE/PHYSICAL OBJECT	31	18.34%	ANXIETY IS A LIVING ORGANISM/ANIMATE BEING	14	13.46%

It is worth noting that with respect to both cases, the emotions tend to be conceptualized in terms of concrete objects, liquid substances or animate beings. Furthermore, all three conceptual metaphors can already be found in the existing literature; it was claimed beforehand that those source domains (SD) are prototypically associated with the conceptualization of emotions. Hence, the outcome of the present analysis clearly supports the existing assertions and yielded no unexpected or surprising results.

Apart from the three SD presented in the above table, some more instances of overlaps could be encountered in account of the synonyms scrutinized. It has been demonstrated that both *worry* & *anxiety* are conceptualized in terms of the widely discussed CONTAINER schema. Meanwhile, further overlaps with this schema were discovered concerning the understanding of these emotions in terms of WAR and via the terminology of the EVENT-STRUCTURE source domain. Indeed, the respective (nearly) congruent conceptual metaphors are predominantly composed of distinct collocates (cf. *Appendix 1* and *2*), as has been shown in the previous sub-chapters, yet it is legitimate to claim that all the respective collocates activate the same understandings in the human conceptual system.

However, the differences encountered are of particular interest, given that these findings may alter the existing way of looking at synonyms. The first distinct outcome was that the analysis of *worry* yielded far more results than the investigation of *anxiety*, not only with respect to the number of different collocations extracted, but also with respect to the number of metaphor subtypes coined. Regarding *worry*, there were 17 source domains to be labeled, while *anxiety* on the other hand only revealed nine metaphorical subtypes. Given the fact that six out of latter nine source domains are

congruent among both emotions, we can assume that the term *worry* may be more present in everyday speech and is hence more productive in terms of creativity. *Table 6* displays the six (almost) overlapping source domains extracted from the COCA for both emotions.

Table 6. The 6 overlapping conceptual mappings found for *worry* & *anxiety*

Conceptual metaphors- <i>Worry</i>	Conceptual metaphors - <i>Anxiety</i>
WORRY IS A LIQUID/GASEOUS SUBSTANCE (IN A CONTAINER)	ANXIETY IS A LIQUID IN A CONTAINER
WORRY IS A LIVING ORGANISM/ANIMATE BEING	ANXIETY IS A LIVING ORGANISM/ANIMATE BEING
WORRY IS A CONCRETE/PHYSICAL OBJECT	ANXIETY IS A CONCRETE/PHYSICAL OBJECT
WORRY IS A CONTAINER	ANXIETY IS A CONTAINER
WORRY IS WAR	ANXIETY IS WAR
WORRY IS AN EVENT	ANXIETY IS AN EVENT/ A SITUATION

As can be noticed in the above depiction, not all of the source domains are complete overlaps. However, those slight differences have already been discussed in greater detail in the previous chapters and so a revision of these findings can be left aside.

A further discovery was that both nouns yielded fruitful results regarding the extraction of conceptual metonymy, a fact that was by no means obvious at the beginning of the study. Yet, as aforementioned, the conceptualization of *worry* seems to be more frequently based on physical body reactions as well as facial expressions and gestures than the conceptualization of *anxiety*. This is because regarding the latter, only two instances of metonymy could be extracted from the COCA.

To sum up, the examination of the near-synonymous pair *worry* & *anxiety* revealed several genuine, new insights and shed light on a new dimension of the understanding of synonymous words. Despite having a very similar meaning, both terms turned out to be conceptualized in different ways. However, what is especially worth noting are the discrepancies between the different collocates and frequencies encountered. Chapter 6.3, which is devoted to an overall cross-comparison between all four emotional terms will reveal more insights on account of this subject matter, as will Chapter 7, the investigation of semantic preference and semantic prosody.

Having concluded the detailed analysis of *worry* & *anxiety*, the following subsections will be dedicated to the examination of the near synonyms *euphoria* & *excitement*. As aforementioned, the

latter terms are near antonyms of the former. Therefore, the subsequent analysis is devoted to revealing if likewise, their conceptualizations are antonymous, or if relevant similarities can be discovered between all four emotions.

6.2 Metaphorical and metonymical behavior of *euphoria&excitement*

The present section concerns the detailed illustration of the results yielded regarding the second near-synonym pair *euphoria & excitement*. Equal to Chapter 6.1, each of the emotional nouns will be analyzed separately, according to their metaphorical and metonymical behavior. However, given that again a relatively huge number of instances can be extracted, only the most relevant conceptual metaphors will be taken into deeper consideration. The first emotional term to be scrutinized in the following subsection is *euphoria*.

6.2.1 *Euphoria*

As in the former cases, all the subsequently listed instances contain the lexical target domain item *euphoria*. With respect to this, *Appendix 3* contains a more detailed representation of all occurrences encountered. They are first divided into nominal, verbal, adjectival and prepositional collocates, and they are henceforth classified regarding their most likely source domains. The most representative metaphorical source domains of the target concept *euphoria* are listed in the following table.

Concerning this, it is worth mentioning that most of the metaphors encountered by means of the corpus query are based on previous research and were already described in several studies based on lexical introspective methods. However, it is also essential to point out that some of the following cases are not typically associated with the conceptualization of emotions.

Table 7. Metaphorical source domains (SD) of the emotional concept *euphoria*, ranked by frequency of occurrence

Conceptual Metaphors	Raw frequency / percentage ratio
EUPHORIA IS A LIQUID/GASEOUS SUBSTANCE (IN A CONTAINER) (water metaphors)	36 / 29.75%
EUPHORIA IS A LIVING ORGANISM/ ANIMATE BEING	25 / 20.66%
EUPHORIA IS A CONCRETE/ PHYSICAL OBJECT	18 / 14.88%
EUPHORIA IS AN EVENT	13 / 10.74%

EUPHORIA IS A CONTAINER	8 / 6.61%
EUPHORIA IS PART OF A WHOLE	5 / 4.13%
EUPHORIA IS A PRESSURIZED CONTAINER	4 / 3.30%
EUPHORIA IS WAR	3 / 2.48%
EUPHORIA IS UP	3 / 2.48%
EUPHORIA IS A DESTINATION/ JOURNEY	1 / 0.08%
METONYMY	5 / 4.13%
Total	Σ 121

As can be observed from the above table, 10 different types of conceptual metaphors plus conceptual metonymy can be identified by the COCA query. Once again, the most productive source domain seems to be the LIQUID IN A CONTAINER, whereby euphoria is partly conceptualized as either a liquid or a gaseous substance, both inside a container or outside. Equivalent to the former cases, the personification metaphor EUPHORIA IS A LIVING ORGANISM and the conceptualization of the emotion as a CONCRETE/PHYSICAL OBJECT proved to be highly relevant for the understanding of the present target concept. Most of the other metaphor subtypes were already identified during the examination of *worry & anxiety*, apart from two cases; namely X IS UP and X IS A DESTINATION. These are two conceptual mappings that have been discussed in existing literature in connection to target concepts such as HAPPINESS (HAPPY IS UP) and LOVE (LOVE IS A JOURNEY) (cf. Lakoff&Johnson 1980: 44; Kövecses 2010: 6). Orientational metaphors in connection with an “upwards movement” were claimed to be typically associated with positive feelings and emotional terms, associations which the notion *euphoria* shows great likelihood to be part of. However, a more detailed analysis of this phenomenon will be presented in Chapter 7 – Semantic Preference and Semantic Prosody.

Again, the corpus query yielded several results based on physical reactions that refer to conceptual metonymy. This fact is once more good evidence for Kövecses' claims that emotions are generally grounded in embodiment as well as for the assertion pointed out in the theory review that conceptual metonymies relating to emotions can largely be grouped into two types of "stand for" relationships. More precisely, the CAUSE OF AN EMOTION (STANDS) FOR THE EMOTION and the EFFECT OF THE EMOTION (STANDS) FOR THE EMOTION, the latter tending to be more common than the former (Kövecses 2010: 108). This phenomenon will be discussed in the section on Evidence for “CONCEPTUAL METONYMY”.

A. EUPHORIA IS A (LIQUID/GASEOUS) SUBSTANCE (IN A CONTAINER)

The corpus query yielded 36 instances that refer to the conceptualization of *euphoria* as a LIQUID or GASEOUS SUBSTANCE that is either outside or inside a certain CONTAINER. It is therefore the most prominent source domain regarding the comprehension of this emotion. Certain cases of collocates might also be labeled as *water metaphors*, given that some of the data extracted draws upon characteristics typically associated with water, such as “washing over”, “waves” or “flooded”. Subsequently the LIQUID SUBSTANCE metaphors will be analyzed, followed by the examination of examples connected to GASEOUS SUBSTANCES.

Further prominent examples of LIQUIDITY metaphors are, inter alia, the subtype of *water metaphors* such as “calming waves of swelling euphoria washed over”, “euphoria swept other areas”, “a sigh of euphoria washed over her”, “euphoria flooded the room”, “he might float on euphoria” or “euphoria washing/rushing over her”. A very illustrative example is the idea that you can “induce a mild euphoria”, given that in this case (mild) *euphoria* is figuratively induced into the body of the person who is experiencing the emotion. As such, the body is again representing the container-like vessel which is henceforth going to hold the liquid. Yet, it should be pointed out that “to induce” is a rather abstract term in general, which does not only apply to liquids but is also used in combination with a number of other expressions in figurative terms. Additionally, the adjective “mild” classifies the emotional term as some kind of substance and so this example constitutes the phenomenon of a double metaphor. “He was filled/flooded with euphoria” are further cases of the LIQUID IN A CONTAINER mapping, and so is “euphoria spread through her body”.

Moreover, a great number of adjectives that describe the emotion as a (LIQUID) SUBSTANCE, could be extracted from the COCA. Amongst them are “warm”, “frothy”, “swelling”, “tepid”, “clear”, “dampening”, “outpouring” or “subsiding”. These are terms usually connected to floods. In relation to this, *euphoria* is further conceptualized in a way that it can “spread” or otherwise be “widespread”, which might likewise be viewed as a characteristic of water (or other kinds of liquids). Besides, *euphoria* may have a “sobering” effect on somebody, an effect that can, in colloquial ways, be achieved by having a cold shower. However, euphoria may also cause the opposite, namely a “drunken feeling/state of euphoria”; in this case, euphoria is represented by an alcoholic substance that is filled into the body and as a following step, creates an intoxicated feeling in the human who is undergoing the emotion. This instance will be discussed in more detail when investigating the evidence for conceptual metonymy.

A number of metaphors draw upon the schema of measurable levels of the LIQUID IN A CONTAINER, such as “sustain the level of euphoria”, “intense”, “reduced” or “diminished” *euphoria*. “I felt a single euphoria inside me” is not directly related to a liquid, however, this phrase presents a very straight forward CONTAINER mapping, because the emotion is conceptualized as being inside the human body, which is comprehended as a container-like vessel. In the example “he might float on euphoria”, the person is the entity that is floating on the emotion like a tree-trunk might float on a river. This is not an example in which the liquid is conceptualized in a CONTAINER, but it is definitely related to the *water metaphors*.

It was mentioned before that euphoria is viewed as a positive emotion, yet one example where it is described as “cold”, namely “cold euphoria flooded the room”, was found in the corpus. In spite of this, it may be stated that this occurrence constitutes an exception because it is taken from a science-fiction novel, a genre in which authors tend to apply a number of extraordinary figurative expressions in order to create new worlds.

Having discussed the LIQUID SUBSTANCE metaphors, the next paragraph will focus on GASEOUS SUBSTANCE mappings. Regarding these metaphor subtypes, *euphoria* is characterized as “floating in the air”, “lingering in the air”, or the “air [may be] filled with euphoria”. Other instances encountered were “euphoria evaporates”, a verb typically associated with steam or water vapor, “euphoria dissipates” or “euphoria deflates”. Equally, the prepositional structures “euphoria spread throughout the country/ through the folks” may be interpreted as some kind of GASEOUS SUBSTANCE or watery fog that is making its way throughout the whole country.

The last example for the SUBSTANCE metaphors is “euphoria turned sour before 1992”, a highly creative figurative expression. The latter clearly does not directly refer to a LIQUID IN A CONTAINER, yet it can be argued that “sour” is usually used in connection with substances, be it liquid or of any other type.

B. EUPHORIA IS A LIVING ORGANISM/ ANIMATE BEING

The second most prominent type of source domain is once again the LIVING ORGANISM/ ANIMATE BEING mapping. Some of the respective collocates are equal to the former cases and can further be compared to vivid conventionalized conceptual metaphors, such as the aforementioned SOCIAL ORGANIZATIONS ARE PLANTS mapping. With respect to this, the most prototypical instances where the target domain is conceptualized as a LIVING ORGANISM are collocations like “growth” and “growing”, as in “the growth of euphoria” and “continuously growing euphoria”. Other examples reveal

human or animal characteristics and qualities; among what are the following co-occurrences: “a collapse of euphoria” (which additionally can be interpreted as a PHYSICAL OBJECT metaphor, given that, for instance, also a building could “collapse”), “euphoria greeted technology stocks in the late 1990s”, “short-lived euphoria”, “nervous euphoria”, “strong euphoria”, “mindful/mindless euphoria” or “playful euphoria”. A further collocate referring to the conceptualization of this term as a LIVING ORGANISM is “euphoria died”, for solely an entity that lives can consequently “die”. This expression is also highly conventionalized, because not only *euphoria* but also other inanimate categories are said to “die” figuratively, which could be translated into the literal meaning of “coming to an end”.

Other ANIMATE BEING metaphors could be grouped into the subtype of *movement metaphors*, given that they draw upon physical motions of the entity in question. The respective collocates co-occurring along with *euphoria* are inter alia “came/comes”, “is/was going”, “went”, “fade away”, “returned”, “appeared”, “accompanied”, “disappeared” and “descended”. Also, while to “rush” might indicate the movement of a LIVING ORGANISM, this is not an entirely clear-cut case because “rush” can equally be used in relation to LIQUID SUBSTANCE metaphors.

“A sigh of euphoria followed up” is once again an instance of a double metaphorical structure, given the fact that “a sigh of euphoria” is an unequivocal personification. “To sigh” is, according to the *Cambridge Online Dictionary*, defined as “to breath out slowly and noisily, expressing tiredness, sadness, pleasure etc.” and is generally speaking, strongly connected to human beings. The second part of the above construction “followed up” can again be categorized as the *movement metaphor* subtype, and constitutes a rather unambiguous case since neither euphoria itself nor the metaphorical sigh of euphoria could literally “follow up” anything in terms of physical motion.

The last result to be analyzed when mapping a LIVING ORGANISM is “euphoria led us to believe” and “investor euphoria drove the company to”. The latter of these examples is highly interesting, given that within it there exists a number metaphors, including the verb “to drive”, such as “to drive someone mad/crazy” or “he was driven by greed”. In the present instance however, metaphorical “driving” might rather be interpreted as the cause for a subsequent effect.

C. EUPHORIA IS A CONCRETE/ PHYSICAL OBJECT

Yet again, the assertion that abstract entities tend to be conceptualized in concrete terms has been proven through the corpus investigation of *euphoria*. In total, 18 different instances referring to this phenomenon were extracted. Among these, a number of prepositional structures can be found, inter alia *spacial metaphors* pointing towards a location, such as “alongside euphoria”, “after the euphoria was

behind you”, “surrounded euphoria”, “near euphoria”, “a temptation towards euphoria” or “between passion and euphoria”. In other cases, euphoria might be interpreted as a product, characterized by the collocate verbs “to produce”, “to deliver” and “to provide”. Further examples indicating a CONCRETE OBJECT are metaphors based on countable entities such as “a tremendous amount of euphoria” and an “unlimited amount of euphoria”. One might even be able to “share euphoria with somebody”, a figurative expression frequently used in connection with abstract things.

An entirely different matter are co-occurrences that turn the emotion into a piece of decoration, such as “euphoria decorates the whole room” or as an object that can be metaphorically carried in one's hands, “I'm still carrying around the euphoria”. “Take the edge off” is a highly conventionalized expression that means “to make something unpleasant have less of an effect on someone” (*Cambridge Online Dictionary*). On closer examination of the particular linguistic component however, it is clear that one is confronted with a metaphorical idiom, given that in order to literally take the edge off some other entity it has to be a tangible physical object, as is the case with “take the edge off that euphoria”. Yet, it can be stated that this is a rather extraordinary example, since *euphoria* is not something unpleasant that should be taken away from the person experiencing the emotion. The collocation “collapse” was already mentioned when analyzing the LIVING ORGANISM source domain; however, the fact that equally physical entities might collapse is adequate reason to allocate this co-occurrence to two different mappings. The last example to be pointed out is “euphoria surrounded” or “surrounding euphoria” which is also listed amongst the LIQUID SUBSTANCE collocates, although both instances are good evidence to suggest that the emotion under analysis is conceived via the terminology of concrete matters. Hence, the decision to list this co-occurrence as well into the PHYSICAL OBJECT category.

D. EUPHORIA IS AN EVENT

It was argued that EVENT-STRUCTURE metaphors are of great relevance to the conceptualization of emotions. The following examples clearly support this assertion. Indeed, it not entirely clear which kind of collocate constitutes the terminology of an EVENT or a SITUATION, although the subsequent ones seem to point towards a temporal EVENT or even a public exhibition. Amongst them co-occurrences such as “a scene of euphoria” could be encountered in the query. Other instances refer to the temporal frame of the event, inter alia “euphoria began”, “the end of euphoria was near”, “euphoria followed” (temporally), “euphoria lasted”, “euphoria passed”, “a (brief) period of euphoria” or “euphoria was interrupted”. Furthermore, two adjectives describing the length or time (of the day)

could be extracted, namely “early euphoria” and “temporary euphoria”. However, viewing these collocations as components of the EVENT-STRUCTURE metaphor unequivocally depends on the researcher.

E. EUPHORIA IS A CONTAINER

As in the previous analysis of *worry & anxiety*, the CONTAINER mapping could once again be identified within the collocate search of *euphoria*. It is noticeable that a number of examples contain prepositional structures in connection with the preposition “in”, always referring to the inside of an entity. Amongst these, occurrences like “caught up in the euphoria”, “lost in the euphoria”, “in sudden success of euphoria”, “in a state of euphoria” and to “revel in euphoria” were encountered. All the latter instances clearly demonstrate the metaphorical understanding of the emotion as a CONTAINER inside of which the person undergoing the emotion is “located”. “Caught up in the euphoria” is, apart from this, a rather extraordinary example, given that here the CONTAINER is conceived as an almost prison-like vessel. The euphoric person seems to be “caught up” in the latter and unable to get outside as long as being in the state of *euphoria*. Other results referring to this metaphor subtype are “euphoria included”, “leading into euphoria” as well as “amid the euphoria”.

F. EUPHORIA IS (PART OF) A WHOLE

The corpus query provided five instances that display euphoria as a PART OF A WHOLE or A WHOLE. The examples encountered are “a part of euphoria”, “little euphoria” (in the sense of few), “complete euphoria”, “total euphoria” and finally “unlimited euphoria”. The first four instances seem to be self-explanatory, while the latter is again not an entirely clear-cut case. This is because “unlimited” might be interpreted as a whole or beyond, which is the reason why this collocate was assigned to this category.

G. EUPHORIA IS A PRESSURIZED CONTAINER

The PRESSURIZED CONTAINER metaphor is certainly not a highly conventionalized one, nonetheless it may be stated that its origin is rather obvious and unambiguous. *Euphoria* is conceived as a CONTAINER that is filled with pressure, as long as the person is undergoing the emotion. In a way, this metaphor draws upon the physical reaction and the somatic feeling of the human's body and is, thus, partially comparable to conceptual metonymies. The examples that were assigned to this

category are “euphoria popped like a bubble”, “after a burst of euphoria”, “euphoria burst (verb)” as well as “shatter of euphoria”.

H. EUPHORIA IS WAR

The widely discussed WAR metaphor was once again encountered when analyzing *euphoria*. Equal to the previous examples, it did not render high productiveness, yet the instances extracted are relatively illustrative; “the victory of euphoria”, “in war with euphoria” and “guard against euphoria”, all of which make use of WAR terminology.

I. EUPHORIA IS UP

The above mapping presents a novelty with respect to the emotions under analysis that it was not encountered when investigating *worry* or *anxiety*. The explanation for that is straightforward, since a rising feeling or “feeling up” is prototypically connected to positive emotional states, as has already been mentioned in discussion of the HAPPY IS UP metaphor in the literature review (cf.

Lakoff&Johnson 1980: 5; Stefanowitsch 2006: 386; Kövecses 2010: 97). *Worry* & *anxiety* are negatively connoted emotional terms, which might be the reason for the absence of this conceptual metaphor among them. The investigation of *euphoria* yielded three examples that could be grouped into this metaphor. They are “euphoria is rising up inside me”, “feeling high with euphoria” and “euphoria elated all visitors”. In the first example, *euphoria* is portrayed as something soaring inside the human body. The following two phrases depict the persons' feeling of elation.

J. EUPHORIA IS A DESTINATION/ JOURNEY

The DESTINATION/JOURNEY mapping was discussed in the literature review when several examples for conceptual metaphors in general were examined. Typically it is connected to target domains like LOVE or LIFE, where the lovers are the travelers and the whole love-relationship is the journey. Alternatively, LIFE may be conceived as a journey without a clear destination. With respect to the present investigation, one instance referring to this source domain was encountered in the excerpt “the way to euphoria”, where *euphoria* may be interpreted as the DESTINATION of the JOURNEY.

K. Evidence for CONCEPTUAL METONYMY

Also, this time the corpus query revealed several instances based on bodily grounding and physical as well as psychosomatic reactions of the person experiencing the emotion. According to the results in the COCA, a euphoric person may sense a feeling of drunkenness and a connected giddiness or weightlessness, such as in “feeling giddy with euphoria”, “a drunken feeling of euphoria/drunken state of euphoria” or “to feel weightless with euphoria”. A further example refers to a facial expression, more precisely the eyes, as in “my eyes began to gloat in near euphoria”. “Constant euphoria shattered my nerves”, may be interpreted as a way of saying that too much euphoria might result in restlessness and inner disquiet.

Having analyzed all conceptual metaphor source domains encountered for *euphoria*, the following subsection is devoted to displaying the ten most frequent collocates in connection with the emotion. *Table 8* portrays the ten co-occurrences with the highest absolute frequencies in the COCA.

Frequency of occurrence

A quick glance at the most frequent co-occurrences of euphoria (cf. Table 8) reveals one relevant insight, namely once again the extraordinary status obtained by prepositions and prepositional structures. Seven out of the ten collocates with the highest raw frequencies are prepositional phrases, while the remaining three are two adjectival and one nominal. This reality continues the hypothesis constructed in the previous analyses, that verbal collocates are less frequent regarding raw frequencies and do not enter the list of the most frequent co-occurrences. What is yet remarkable is the fact that also, the collocation with the highest subtype frequency does not come close to reaching the raw numbers extracted regarding *worry* and *anxiety*. However, this should not lead to the fallacy that *euphoria* has fewer collocates or is an emotion of little importance; the results simply demonstrate that the co-occurrences referring to a metaphorical conceptualization are less frequent regarding absolute subtype frequencies.

Table 8. The ten most frequent co-occurrences of *euphoria*

Collocation	Absolute subtype frequency
of → a sigh of euphoria	341
in → in sudden euphoria of success	105
over → euphoria washing/rushing over her	41
state → in a state of euphoria	20
on → [...] might float on euphoria	16
after → after the euphoria was behind you	15
early	15
war	13
high	11
caught → caught up in euphoria	10

Furthermore, all of the instances listed in *Table 8* have been analyzed in great detail in the previous sections and therefore, do not need any further clarification. However, it is once again of importance to mention that *euphoria* shows great likelihood to be conceptualized metaphorically in connection with a preposition or prepositional structure, like “in sudden euphoria of success” and “caught up in euphoria” which are both linked to the widely scrutinized CONTAINER metaphor.

The above analysis concluded the investigation of metaphorical and metonymical behavior of *euphoria*. Subsequently, the upcoming section concerns the examination of the near-synonym *excitement*, followed by a concise comparison of both emotional terms.

6.2.2 *Excitement*

Excitement proved to be the emotion with which the second most metaphorical collocates could be identified in the corpus -168 instances. In relation to productiveness, 11 different source domains for conceptual metaphors can be uncovered in the COCA as well as a respectively large number of co-occurrences providing evidence for conceptual metonymy. The latter fact is especially worth noting, given that the other emotional nouns solely provided between two and 12 examples respectively, referring to conceptual metonymy. All source domains identified for *excitement* can be encountered in *Table 9* below, ranked by frequency of occurrence.

Table 9. Metaphorical source domains (SD) of the emotional concept *excitement*, ranked by frequency of occurrence

Conceptual Metaphors	Raw frequency / percentage ratio
EXCITEMENT IS A LIQUID/ GASEOUS SUBSTANCE (IN A CONTAINER)	40 / 23.80%
EXCITEMENT IS A CONCRETE/ PHYSICAL OBJECT	33 / 19.64%
EXCITEMENT IS A LIVING ORGANISM/ ANIMATE BEING	20 / 11.90%
EXCITEMENT IS AN EVENT/SITUATION	10 / 5.95%
EXCITEMENT IS A CONTAINER	10 / 5.95%
EXCITEMENT IS HEAT/LIGHT	10 / 5.95%
EXCITEMENT IS ELECTRICITY	6 / 3.57%
EXCITEMENT IS ILLNESS/INSANITY	6 / 3.57%
EXCITEMENT IS PART OF A WHOLE	5 / 2.98%
EXCITEMENT IS PRESSURE (IN A CONTAINER)	4 / 2.38%
EXCITEMENT IS A WILD/VICIOUS ANIMAL	4 / 2.38%
CONCEPTUAL METONYMY	20 / 11.90%
Total	Σ 168

Once again, the table shows that the mapping of this metaphor as a LIQUID/GASEOUS SUBSTANCE (IN A CONTAINER) is by far the most frequent one, which points towards the fact that emotions show great likelihood to be conceptualized as a SUBSTANCE inside the human body. This substance reacts depending on how strong the emotion is experienced or if it has a negative or positive impact. Relating to this issue, it is worth noting that on account of the three emotions *worry*, *euphoria* and *excitement*, the metaphorical SUBSTANCE is comprehended both as a LIQUID and as a GAS, leaving *anxiety* as an exception – for in that case, the predominant conceptualization is solely the LIQUID SUBSTANCE.

Furthermore, the second and third most frequent source domains are once again occupied by the CONCRETE/PHYSICAL OBJECT and the LIVING ORGANISM/ANIMATE BEING metaphors, which presents a highly sound insight since this fact demonstrates that humans tend to conceptualize abstract things via the terminology they are familiar with in their everyday life. With respect to this, the latter terminology is derived from concrete physical entities to be encountered in our daily environment as well as personifications and conceptualizations in terms of plants or other living organisms.

Most of the remaining source domains were already encountered during the analysis of the other emotional terms, apart from X IS A WILD/VICIOUS ANIMAL as well as the metaphor subtype X IS HEAT. Concerning the latter, it must be pointed out that in the present case, this mapping stays in close connection to X IS LIGHT, providing the reason why both subtypes were assigned to the same source domain. The VICIOUS ANIMAL metaphor was first labeled by Kövecses (1989), according to Stefanowitsch (2006: 384) it is, however, somewhat questionable, as this type of conceptual mapping might equally be referred to as X IS AN ENEMY. Yet, there were three instances that seem to depict *excitement* as a wild or captive animal, which is why I made the decision to open this separate source domain and assign the above mentioned name to it. The latter phenomenon will be discussed in more detail in section K.

Similarly to the former cases, the following subsections will be dedicated to a neat portrayal of each conceptual metaphor. For a more detailed presentation of nominal, verbal, adjectival and prepositional collocates, I will refer the reader to the *Appendix 4*.

A. EXCITEMENT IS A LIQUID/ GASEOUS SUBSTANCE (IN A CONTAINER)

As aforementioned, the SUBSTANCE metaphors encountered in connection with *excitement* can be grouped into two related subtypes; LIQUID and GASEOUS SUBSTANCES. A number of the collocates discussed in the following paragraphs were already reviewed when analyzing the other emotional terms, although a number of additional examples can be uncovered. Subsequently, the first part of this section will concern the examination of LIQUID SUBSTANCE metaphors, followed by the scrutiny of the GASEOUS SUBSTANCE subtype.

Regarding the first and more prominent subgroup, the typical measurement collocations, such as “level of excitement”, “degree of excitement”, “pitch of excitement”, “the level of excitement went up” or “excitement reached a fatal level” whereby the intensity of *excitement* seems to be equal to the height of its level inside a container. Other instances related to this phenomenon are adjectival collocates that describe the altitude of the level, inter alia “rising”, “increasing”, “mounting”, “low” “heightened”, “filled with excitement” or “full of excitement”. These are very illustrative examples, given that they are heavily grounded in embodiment. As a result, the LIQUID IN A CONTAINER metaphor is easily discernible; the human body seems to be metaphorically filled with *excitement* and as the emotional intensity has reached its peak, one's body is as a consequence “full of excitement”. In relation to this, there were also some instances extracted in which the “voice” or the “mind” serves as a

container-like vessel, namely “his voice filled with excitement” and “clamoring excitement filled her mind”. This example can be considered a double-metaphorical phenomenon, given that also “clamoring excitement” constitutes a metaphorical conceptualization. However, this fact will be considered in more detail when we reach the analysis of the LIVING ORGANISM source domain.

A number of other LIQUID SUBSTANCE metaphors can be grouped into the “water scheme”, amongst these are the widely discussed “wave” collocation, “wave of excitement”, “the source of excitement”, whereby “source” is already a highly conventionalized metaphor, “excitement rushed through his body”, “excitement ran down her spine/ran through her veins”, “I was swept away in the excitement”, “a shiver of excitement ran through me”, “a surge of excitement”, “excitement ripples around the club” (in relation to this example it must be stated that it constitutes an exception, given that here the CONTAINER is a room and *not* the human body), “excitement blazed/rushed/swept through her” or “flurry of excitement”. Some instances depict *excitement* as one kind of substance that can be mixed with another one, as in “a mixture of awe and excitement” and “a mix of excitement and fear”. Furthermore, a number of adjectives referring to the conceptualization of a SUBSTANCE were discovered, amongst these are “bubbling”, “stirred”, “pure”, “fresh” or “natural”. Prepositional phrases encountered here are inter alia “palpable excitement ripples around the club”, a simple LIQUID SUBSTANCE metaphor without a CONTAINER, “a rush of excitement deep within her”, “excitement rose/swell inside her” and “excitement below the surface”. Regarding the last example it is however, not entirely clear-cut if *excitement* is depicted as a liquid itself or if its solely encountered under the surface of a certain liquid. Nonetheless, given that it is an obvious instance of a metaphor and due to the difficulty of assigning it to any other source domain, this example was grouped within the category of LIQUID SUBSTANCE metaphors.

As mentioned above, the GASEOUS SUBSTANCE metaphors were clearly less prominent than the LIQUID SUBSTANCE ones, given that far fewer examples could be withdrawn from the COCA. However, the cases encountered appear to be highly relevant and illustrative, especially “the atmosphere was thick with excitement” and “excitement stirs the air”. With respect to the former, excitement seems to be conceived as a kind of gas with more density than conventional oxygen, while in the latter example, the GASEOUS SUBSTANCE causes physical movement in the air. Another example assigned to this category is “soon the excitement spread outside her kitchen”, in which the CONTAINER seems to have been another entity, namely “the kitchen”.

B. EXCITEMENT IS A CONCRETE/ PHYSICAL OBJECT

After the LIQUID/GASEOUS SUBSTANCE metaphor, the CONCRETE/ PHYSICAL OBJECT mapping occupies second place regarding the number of collocates that refer to this domain. With respect to this comparison, several adjectives that in conventional terms describe physical entities were uncovered; among these are “high/higher”, “enormous”, “huge”, “golden”, “low”, “big”, “tremendous”, “immense”, “faint” or “visible”. This example is of special interest, given that the abstract notion *excitement* cannot literally be *visible*; it can only be reflected by people via expressions and gestural behavior. This example provides good evidence for the assertion of the physical embodiment of emotions, because the abstract emotional term becomes visible in concrete terms through the bodily reactions of the human being’s experience of *excitement*. Apart from that, there occurred a number of prepositional structures related to the physical position of an object, such as “excitement on the Wall Street”, “over excitement”, “between excitement and terror”, “building up excitement”, “excitement beneath his anxiety”, next to prepositional collocates like “over”, “amid”, “behind”, “beyond”, “surrounding” and “toward” *excitement*.

It is worth noting that within this source domain verbal collocations seem to be relatively productive with respect to metaphors, as one might be able to “provide”, “create”, “share”, “show”, “hide”, “see”, “add”, “bring” or “convey *excitement*”. All of these examples require a CONCRETE PHYSICAL ENTITY to fulfill the literal sense of the utterance.

Finally, important phrases relating back to this phenomenon are “a lot of excitement” and “the most excitement in this growing field”. These examples show the emotion to be viewed as a countable entity. In “give way to excitement”, *excitement* could be interpreted as an example for a certain kind of vehicle unit. Likewise with “the sharp edge of excitement”, the phrase is a clearly self-explanatory demonstration given that only CONCRETE OBJECTS are able to have the characteristic of possessing sharp edges.

C. EXCITEMENT IS A LIVING ORGANISM/ ANIMATE BEING

The subsequent examples suggest that the emotion shows great likelihood for being conceptualized as a LIVING ORGANISM/ ANIMATE BEING. 25 partially related cases can be found in the COCA. Among those are relatively straightforward collocates that clearly refer to the above labeled source domain, for they are typical characteristics of entities that are alive. Adjectival collocates are the word categories that first and foremost belong to this type of metaphors, inter alia “growing”, “nervous”,

“giddy”, “old”, “creative”, “strong”, “curious”, “romantic” or “sick” *excitement*. Furthermore, the expression “raw excitement” may be compared to the crudity of an immature plant, again a LIVING ORGANISM. Two of the instances extracted refer directly to the domain of LIFE, such as “excitement died” or “[to] keep the excitement alive”.

Furthermore, there are several co-occurrences portraying the “sound” or “noise” produced by *excitement*, namely “clamoring excitement”, “an audible buzz of excitement”, “he heard the excitement” and finally “they listened to her excitement growing”. The last example demonstrates a very creative usage of metaphor was obtained from the category *Fiction*.

The remaining instances equally present highly vivid examples of the LIVING ORGANISM source domain. Amongst them are “excitement gave him a dazzling smile”, “the excitement was following him” and finally “excitement creeping into my voice”. Regarding those phrases, it may be pointed out that all verbs, “following”, “gave” and “creeping into”, are clearly properties of ANIMATE ENTITIES.

D. EXCITEMENT IS AN EVENT/SITUATION

Also with respect to *excitement*, the EVENT-STRUCTURE source domain proved to be relatively prominent, given that there were 10 collocates that show great likelihood to refer to this mapping. Among them, some are equal to the former analyses in relation to the time-frame of the EVENT, such as *excitement* “began”, “passed” or “started” as well as “early excitement”, “endless”, “after the excitement” and “before the excitement”. Similarly to the results obtained through the investigation of *worry*, *anxiety* and *euphoria*, the STATE of X metaphor appeared. Further it is additionally a CONTAINER metaphor when it comes to the prepositional structure “in a state of excitement”. This example seems to be prototypical for the conceptualization of emotions in general, or at least of a vast majority, leaving aside cases such as “*? in a state of love” or “*? in a state of happiness” (*? here refers to ungrammatical utterances). Other co-occurrences grouped into the present source domain of EVENT-STRUCTURE/ SITUATION are “moment of excitement” and “romantic excitement”. It was relatively problematic to which mapping this example should be ascribed, although the decision was taken in favor of EVENT or SITUATION, given that both can certainly carry the attribute of romanticism.

E. EXCITEMENT IS A CONTAINER

Similar to the former case, the CONTAINER mapping revealed 10 instances of conceptual metaphors, which again signifies that this type of conceptual metaphor appears to be more productive concerning *excitement* than with respect to the other emotions analyzed. As mentioned in the previous cases and in relation to the EVENT-STRUCTURE metaphors, the “state” conceptualization within the phrase “in a state of excitement” had one of the highest frequencies. Relating back to this issue, the preposition “in” revealed a number of instances with metaphorical usage. Among the latter, the following examples were to be encountered: “caught up in the excitement”, already discussed in connection with *euphoria*, where the emotion can be interpreted as a prison-like vessel, “forgotten in the excitement”, “lost in the excitement”, “he fell asleep in his excitement”, “meeting in the excitement” or simply “in the excitement”. Regarding “lost in the excitement”, the emotion seems to be so strong, or the CONTAINER of such an expansion that it is comprehended in such a way that the excited person can even get lost inside it. A similar case to this is represented by the phrase “forgotten in the excitement”. Most of the instances uncovered draw upon prepositional structures like the phrases “reach into that excitement” and “out of excitement”. The last examples to be applied to the CONTAINER metaphor are “deep excitement” as well as “empty excitement”, both of which are relatively straightforward as merely physical vessel-like entities can demonstrate the characteristics of being “empty” or “deep”. On account of the latter example, one might argue that an ocean, a lake or a valley can be deep – however, all of these are concrete entities and it may be stated that even the water of the ocean is held inside some kind of CONTAINER.

F. EXCITEMENT IS HEAT/LIGHT

It is remarkable that the HEAT/LIGHT metaphor was not encountered during the analysis of the near-synonym *euphoria*; it only appeared for an instant when investigating *worry*, but in that case the LIGHT subtypes were grouped among the general source domain of LUMINOSITY and COLOR. Hence, HEAT/LIGHT metaphors present a genuinely new example that is widely discussed in the literature, though not yet mentioned within the study at hand. Concerning the HEAT mapping, several very illustrative examples were revealed, all drawing upon physical embodiment displayed when a person undergoing the emotion of *excitement* feels heat entering their body. In relation to the latter example, there are phrases like “fever of excitement”, “feverish excitement”, “hot with excitement” or “sweat of excitement”, “warm with excitement”, “to ignite passion and excitement” as well as “a blaze

of excitement”.

Having considered the HEAT metaphors, it might be good to demonstrate why the LIGHT conceptualizations were assigned to the very same source domain. The explanation is fairly straightforward and is based on the common knowledge that sunlight radiates heat. This example clearly has a nuclear physical background, since sun rays carry atoms that are later converted into heat by a “quantum transition from 'electronically excited' [hence electronic atoms] to 'vibrationally excited' [atoms]. This means that energy causes the whole atom to move” and then this motion is subsequently felt as heat (cf. Auerbach 1999). This fact constitutes a brief outline for why both subtypes were grouped within the same source domain. LIGHT metaphors are attested by the following examples “he was lit with excitement”, “the night was lit with excitement”, “bright excitement” as well as “excitement echoed across”. This is once again a relatively challenging case, given that it was fairly difficult to assign this expression to an appropriate source domain. Yet, it may be stated that the metaphorical echo of *excitement* is based on the phenomenon of “light echo”, which, analogous to an echo of sound, comes into being after the eruption of a star, such as observed in novae, when “the illumination is delayed by the longer path length from the star to the surrounding dust and then to the Earth, as compared with the light from the outburst itself traveling directly to the Earth” (Bond *et al.* 2003: 405). Provided that the echo of excitement may be interpreted as the echo of light, the above example was grouped within the HEAT/LIGHT metaphors.

G. EXCITEMENT IS ELECTRICITY

The domain of ELECTRICITY is closely related to the previously discussed phenomenon of HEAT and LIGHT, although given that the folk understanding of ELECTRICITY is typically discrepant from the conventional comprehension of HEAT/LIGHT, the decision was made to open up a separate metaphorical mapping. ELECTRICITY metaphors, as a further subtype of the FORCE-DYNAMIC schema, can already be observed with respect to the analysis of *worry*. Nevertheless, the collocations differ quite drastically from one another. The instances encountered are connected to ELECTRICITY in an unambiguous way, as can be deduced from the examples “electricity ran as excitement through my veins”, “charged with excitement”, “electric excitement”, “vibrant excitement”, “a quick shock of excitement” or “a tiny spark of excitement”. These examples may be equally assigned to the LIGHT metaphors, but as aforementioned, both domains cannot be entirely separated from each other.

H. EXCITEMENT IS ILLNESS/INSANITY

ILLNESS and INSANITY metaphors were assorted to the same supra-group because INSANITY might result from ILLNESS and vice versa. Examples for the former are “she went crazy with excitement” as well as “mad with excitement”. Further to this, “morbid excitement” occupies an in-between position since “morbid” may refer to both source domains equally”. “Contagious excitement” and “infectious excitement” draw upon the general knowledge of diseases caused by bacteria, thus, are unequivocal examples of ILLNESS metaphors.

I. EXCITEMENT IS PART OF A WHOLE

As discussed above, PART OF A WHOLE metaphors constitute a rather problematic case, as most examples encountered are slightly ambiguous. Nonetheless, the expressions allocated to this domain are relatively unequivocal, such as “a part of excitement”, “a bit of excitement”, “an element of excitement”, “little excitement” as well as “lack of excitement”. “Lack” refers to the absence of the emotion, which again might give reason to question why this examples was classified as belonging to this group of metaphors. However, it may be argued that if some kind of entity constitutes a PART OF A WHOLE, there might equally appear to be a “lack” of this entity. This justifies the decision for allocating “lack of excitement” to the above source domain.

J. EXCITEMENT IS PRESSURE (IN A CONTAINER)

PRESSURE metaphors were encountered with respect to three of the four emotions analyzed, with *worry* as an exception. It is highly remarkable that the collocates for this section are relatively similar to those uncovered for *euphoria*. In both cases, the COCA query yielded instances such as “a burst of X”, here “a burst of excitement tossing out”, as well as the collocation “to burst” as in “excitement burst forth in hallucinatory harmonies” or “my heart nearly burst with excitement”. Further examples investigated are “suppressed excitement” and “he felt tension due to excitement”, whereby the latter represents the case of a conceptual metonymy, given that the tension felt draws upon the person's physio-somatic reaction provoked in the body.

K. EXCITEMENT IS A WILD/VICIOUS ANIMAL

According to what has been mentioned before, X IS A WILD/VICIOUS ANIMAL is a complicated issue, given that some authors (cf. Stefanowitsch 2006: 384) argue against its relevance, while others

such as Kövecses assert that it is of considerable importance, for it may illustratively describe a number of conceptual metaphors. Generally, both arguments carry a certain validity, although the following examples provide good evidence for the WILD/VICIOUS ANIMAL mapping in the present case. Among the instances encountered, there are “capture the excitement”, where the emotion occupies a passive position equally to a wild animal that is captured by some human, “wild excitement”, “unbridled excitement”, which are rather self-explanatory, as well as “the giddy excitement gripped him only for a moment”. In the latter case, *excitement* is in contrast to “capture the excitement” an active entity that grips the person being in the state of the emotion; this instance was assigned to the WILD ANIMAL category as “to grip” is a forceful and aggressive word. With respect to this, a wild, vicious animal might get hold of a human, whom it considers as prey. As has been argued before, all of these examples can be regarded as a subgroup of the LIVING ORGANISM source domain, yet it appears that these examples are more likely to refer to WILD ANIMALS than to PLANTS or PERSONS, which form part of the former mapping. Of course, this case is rather ambiguous. Nonetheless, it may certainly be stated that the above examples provide good evidence for why this source domain has been labeled separately.

L. Evidence for CONCEPTUAL METONYMY

It has been mentioned in the introduction of this section that an untypically vast number of occurrences providing evidence for conceptual metonymy were encountered. Likewise, previous examples of conceptual metaphors revealed a number of instances showing physical reactions. Equal to the *worry* metonymies, there were again some facial expression metaphors revealed. While a novelty, these examples constitute a “bodily fluid/blood” metaphor. The majority of the evidence encountered is grounded in somatic reactions typically associated with the experience of *excitement*. Cases of facial expression metonymies are as follows: “her eyes wide with excitement”, “his face flushed with excitement”, “their faces pinched with excitement”, “a look of excitement on his face”, “to flush/blush with excitement”, “her face rosy with excitement” or the opposite, “her face white with excitement”. These examples are extracted from the corpus domain of *Fiction*, which explains the rather creative usage of the collocations.

The other occurrences are grounded in neural embodiment and represent the great majority. Among them are the phrases “her heart pounded/lept with excitement”, “shiver of excitement”, “to feel the thrum of excitement”, “a tingle of excitement”, “she got blinded by excitement”, “trembling with

excitement”, “breathless with excitement”, “she feels a throb of excitement” as well as “every cell in her body was popping with excitement”. All of these examples are very illuminating. One case includes blood; “his blood hummed with excitement”. This is a highly figurative instance, given that one cannot literally have experienced their blood humming. This again argues against the assumption that all conceptual metonymies are based on physical experience. Yet, by feeling a buzz of *excitement*, it may feel *as if* the blood in the vessels is humming, giving reason for why this example was attributed to the instances of bodily reaction and as a result, to conceptual metonymy.

The above analysis was concerned with providing a detailed presentation of collocates pointing towards conceptual metaphor and metonymy in connection with the emotion *excitement*. The following subsection will, henceforth, be devoted to the investigation of the frequencies of the respective co-occurrences.

Frequency of occurrence

Table 10 below portrays the 10 most frequent collocations occurring in the COCA in relation to *excitement*. This again reveals several insights, namely that similar to the investigation of the other emotions, prepositional structures seem to enjoy a special status. Five out of the 10 most frequent co-occurrences are, according to the findings, prepositions. Apart from this, by far the most frequent collocate is “of”, as in “an audible buzz of excitement”, followed by another preposition, “in”. These two form the base of a number of CONTAINER metaphors, such as the widely discussed example “in a state of excitement”. Equally, position three and five are occupied by prepositions, namely “to” and “over”. Position four is occupied by the pronoun “it” which evokes a prepositional phrase, as do the majority of other co-occurrences such as “eyes”, “voice” and “feel”. Regarding the latter, it is noticeable that in the present case, a verbal collocation entered the list of the most frequent co-occurrences, a phenomenon that could not be observed with respect to *worry*, *anxiety* and *euphoria*.

Yet, considering this analysis in more detail, it may once again be stated that prepositional constructions have a considerable impact on other word classes such as nouns, verbs, adjectives and henceforth on the overall distribution of the different conceptual metaphors. With respect to this, the most prominent source domains that draw upon prepositional constructions are the aforementioned CONTAINER mappings, but equally the LIQUID/GASEOUS SUBSTANCE, HEAT/LIGHT, EVENT-STRUCTURE or CONCRETE/PHYSICAL OBJECT metaphors.

Table 10. The ten most frequent co-occurrences of *excitement*

Collocation	Absolute subtype frequency
of → an audible buzz of excitement	2553
in → in the excitement/ in a state of excitement	925
to → listen to her excitement growing	308
lot → a lot of excitement	178
over → joy over the excitement	155
eyes → her eyes were wide with excitement	126
on → excitement on the Wall Street	118
voice → excitement ringing in his voice/ voice filled with excitement	114
feel → feel the thrum of excitement	103
air / little	76

The above subsection concludes the examination of the emotion *excitement*. The following chapter is dedicated to delivering a succinct comparison between the near-synonyms *euphoria* & *excitement*, paying attention to similarities and differences previously encountered, as well as the impact these have on the conventional understanding of synonymous words.

6.2.3 *Euphoria* & *Excitement* – a comparison

As can be seen from the above analysis, despite being near-synonyms several discrepancies exist regarding the different conceptual metaphor subtypes. Discrepancies were for instance encountered with respect to the raw and relative frequencies. Nonetheless, it may certainly be argued that the three most prominent source domains are congruent with regard to both emotional terms scrutinized, although in a slightly different order of occurrence. *Table 11* displays the most productive source domains of *euphoria* & *excitement*, as well as the absolute number of instances encountered in the COCA and the respective relative frequencies in %.

Table 11. The 3 most prominent source domains (SD) of *euphoria* & *excitement* and their absolute and relative frequencies (in %)

<i>Euphoria</i>			<i>Excitement</i>		
Conceptual Metaphors	Absolute frequency	Relative frequency	Conceptual Metaphors	Absolute frequency	Relative frequency
EUPHORIA IS A LIQUID/GASEOUS SUBSTANCE (IN A CONTAINER)	36	29.75%	EXCITEMENT IS A LIQUID/ GASEOUS SUBSTANCE (IN A CONTAINER)	40	23.80%
EUPHORIA IS A LIVING ORGANISM/ ANIMATE BEING	25	20.66%	EXCITEMENT IS A CONCRETE/ PHYSICAL OBJECT	33	19.64%
EUPHORIA IS A CONCRETE/ PHYSICAL OBJECT	18	14.88%	EXCITEMENT IS A LIVING ORGANISM/ ANIMATE BEING	20	11.90%

Taking a look at the above table reveals that in both case studies, the mapping of the LIQUID/GASEOUS SUBSTANCE (IN A CONTAINER) occupies the first position because of its considerably high rate of productiveness. Ranking at 29.25% and 23.80% respectively, the total number of metaphors extracted were grouped into this source domain. In light of this fact it is further remarkable that with regard to each of the emotions, there are collocates indicating both LIQUID as well as GASEOUS substances. This fact slightly differs from the analysis of *worry* & *anxiety*, given that only one emotion, *worry*, was conceptualized in both states of aggregation.

Taking a further glance at *Table 11* reveals that the second and third most frequent source domains are the LIVING ORGANISM and PHYSICAL OBJECT mapping for *euphoria* and in reverse order for *excitement*. This fact once again proves that humans tend to conceptualize abstract notions in terms of their environmental surroundings, whereby PHYSICAL OBJECTS and LIVING ORGANISMS seem to be the most prominent and noticeable ones that structure our everyday lives. All three metaphorical mappings listed in the above table are characterized as highly relevant in the literature on CMT as well as on a larger scale and with respect to the embodiment of emotions in particular, as it was argued that they are relatively prototypically associated with the conceptualization of emotions. Furthermore, it may certainly be claimed that the near-synonyms *euphoria* & *excitement* appear to be conceptualized in relatively similar ways, given that a majority of collocates encountered in the query refer to one of the above listed source domains. Therefore, it can be claimed with confidence that the overall conceptualization of both emotions is generally equivalent.

Apart from the conceptual metaphors portrayed in *Table 11*, there exist several more overlapping source domains. These are EVENT-STRUCTURE, CONTAINER, PART OF A WHOLE and PRESSURE metaphors, all of which can be encountered in *Table 12* below. Indeed, the respective (nearly) congruent metaphors are widely composed of distinct collocates (cf. *Appendix 3* and *4*), as has been demonstrated in the previous sub-chapters, yet it is legitimate to assume that all the respective collocates activate the same understandings in the human conceptual system.

Table 12. The seven congruent conceptual mappings found for *euphoria* & *excitement*

Conceptual metaphors – <i>Euphoria</i>	Conceptual metaphors – <i>Excitement</i>
EUPHORIA IS A LIQUID/GASEOUS SUBSTANCE (IN A CONTAINER)	EXCITEMENT IS A LIQUID/ GASEOUS SUBSTANCE (IN A CONTAINER)
EUPHORIA IS A CONCRETE/ PHYSICAL OBJECT	EXCITEMENT IS A CONCRETE/ PHYSICAL OBJECT
EUPHORIA IS A LIVING ORGANISM/ ANIMATE BEING	EXCITEMENT IS A LIVING ORGANISM/ ANIMATE BEING
EUPHORIA IS AN EVENT	EXCITEMENT IS AN EVENT/SITUATION
EUPHORIA IS A CONTAINER	EXCITEMENT IS A CONTAINER
EUPHORIA IS PART OF A WHOLE	EXCITEMENT IS PART OF A WHOLE
EUPHORIA IS A PRESSURIZED CONTAINER	EXCITEMENT IS PRESSURE (IN A CONTAINER)

Given this fact, it is worth mentioning that regarding *excitement*, there were 11 different source domains coined (+ evidence for conceptual metonymy), while in the case of *euphoria* it was almost the same amount, namely 10. This fact clearly does not say much in itself. However, as argued in the above table, seven out of the 10 or respectively 11 conceptual metaphors are congruent. This may lead to the assumption that the conceptualizations of both *euphoria* & *excitement* share many characteristics and are, hence, by and large similar. This fact clearly does not provide sufficient evidence to claim that synonymous words would be completely interchangeable in any context, yet one may assert that both emotions are experienced in a comparable way in the daily environment.

Moving on to the differences encountered, the most remarkable difference lies in the number of metaphorical co-occurrences extracted from the COCA as well as the distinctions among the collocates assigned to the respective source domains. In general it may be stated that the differences are rather fine-grained. Further issues of incongruence, especially concerning the connotation of both emotional terms, will be discussed later in the chapter on semantic preference and semantic prosody.

Having concluded the analysis of *euphoria & excitement*, the following section will be dedicated to a cross-comparison between all four emotional terms. This should reveal several insights into the conceptualization of emotions in general. This analysis will be based on the literature review and will discover if the near-synonyms are significantly similar in terms of their conceptual understanding or if the congruencies encountered are uninformative.

6.3 Overall cross-comparison of *worry & anxiety* and *euphoria & excitement*

During the separate metaphorical profile analysis, it was immediately noticeable that a number of conceptual metaphors appeared over and over again. Likewise, the comparison between the respective near-synonyms revealed that the most prominent mappings were equal in all cases, although in a differing order of occurrence. *Table 13* presents the most frequently occurring source domains in relation to all four nouns. Thereby, I want to draw the reader's attention to the fact that in three out of four cases, the conceptual mapping through which most collocations were identified was X IS A LIQUID/GASEOUS SUBSTANCE (IN A CONTAINER). The emotion *anxiety* represents an exception, given that the most frequently appearing domain is ANXIETY IS A CONCRETE/ PHYSICAL OBJECT.

With respect to synonymy, it is meaningful to claim that the overlap concerning *euphoria* and *excitement* is a genuine insight, yet this fact is certainly not sufficient to assume that this synonymous word-pair shares more similarities than the respective pair of *worry* and *anxiety*. Apart from that, it is indeed of interest to see that *worry* departs from this overlap with *euphoria & excitement* unlike its near-synonym *anxiety*. However, despite this fact it would constitute a fallacy to presume a more significant relationship between those three emotions than among *worry & anxiety* by themselves.

Table 13. The most frequent conceptual metaphors of *worry & anxiety* and *euphoria & excitement*

<i>Worry</i>	<i>Anxiety</i>	<i>Euphoria</i>	<i>Excitement</i>
WORRY IS A LIQUID/GASEOUS SUBSTANCE (IN A CONTAINER)	ANXIETY IS A CONCRETE /PHYSICAL OBJECT	EUPHORIA IS A LIQUID/GASEOUS SUBSTANCE (IN A CONTAINER)	EXCITEMENT IS A LIQUID/ GASEOUS SUBSTANCE (IN A CONTAINER)

Given this, it is certainly more illuminating to observe that there are a vast number of conceptual metaphors that are shared by two or more emotions. In fact, five of the conceptualizations portrayed in *Table 14* overlap among all four nouns. A “+” signifies that the respective conceptual metaphor can be

encountered in relation to this emotion, while a “–” indicates the opposite. The source domains LIQUID/ GASEOUS SUBSTANCE, LIVING ORGANISM, PHYSICAL OBJECT, CONTAINER as well as EVENT/SITUATION were identified with respect to all four emotions. The remaining six instances on the other hand, were encountered in relation to two or three of the nouns under analysis.

Keeping this in mind, one is now in the position to address the question of whether the listed data is significant for determining the conceptualization of emotions. In chapter 2.2.1 it has been argued that there exist a number of source domains typically associated with the target domain of emotions in general. In order to recapitulate this argument, the respective conceptual metaphors are, according to Kövecses (2010: 108) the following:

EMOTION IS A FLUID IN A CONTAINER
EMOTION IS HEAT/FIRE
EMOTION IS A NATURAL FORCE
EMOTION IS A PHYSICAL FORCE
EMOTION IS A SOCIAL SUPERIOR
EMOTION IS AN OPPONENT
EMOTION IS A CAPTIVE ANIMAL
EMOTION IS A BURDEN
EMOTION IS A LIVING ORGANISM

Analyzing the above metaphors and taking a glance at *Table 14* reveals that in fact a number of the metaphors identified in the present study were already listed in the previous literature. However, they were partially labeled with slightly distinct names. Kövecses predominantly talks about a FLUID IN A CONTAINER, as has been discussed in the former sections; he points out that only taking fluids into consideration would exclude a number of metaphorical instances. With respect to the three emotions *worry*, *euphoria* and *excitement*, there were also a number of collocates extracted referring to GASEOUS SUBSTANCES. HEAT metaphors were likewise encountered, mainly though a connection with the broader domain of LIGHT. With respect to the NATURAL and PHYSICAL FORCE mappings, it must be explained that both are rather general and some of the conceptual metaphors below could certainly be allocated to one of those domains. To give an example, ELECTRICITY might be assigned to the domain of PHYSICAL FORCE, as could WAR. As has been argued beforehand, some of the domains may have fuzzy boundaries and it is not entirely clear what constitutes a NATURAL FORCE. On the one hand, a number of *water* and *wave metaphors* might be considered a NATURAL FORCE, on the other hand it could also be the LIVING ORGANISMS, interpreted in a way that they might exercise power over the emotional being who cannot deprive him or herself from experiencing the emotion. Furthermore, the LIVING ORGANISM domain might likewise be regarded

as a supra-domain of the CAPTIVE ANIMAL mapping, which is considerably narrow and according to Stefanowitsch (2006: 384) is also relatively questionable. However, the analysis of *excitement* demonstrated that some instances connected to a subtype of this domain labeled WILD/VICIOUS ANIMAL, could indeed be identified. Concerning SOCIAL SUPERIOR and OPPONENT (IN A STRUGGLE), it must be mentioned that neither of the respective conceptual mappings were discovered within the present analysis. Hence, it may indeed be stated that those types of metaphors may be typical for a number or even the majority of emotions, but certainly not for all of them. The one remaining mapping EMOTION IS A BURDEN didn't appear with this exact definition and as it seems to be a relatively broad domain, subtypes such as ILLNESS/INSANITY or even PRESSURE IN A CONTAINER might be allocated to it. In a metaphorical way, both of them could be comprehended as a certain kind of BURDEN, be it physical or psychological. Apart from metaphors that have been assigned to particular source domains listed by Kövecses, there also has appeared a number of mappings that were mentioned in the literature. However, they are not respective to the domain of emotions in general. Among the latter are X IS A CONCRETE/ PHYSICAL OBJECT, X IS A CONTAINER, X IS AN EVENT/SITUATION or X IS PART OF A WHOLE. Of these, the first three are profoundly anchored metaphors in CMT yet generally related to a vast number conceptual metaphors and not to the target domain of emotions. Another interesting discovery is the fact that the last of the above mentioned mappings was claimed to be typically associated with the target concept of FEAR (cf. Kövecses 2003: 23). In this case however, the author decided to denominate the respective domain slightly differently, stating that FEAR IS AN INCOMPLETE OBJECT. This basically refers to a similar way of conceptualization. Furthermore, it should be addressed that the ILLNESS as well as the INSANITY source domain, which are not provided above, were indeed listed with respect to a number of emotions, either separately or grouped into one. Among the emotion concepts that turned out to be conceived in terms of the latter domains, Kövecses (2000: 23 – 25) listed FEAR, HAPPINESS and SADNESS.

Table 14. Conceptual metaphors shared by two or more emotions

Conceptual Metaphors	Emotions			
	<i>Worry</i>	<i>Anxiety</i>	<i>Euphoria</i>	<i>Excitement</i>
X IS A LIQUID/GASEOUS SUBSTANCE (IN A CONTAINER)	+	+	+	+
X IS A LIVING ORGANISM/ANIMATE BEING	+	+	+	+
X IS A CONCRETE/ PHYSICAL OBJECT	+	+	+	+
X IS A CONTAINER	+	+	+	+
X IS AN EVENT/ SITUATION	+	+	+	+
X IS WAR	+	+	+	—
X IS LIGHT (+HEAT/ COLOR)	+	—	—	+
X IS PART OF A WHOLE	+	—	+	+
X IS ILLNESS/INSANITY	+	—	—	+
X IS ELECTRICITY	+	—	—	+
X IS PRESSURE IN A CONTAINER/ A PRESSURIZED CONTAINER	—	+	+	+

As the above discussion reveals, the ability to label and interpret the respective concepts certainly depends on the researcher. Some of the source domains may represent sub- or supra-domains of different ones, while others may refer to the same phenomena but be denominated in a slightly distinct way. Omori (2008: 134), for instance, separated NATURAL FORCE schemata into metaphors relating to FIRE, WATER etc. In the present study, this method would have resulted in several collocates being classified into respective mappings, such as “ignite the excitement” or “a wave of euphoria”.

Nonetheless, I decided to allocate those instances to more general domains. Given these fuzzy boundaries and this lack of consistency even among researchers, it is difficult to identify differences or congruencies between the emotions analyzed here and those discussed in the literature. Nonetheless, it is legitimate to argue that the results obtained from the corpus investigation are clearly meaningful with respect to what has been claimed in the theory review, as no surprising or highly untypical results were

extracted.

The present chapter served as an overview and a general discussion of the results received by means of the corpus investigation. In order to conclude the examination of the respective metaphorical profiles, we are now in the position to address the issue of whether or not there are emotion-specific metaphors. In other words, these are metaphors that are more typically associated with one particular emotion than with others. The next chapter will be devoted to finding a serious answer to this question based on a statistical significance test. The tests used will be the Chi-square test, including the p-value and Cramer's V.

6.4 Are there any metaphors typically associated with *worry & anxiety* and *euphoria & excitement*?

The present chapter is devoted to addressing whether the above analysis contained any emotion-specific metaphors or in other words, metaphors significantly associated with particular emotions. With respect to this goal, it is essential to point out that this is first and foremost “a question about language use, i.e., about what is frequent or typical, rather than about the linguistic system; i.e. what is 'possible'” (Stefanowitsch 2006: 396). In order to answer the above question in a meaningful way, we must investigate whether there are metaphors that are more strongly associated with a certain emotion than would be expected in general terms. In the following paragraph it will be briefly explained how such expected frequencies are calculated from the basis of the overall frequency of a given metaphor across emotion concepts. Thus, it is fundamental to select a representative set of conceptual metaphors that are widely shared by all emotions under analysis. Considering the present case, there are four conceptual metaphors encountered in connection with each of the emotion terms *worry*, *anxiety*, *euphoria*, and *excitement*. These four are X IS A LIQUID/GASEOUS SUBSTANCE, X IS A LIVING ORGANISM, X IS A CONCRETE/PHYSICAL OBJECT and X IS A CONTAINER. Certainly, the subsequent investigation has to be regarded as largely heuristic which again must be born in mind considering the interpretation of results.

In order to identify metaphors significantly more attracted to or repelled by a particular emotional domain, I applied a number of statistical frequency tests, such as *Pearson's Qui Square Test* and the *Fisher Exact Test (Exact Qui Square Test)*. To conduct these tests, first and foremost were the respective frequencies entered into a four-dimensional r-by-c table (cf. *Appendix 5*), which according to

Gries (2014: 2) has a great number of advantages for linguistics in general and cognitive linguistics in particular. Gries (2014: 2) further argues that “the general idea in the analysis of two or more dimensional frequency tables is to determine whether the frequencies observed in cells of the table are distributed in a way that is significantly different from a random distribution and, if that is the case, what is (most) responsible for the significant difference and what is not”. Clearly, the simplest case are two-by-two tables. However, the same methodology applied using this method functions equally with respect to larger tables. Due to a lack of space in this paper, the exact calculation procedure as well as the commands that were entered into the statistics program *R*, an open-source software, will not be described. For a more detailed analysis I will refer the reader to the *Appendix 5* as well as to Stephan Th. Gries' paper *Frequency tables: tests, effect sizes, and explorations* (2014). In short, the cross-tabulation revealed that the four emotional terms under analysis do not differ significantly from each other with respect to their association to particular metaphors. The actual absolute frequencies of the conceptual metaphors co-occurring in conjunction with the respective emotions are listed in detail in the *Appendix 5*. Likewise, *Table 15* below displays the frequencies that would have been expected to occur by chance, meaning that when there is no correlation by the kind of emotion and the metaphor co-occurring with it (cf. Gries 2014: 4). As can be extracted from a comparison between both results, the actual frequencies differ relatively little from the expected frequencies, while the highest occurring span of discrepancy is thereby 12.682 (concerning *anxiety* and X IS A CONCRETE/PHYSICAL OBJECT), followed by 9.007 in connection with *euphoria* and X IS A CONCRETE/PHYSICAL OBJECT. The degree of freedom (df; calculated by $(r-1)*(c-1)$) derived from the Chi-squared statistic $X^2= 16.707$ is in the present case $df=9$, which again signifies that the deviation from the expected probability level may be relatively high. As a matter of fact, it is most important to inspect the p-value, which should be <0.05 to be statistically significant or even <0.001 to be highly significant, in cases such as pharmaceutical testings which arguably have to be extremely exact. Concerning the investigation at hand, establishing a critical value of 0.05 is definitely sound enough. Given this rule, it can be observed from the table below that the p-value is slightly higher than the threshold level of 0.05, namely $p\text{-value}= 0.05351$. Paying close attention to statistical correctness, it clearly must be stated that the test failed to provide evidence for a significant dependency between actual and expected results; the null-hypothesis that the expected and actual distribution are the same is, hence, rejected. However, it is important to point out that a failure to prove dependence does not signify that the results are independent. Furthermore, it may be argued that the p-value is only slightly higher than what would

constitute a meaningful result, thus, it is still legitimate to claim that the occurrences are not completely random and do clearly not appear with mere coincidence.

Table 15. Expected frequencies, *Pearson's Qui Square test* and *p-value*

Metaphors		
Emotions	X IS A LIQUID/GASEOUS SUBSTANCE	X IS A LIVING ORGANISM
<i>worry</i>	44.18575	26.33588
<i>anxiety</i>	33.81170	20.15267
<i>euphoria</i>	33.42748	19.92366
<i>excitement</i>	39.57506	23.58779
Metaphors		
Emotions	X IS A CONCRETE/PHYSICAL OBJECT	X IS A CONTAINER
<i>worry</i>	35.69975	8.778626
<i>anxiety</i>	27.31807	6.717557
<i>euphoria</i>	27.00763	6.641221
<i>excitement</i>	31.97455	7.862595
Pearson's Chi-squared test		
data: x		
X-squared = 16.7071, df = 9, p-value = 0.05351		

However, the discussion of the above results still does not reveal which cells are most responsible for this effect. In order to identify the respective cells, the *Pearson residuals* were calculated by dividing the (observed – expected frequencies) by the square root of the expected ($Pr = (\text{observed} - \text{expected}) / \sqrt{\text{expected}}$). *Table 16* below demonstrates the outcome of this computation, or in other words shows the specific or unspecific associations between the emotions and particular metaphors.

Table 16. Person residuals correlating between emotions and conceptual metaphors

Metaphors		
Emotions	X IS A LIQUID/GASEOUS SUBSTANCE	X IS A LIVING ORGANISM
<i>worry</i>	0.2729329	0.9088580
<i>anxiety</i>	-0.8274951	-1.3705580
<i>euphoria</i>	0.4449455	1.1372757
<i>excitement</i>	0.0675481	-0.7387253
Metaphors		
Emotions	X IS A CONCRETE/PHYSICAL OBJECT	X IS A CONTAINER
<i>worry</i>	-0.7865780	-0.6003042
<i>anxiety</i>	2.4263894	-0.6626825
<i>euphoria</i>	-1.7332749	0.5272599
<i>excitement</i>	0.1813469	0.7622611
Effect size/ Cramer's V = X-squared 0.1190402		

With respect to the above results, it is essential to explain the meaning of each number so that when the *Pearson residual* in a cell is positive, then “the observed frequency in that cell is greater than the expected frequency in that cell” (Gries 2014: 5). When it is negative, the case appears to be vice versa. Secondly, the more the Pearson residual deviates from 0, the greater the effect. Hence, in the present investigation, the strongest effect is seen with the association between the emotion *anxiety* and CONCRETE/PHYSICAL OBJECT source domain, followed closely by the relationship between *euphoria* and LIVING ORGANISM and then the disassociation between *euphoria* and the CONCRETE/ PHYSICAL OBJECT source domain. In fact, the data might be interpreted in a way that, apart from the aforementioned relatively sound correlation between *anxiety* and CONCRETE/PHYSICAL OBJECT metaphors, none of the analyzed conceptual metaphors seems to be associated in a highly significant way with one or more specific emotions. In other words, there are no typically emotion-specific metaphors. Yet, as a further step, the following paragraph will briefly discuss the results obtained from the computation.

Taking a glance at *worry*, the emotion reveals a preference for LIQUID/GASEOUS SUBSTANCE as well as LIVING ORGANISM metaphors and disassociates from the other two types. However, in that case it must be mentioned that LIQUID/GASEOUS SUBSTANCE metaphors do not seem to be associated with *worry* in a more significant way than with the other emotions. LIVING ORGANISM metaphors appear to be more closely related with *euphoria* than with *worry*, hence it may be stated with confidence that there is no conceptual metaphor prototypically connected with *worry*.

Secondly, the emotional concept of *anxiety* will be taken into consideration. To begin with, *anxiety* appears to be more unequivocal and the only clearly sound case. As can be extracted from *Table 16*, three of the metaphor subtypes are unspecific. Only the CONCRETE/PHYSICAL OBJECT mapping is highly favored when compared to the other emotions. Furthermore, this conceptual metaphor displays a negative value in relation to *worry* and *euphoria*, and is therefore not chosen. It shows too low of a value concerning *excitement* to be interpreted as sound. Hence, it may be legitimate to claim that the CONCRETE/ PHYSICAL OBJECT metaphor is more typically associated with *anxiety* than with any other of the emotional terms. On the other hand, it is interesting to consider that X IS A LIVING ORGANISM appears to be unambiguously less correlated with *anxiety*; thereafter it may be argued with confidence that this mapping is less typical for this emotion than would have been expected by mere chance.

The analysis of *euphoria* revealed that in connection with this emotion, the CONCRETE/ PHYSICAL OBJECT conceptualization is clearly not preferred over other metaphor types. Moreover, it can be observed from the data that the LIVING ORGANISM metaphor shows the highest positive value, which leads to the assumption that this conceptual mapping is more typically associated with *euphoria* than with *worry*, *anxiety* or *excitement*. Yet, the data is not significant enough to claim that the LIVING ORGANISM mapping is prototypical for *euphoria*, or in other words *euphoria*-specific, given that the positive value obtained for *worry* is merely slightly lower. X IS A LIVING ORGANISM is therefore similarly associated with both, *euphoria* and *worry* and hence not clearly emotion-specific.

Finally, taking *excitement* into account reveals that only X IS A LIVING ORGANISM displays a negative value and is therefore less preferred than the other conceptual metaphors. However, taking a closer look at the results also shows that none of the other mappings are more associated with *excitement* than with the other emotions. Due to this fact, it can be stated that the analysis did not reveal any emotion-specific metaphors in connection with *excitement*. However sobering this may seem, linguistic studies do not necessarily have to be based on statistical patterns. Furthermore, as aforementioned, the conduction of the present study was rather heuristic for identifying that the respective conceptual metaphors always lie in the eye of the researcher. However, this may have a (negative) impact on the frequencies obtained and turn the data into being insignificant. Also, the results presented above concern what is linguistically frequent rather than what is possible. In that sense, it may be stated that all statistical significance or insignificance does not exclude linguistic possibilities and hence, does not directly influence what may appear in the linguistic system.

The last step that was to be done to conclude the present statistical investigation was to compute the *effect size*, also called *Cramer's V* in connection with r-by-c tables with $r > 2$ and $c > 2$ (in the case of 2-by-2 tables the standard effect size would be called Φ). “An effect size quantifies the strength of the observed correlation independently of the sample size [..., and] theoretically ranges from 0 ('no effect') to 1 ('perfect correlation')” (Gries 2014: 5). Concerning the given case where $V = 0.1190402$, it can definitely be assumed that the correlation is not very strong.

To sum up, it may once again be stated that the data is not statistically significant, although interpreting the results is nonetheless meaningful and has revealed several interesting insights. First and foremost, the p-value of 0.053 failed to demonstrate dependence between the observed and expected data. However, as it is only at slightly above 0.05 where the results are not distributed in a completely random way. Furthermore, some emotions *inter alia anxiety* showed a relatively clear preference for one conceptual metaphor over the others. Above, the analysis revealed that several conceptual source domains are not the preferred method for communicating some emotions. In other words, they displayed a lower frequency than what would have been statistically expected. Even though it cannot be claimed that there are metaphors associated with one or another emotional term, this outcome is nonetheless highly valuable because it demonstrates that all four emotions are not significantly divergent. This leads to the assumption that their conceptualization, and on a larger scale of emotion terms in general, is rather similar.

Given this, the next chapter will be dedicated to a brief investigation of *semantic preference* and *semantic prosody*, which should shed further light on how the respective emotion terms are semantically comprehended in the human conceptual system. All four emotions will be discussed in turn in the subsequent sections.

7. Semantic Analysis of Metaphorical Collocates – Semantic Preference and Semantic Prosody of worry & anxiety and euphoria & excitement

As has been pointed out beforehand, the paper at hand does not solely analyze the metaphorical collocates of the respective emotions, but it also offers a brief investigation of their semantic/pragmatic behavior. With respect to this, the proposed concepts are thereby *semantic preference* and *semantic prosody*. Both of the latter reveal relevant insights into how the emotions are predominantly described and evaluated. To recapitulate what has been discussed in Chapter three, semantic preference refers to the “semantic subsets a word's collocates [preeminently] belong to” (Oster 2010: 732). In other words,

it is related to the habitual collocation of lexical items with linguistic expressions that belong to certain semantic fields (Bednarek 2008: 120). Concerning the present investigation, the concept of semantic preference will be applied in order to determine how the particular emotions are semantically described and in what way they combine with certain groups of lexical units (cf. Oster 2010: 733).

On the other hand, the phenomenon of semantic prosody, which can be considered a subcategory of semantic preference, refers to instances where a lexical item “shows a preference to co-occur with items that can be described as bad, unfavorable or unpleasant, or [vice versa] as good, favorable or pleasant” (Partington 2004: 149). With regard to the present analysis, this matter will be denominated as a POSITIVE or NEGATIVE connotation, for positive and negative emotions respectively. It has been argued that semantic prosody describes a rather complex and more abstract phenomenon, which again might provide some restrictions for the present corpus investigation. Arguably, some of the more problematic and restricting issues cannot be fully taken into consideration, although the aspect of semantic prosody is certainly of great importance for future research in this field in order to study the complex nature of emotions in more detail.

In the following chapter, all four emotional terms will be analyzed separately with respect to both concepts, *semantic preference* and *semantic prosody*. Due to lack of space in this paper, this discussion will be kept rather succinct. For a more detailed representation I refer the reader to *Appendix 6*. Further, in order to make the investigation more feasible, only the first 100 most frequent nominal, verbal, adjectival and adverbial co-occurrences will be taken into consideration and henceforth analyzed.

7.1 Worry & anxiety – a discussion of their description and evaluation

In terms of the emotions *worry & anxiety*, when one is dealing with a pair of near-synonyms, it might be expected that the semantic subsets both emotions tend to co-occur with may be similar. Taking a closer look at the results in *Appendix 6*, it is indeed the case that a considerable number of those subsets are congruent.

Considering the syntagmatic relationship between the emotion and its surrounding text (n-gram with n=4) (cf. Oster 2010: 753), *worry* seems to demonstrate a great preference for semantic fields such as *amount, size, quality or duration of the emotion, economy and politics* as well as *medicine, psychosomatic and psychology*. Further domains are *causes and effects of the emotion*, the area of the *face and facial expressions*, information on who is the *experiencer of the emotion* as well as *his/her transformation through the emotion* and *natural environment or phenomena*. The remaining semantic

fields listed in the Appendix reveal a comparably small number of collocates and thus will not be taken into further consideration. At this point, it is essential to mention that the corpus investigation uncovered a number of semantic subcategories that appeared in connection with all four emotions. In all cases, I encountered information on the causes or effects of the emotion – on who experiences it, as well as on the amount, size or quality of the object (here the emotion). Another semantic category that proved to be favored by all nouns with respect to collocation was *Economy and Politics*. Three out of the four emotions investigated (*worry*, *anxiety* and *euphoria*) demonstrated a preference to co-occur with terms that are semantically related to the fields of *Medicine*, in combination with *Psychosomatic/Psychology*, and *Sensations* (feelings, senses etc.). This fact reveals several important insights regarding the conversation topics where one particular emotion is predominantly applied. Hence, it is apparent that each of the emotions needs somebody – a (human) experiencer who is undergoing the emotion. Somebody who registers cause as well as effect and senses emotion or could describe it in concrete terms (as already discussed with respect to conceptual metaphors). Equally, it was of great interest to discover that the emotional analysis assigned by humans seems to be closely connected to economic and political issues. Depending on the attitude the emotional being has developed concerning this issue, their level of sensitivity fluctuates; in other words, the strength of the emotions seems to be triggered by the attitude towards those economic and political matters. *Excitement* was the only emotion that did not co-occur with clinical terminology and might be less common in the medical discourse than, for example the near-synonym *euphoria*.

Coming back to the first emotion, *worry*, a more detailed list of all semantic fields including the respective collocates can be encountered in *Appendix 6*. Yet, another issue to be considered regarding the semantic and pragmatic analysis of emotions are their evaluative aspects, namely POSITIVE or NEGATIVE semantic prosody. *Table 17* below presents this issue in connection with the co-occurrences that evoke either a positive or negative evaluation. The words with a question mark indicate cases that are not entirely clear-cut. However, in connection with *worry* they might carry a negative meaning and this is why they were assigned to the group of NEG prosody. The numbers in square brackets refer to the overall frequency in the COCA.

Table 17. POS and NEG evaluation of the emotion *worry*

<i>Evaluative aspects – POS/NEG semantic prosody</i>	
<i>POS +</i>	Getting [19], freedom [20], happy [24], free [23], good [23], health [27], mind [20], heart [16], cure [9], social [17], give [8], bring/brought [7]
<i>NEG –</i>	Cause [41], cause (verb) [15], problem [14], anger [12], anxiety [54], shyness [13], stress [23], pain [16], tension [13], disease [11] sick [30], frantic [11], negative [11], toxic [10] nagging [9], pathological [6], cancer-specific [5], chronic [5], never [17], serious [16], war [11], military [5], should [25], might [44], would [91], could [62], afraid [4], work?? [20], money??[19], take/taking [8]

As can be discerned from the above table, a considerably larger number of collocates carrying a negative evaluative meaning were withdrawn from the COCA. Hence, it may be claimed that the emotion *worry* demonstrates an overall NEGATIVE semantic prosody. This outcome may seem obvious and little surprising but nonetheless, assumptions drawn upon supposed general knowledge or over-hasty decisions might lead to fallacies. This is why it is more convenient to consult corpus data in order to reach meaningful conclusions. Yet, by examining the results one always has to keep in mind that corpus data has to be handled with care and that, “however big a corpus, it will only represent the reality of the texts it contains” (Oster 2010: 753). Concerning the present case, the sections of the COCA applied in this analysis predominantly reflect present day American spoken and written language. Strikingly, it seems to highlight several peculiarities of the 20th century American culture, such as World War II and post-war terminology as well as references to the *worry* about political and economic issues, the future, freedom, armed forces and aspects about health care. Another matter worth discussing is the word “cause” (noun and verb), which shows a clear tendency to co-occur with negative nouns (Stubbs 1995: 16). Regarding the case of *worry* and by consequence also *anxiety*, the fact that “cause” can be encountered among the collocates is little surprising, given that both of them appear to be negative emotion nouns. However, the corpus investigation revealed that the often positive emotions like *euphoria* & *excitement* co-occur with the verb “to cause”. Arguably, the absence of this collocation was expected, which is why this outcome is rather surprising. Yet, in the following section this subject matter will be analyzed in more detail and reveal that the overall frequency of “cause” in combination with both *euphoria* and *excitement* is considerably lower, as well as the fact that both emotions do not necessarily always refer to a positive experience.

As a second step, the near-synonym *anxiety* will be taken into consideration. This examination demonstrates a clear preference for semantic fields like *causes/effects of the emotion, medicine/*

psychosomatic/ psychology, amount/size/quality or duration of the emotion as well as partially *economy and politics*. Thereby, it is worth noting that collocates referring to medical discourse and clinical terminology are one of the preferential and, hence, probably most important areas, especially given that all the assorted co-occurrences unambiguously belong to this group. With reference to this, it must be mentioned that several of the other collocates might, in theory, belong to more than one semantic field and at this point it lies pre-eminently in the hands of the researcher to assign them to an appropriate semantic subset. Due to this fact, some of the collocations were labeled with two question marks. Yet, returning to the discussion of the preference for the semantic field of *Medicine*, *Psychosomatic* and *Psychology* reveals one important insight; *anxiety* is not only conceived as a human emotion but also as a clinical diagnosis. The semantic field of *economy* and *politics* is less strongly represented than with other emotions, however one can legitimately claim that *anxiety* seems to be closely associated with political terms such as competition, control, finances and fraud. With respect to this point, it is obvious that those concepts evoke a feeling of *anxiety*. Other field uncovered were *Natural phenomena*, *Sensations*, *time/ points of time* as well as seemingly emotion-specific subsets such as *Racism* or *Sports*. For a more precise list of the respective collocates I will once again refer the reader to the *Appendix 6*. Regarding the evaluative aspects of *anxiety*, one might already assume that the overall semantic prosody shows great likelihood to be NEGATIVE. *Table 18* below confirms this presumption, given that a considerably larger number of collocates refers to a negative evaluation of the emotion than to a positive one. Terms labeled with question marks again represent slightly ambiguous cases.

Table 18. POS and NEG evaluation of the emotion *anxiety*

<i>Evaluative aspects – POS/NEG semantic prosody</i>	
<i>POS +</i>	treatment [48], health [38], heart [36], relieve [64], help [63], alleviate [40], ease [42], overcome [33], coping [28], treat [26], include [49], great [114], increased [86], positive [36], intense [31], good [23], important [23], tremendous [19], elevated [17], decreased [16], positively [23], life [48]
<i>NEG –</i>	Fear [287], problems [108], anger [92], guilt [73], frustration [72], uncertainty [53], confusion [52], hostility [52], irritability [44], concern [37], sadness [36], cause/ caused [81], fear (verb) [75], depression [1162], stress [334], disorder [330], pain [108], panic [102], tension [87], insomnia [60], patients [60], depressive [43], distress [38], suffer [64], suffering [37], chronic [41], acute [31], clinical [28], phobic [28], nervous [23], debilitating [16], patients [60], race [46], black [43], white [21], post-

race [17], death [38], attacks/attack [104], fraud [19], fraught [19], would [125], could [104], might [57], should [49], never [26], reduction [88], reduce [161], negative [77], decreased [16], negatively [30], competitive?? [206]
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As provided by the above table, there occurs a number of collocates pointing towards a positive prosody, yet it is obvious that far more co-occurrences present *anxiety* as a vastly negative phenomenon. It becomes even more clear that most of the terms referring to negativity are taken from the semantic fields of *Medicine*, *Causes and Effects* as well as *Economy and Politics*.

Taking a closer look at the emotions *worry* & *anxiety* reveals that in general, they seem to be used in similar contexts with respect to semantics and pragmatics. Each of the terms shows a preference for comparable semantic subsets, even if the number of the respective collocations varies slightly. As has been pointed out before, *anxiety* appears to be more closely related to clinical terminology and diagnoses, while *worry* seems to be more commonly used in everyday language and colloquialisms. With respect to the evaluative aspects of both emotional nouns it can be claimed with confidence that *worry* as well as *anxiety* exhibit a clearly negative semantic prosody, although it is of importance to point out that latter, with respect to gradual differences of negativity, appears to have a slightly more negative connotation given the amount of NEG collocates found in the corpus investigation.

Having analyzed the above emotion terms, the following section will be dedicated to investigating the second set of near-synonyms, *euphoria* & *excitement*. Again, both nouns will be discussed separately with respect to their propensity for semantic subsets as well as evaluative aspects, followed by a succinct scrutiny of similarities and differences.

7.2 *Euphoria* & *Excitement* – a discussion of their description and evaluation

Firstly, examining the syntagmatic relationship of the emotion *euphoria* and its surrounding text (cf. Oster 2010: 753) demonstrates that the latter seems to exhibit an unequivocal preference for semantic fields such as *economy and politics*, *time/ points of time*, *sensations* as well as *natural phenomena*, less, on the other hand, for *medicine and psychology* or *causes and effects*. The semantic field of *amount/size/quality/ duration of the emotion* appears as a conceptual rather than a semantic matter, which is why this aspect will not be discussed any further. Yet, it is highly remarkable that *euphoria* seems to be closely associated with political and economic terminology, whereby the majority of the collocations refers to 20th and 21st century phenomena such as crisis, the postwar era, the post-cold-war era, the rise of the stock market as well as the ideas of political freedom and liberation. A more detailed

list of the particular collocates can be encountered in the *Appendix 6*. Concerning the semantic category of *time/ points of time*, it is noticeable that a great number of co-occurring words point towards periods of *euphoria* or a sudden beginning or the future, whereas the field of *Sensations* reveals highly positive collocates like happiness, joy, bliss or optimism. With respect to the latter, it is remarkable that *euphoria* is frequently linked to a feeling of drunkenness and lightheadedness, but also drug abuse. Hereby, it may be pointed out that the small number of medical terminology encountered predominantly concerns the drug phenomenon as well as alcoholism, mania or manic depression. Equally, considering the semantic field of *Causes and Effects*, it is noticeable that several of the respective collocates carry a more negative connotation. Among them is the verb “to cause”, which was argued to be predominantly associated with negative phenomena. However, it must be clarified that the raw frequency of “cause” co-occurring with *euphoria* is insignificantly small (freq=2) and might be insufficient for reaching a sound conclusion. Yet, taking a closer look at the evaluative aspects of the terms collocating with *euphoria*, it is further remarkable that its semantic prosody does not appear to be clearly POSITIVE or NEGATIVE. *Table 19* below is dedicated to portraying this issue in more detail; as can be seen from this depiction, *euphoria* tends to collocate with words carrying a positive connotation but also is associated with a relatively large number of negatively connoted words.

Table 19. POS and NEG evaluation of the emotion *euphoria*

<i>Evaluative aspects – POS/NEG semantic prosody</i>	
<i>POS +</i>	energy [4], relaxation [3], victory [9], freedom [5], liberation [4], success [4], winning [4], social [3], happiness [3], joy [3], optimism [3], bliss [2], giddy [3], happy [3], agitated [2], drunken [2], lightheaded [2], happily [2], mild [9], new [8], great [7], calming [3], romantic [2], tremendous [2], unalloyed [2], warm [2], wonderful [2], perfectly [2]
<i>NEG –</i>	fear [4], confusion [3], exhaustion [3], danger [2], fear (verb) [4], causing/caused [2], depression [5], anguish [3], pain [3], panic [3], AIDS [3], manic [2], War [13], crisis [5], collapse [2], demise [2], never [4], loss [3], tempered [5], nervous [2], cold [4], difficult [2], reduced [2], serious [2]

The above table shows that POS semantic prosody is preeminently represented by sensations related to happiness or political terms such as freedom, victory and liberation, while NEGATIVE semantic prosody is derived from medical terminology in connection with mania, panic and depression or again with negative political terms such as crisis and war. The latter example is partially associated with

World War II or post-war themes. This demonstrates that the corpus data has to be handled with care, given that it only contains texts and spoken recordings published between 1990 and 2012 and, hence, does not say much about the actual euphoric experiences of the people after the War. Nonetheless, those recordings may refer to historical events, which explains the relatively high number of occurrence of those political and economic terms.

Having briefly analyzed *euphoria*, the last emotional term to be taken into account will be the near-synonym *excitement*. As can be concluded from the data listed in *Appendix 6*, *excitement* shows a number of semantic preferences that are balanced. Unlike to the other emotions analyzed, the present investigation only revealed a small number of collocates referring to the *causes and effects* of the emotion. On the other hand, domains like *Sensations* or *time/ points of time* are equally strongly represented, as in the case of *euphoria*. The clear preference for the semantic field of *Sensations* will later also be reflected when examining the word's semantic prosody. What is further worth noting is the fact that areas like *Economy and Politics* or *Medicine*, which were widely favored by the other emotions, either did not appear or only a small number of co-occurrences was uncovered. This is inasmuch of interest as this outcome demonstrates that *excitement* neither seems to be used as a clinical term, nor is it much associated with political and economic events. Yet, it is important to point out that through the analysis there were some semantic fields discovered which seem to be unique to this emotion, for instance *Urbanity* with collocates such as building, city or room and *Movement*. *Face and body parts* as well as *natural phenomena* could already be encountered among the other emotions, however, the present case appears to show a clearer preference due to a higher number of co-occurring collocates. Finally, taking the emotion's evaluative aspects into consideration, it can be claimed with confidence that *excitement* is associated with a clearly POSITIVE prosody. *Table 20* below confirms this assumption. The number of co-occurring words refers to positive phenomena that are considerably larger than the words associated with negative sensations.

Table 20. POS and NEG evaluation of the emotion *excitement*

<i>Evaluative aspects – POS/NEG semantic prosody</i>	
<i>POS +</i>	Energy [84], enthusiasm [62], new [171], great [133], tremendous [28], good [26], intense [23], bright [17], pure [16], fresh [14], young [13], huge [12], strong [12], enormous [11], special [11], joy [53], pleasure [45], interest [40], passion [31], hope [30], desire [25], romance [23], pride [22], curiosity [19], relief [18], giddy [30], fun [11], pleasant [9], erotic [8], well [23], alive [19], hot [9], future [15]

NEG –	Danger [21], cause [17], lack [23], old [24], bad [8], nervous [35], dark [9], cold [9], never [39], could [140], would [93], may [28], might [27]
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What is striking however, is the fact that despite the clearly POSITIVE prosody, which was less apparent considering the case of *euphoria*, the word “cause” is plainly more frequent than in the analysis of the former (freq=17 for *excitement* in contrast to freq=2 for *euphoria*). Yet, even this difference is not high enough to reach a sound conclusion, which is why a further discussion of this issue will be left aside. Nonetheless, a vast number of co-occurrences related to a positive semantic prosody are derived from the general domain of *Sensations*, but also from descriptive terms that assign the emotion a size, amount or quality.

To conclude, the investigation of semantic preference and semantic prosody with respect to the emotions *worry*, *anxiety*, *euphoria* and *excitement* revealed several interesting insights. Firstly, it was demonstrated that the respective near-synonyms are evaluated in similar terms. The first emotion pair *worry* & *anxiety* are considered overall negative phenomena, whereas *euphoria* & *excitement* are conceived as having a positive connotation. Secondly, the near-synonyms, especially *worry* & *anxiety* showed a preference for similar semantic fields, a fact that underlines their status of near-synonymy. This, however, was not the case regarding the second emotion pair *euphoria* & *excitement*. Yet, as has been pointed out in former sections, their case turned out to be considerably more complex, which is why there were fewer overlaps than expected. Especially meaningful outcomes were provided by *anxiety*, which seems to show a significant inclination to be used for clinical terminology, as well as *euphoria*, which appears to be largely associated with the semantic field of *economy and politics*, especially due to a vast number of texts referring to 20th century occurrences.

Given the above analysis, Chapter seven finally concluded the detailed conceptual and semantic investigation of the four emotion terms under analysis. In the following section, the paper will be rounded down by a balanced conclusion summarizing the most important insights gained from the empirical analysis. The argument will then be linked to the theory discussed in Part I and I will briefly discuss several limitations the investigation had to face.

8. Concluding remarks

As this paper has demonstrated, corpus analysis proved to be a powerful tool in the area of conceptual metaphor research as well as in the determination of semantic and pragmatic phenomena such as the preference for specific semantic fields and semantic prosody. Overall, the investigation helped to gain relevant insights concerning the conceptualization of the four emotional terms *worry*, *anxiety*, *euphoria*, and *excitement*. The analysis equally covered their application within different semantic domains as well as their evaluative aspects. Scholars like Stefanowitsch (2006: 369ff.) or Oster (2010: 755) have claimed that corpus approaches like the *metaphorical pattern analysis* (MPA) applied in this paper are superior to the traditional introspective methods of extracting conceptual metaphors applied by researchers in the field of cognitive linguistics. This method allows the strict quantification of results and hence opens up completely new avenues of research. However, as aforementioned, all corpus data has to be handled with great care and, however detailed and professional a study may be conducted, one certainly has to be aware of the fact that a “manual” analysis may face a number of limitations.

In general, concerning the present case of the conceptual and semantic analysis of emotional terms, it can be claimed with confidence that a corpus query seems to be more adequate and feasible than the conventional methods. This is because computerized corpora provide the researcher with vast quantities of written and spoken data derived from a number of different genres. Yet, as pointed out before, even when dealing with a considerably large corpus as in the case of the COCA, corpus data still solely presents a small sample of language. With respect to this it may be argued that the entries in the corpus merely depict which kind of utterances actually occurred, and not what is in general linguistically possible. Hence, a corpus might not always represent the most satisfactory source when looking at fine-grained language peculiarities. In fact, a simple Google search revealed that in English, there exists a considerable number of additional metaphorical collocates in connection with the four emotional terms under analysis, all of them being absent in the COCA.

A further restriction regarding the present study was the methodology of data extraction and the great difficulty of realizing a sound metaphorical pattern analysis (MPA) with the enormous amount of data available. At first, MPA seemed to be hardly feasible due to the fact that analyzing every single collocation of a particular word would present an almost impossible task – especially when aiming to maintain the conceptual or semantic meaningfulness of the word. In fact, first and foremost, I decided

to only take collocates into account which demonstrated an MI score > 3 . However, as the COCA provided a far too small number of relevant co-occurrences with an MI score > 3 , the conclusion was reached that examining the first 200 most frequent nominal, verbal, adjectival and prepositional collocates of every emotion would lead to a more significant outcome. Having considered this, naming the conceptual metaphors and assorting the respective collocations into the particular domains presented a further challenge. I orientated myself toward the existing literature and considered methods applied by other researchers, although given that the present investigation revealed a number of metaphors not mentioned so far, and because labeling as well as allocating predominantly depends on the researcher, the outcome might have been slightly different if conducted by a someone else. Also, factoring in every single example provided for each co-occurrence was almost impossible, which is why some additional metaphors might have been left unnoticed. Due to lack of space in this paper, the cross-comparison between the emotions had to be kept relatively succinct and would in fact have provided more insights if performed in more detail.

With respect to the calculation of emotion-specific metaphors, one drawback was clearly the fact that the previous data was not statistically significant, which again complicated the interpretation of the results. Yet, despite the computed p-value of 0.053, which in general trespassed the threshold line of significance, it was argued that the distribution of metaphors was not entirely random, given that a language is a system that not necessarily has to follow all rules of organic distribution.

Further challenges had to be faced during the analysis of semantic preference and semantic prosody. Given that the COCA provides the researcher with an enormously vast amount of data, here in particular collocations, it was simply not feasible to consider all co-occurrences in order to determine preferred semantic fields as well as the words' evaluative aspects. Due to this, only the 100 most frequent nominal, verbal adjectival and adverbial collocates were taken into account and assorted to a varying number of semantic categories. Once again, this procedure may be slightly problematic, as several co-occurrences were ambiguous and could therefore have been assigned to a number of different semantic fields. Also, the denomination of the respective semantic fields is largely based on intuition, which again might provide a slight drawback in terms of consistency.

What basically has been attempted in this paper was to explore the advantages but also difficulties of corpus-based analyses of conceptual, semantic and pragmatic aspects in the field of the linguistic expression of four emotion concepts. Despite the various limitations the study faced, it may be claimed with confidence that the chosen corpus-based approach also offered several advantages. First and

foremost, by investigating the immediate surroundings (n-gram with $n=4$) of the search items in a vast amount of text and analyzing the lexical collocates they tend to co-occur with, one is on the one hand not only able to encounter evidence for conceptual metaphor and metonymy, but on the other hand also comforted with additional benefits provided by the corpus. While traditional introspective methods are predominantly focused on uncovering conceptual metaphors (and metonymies) from certain stretches of text, in the present case the description of the emotional concepts was enriched via information on additional dimensions, namely the semantic subsets the collocates predominantly belong to (cf. Oster 2010: 727, 755). Furthermore, a pragmatic viewpoint was added by discussing the evaluative aspects of each particular emotional term.

A second advantage provided by corpus approaches clearly lies in the possibility of quantification – comparing the frequency and productivity of individual metaphors and metonymies. With respect to this, it could be demonstrated that some metaphor subtypes not only occur in connection with a certain emotion, but also that in some cases they appear to be considerably more frequent than in others. As a result, conceptual domains typically associated with one or another emotion could be calculated via statistic significance tests, a procedure that would not have been feasible without the systematic quantification of the outcomes obtained. Relating to this, it may be mentioned that the ability of quantification appears to be of special importance concerning cross-linguistic contrastive analyses, as investigating quantitative alongside qualitative data is likely to result in a far more fine-grained picture and spot subtler differences between the languages concerned (cf. Oster 2010: 756). However, the latter issue is beyond the scope of this paper, given that the present investigation was conducted monolingually in the English language.

With respect to the analysis at hand, it can be argued that the applied corpus-based methodology has yielded highly interesting results overall and helped us to gain new insights on how the four emotions under analysis, *worry & anxiety* and *euphoria & excitement* are conceptualized. It has allowed us to determine which of the uncovered metaphors is favored by each emotion and we have been able to collect genuine information on semantic preference and semantic prosody. Arguably, the conceptualization of emotions is a neatly investigated area in the field of cognitive linguistics and cognitive science. Nonetheless, the present examination represents a partial novelty, given that primarily basic emotions like *fear*, *anger* or *happiness* were taken into account, whereas the four emotions scrutinized in this paper have been widely left aside. Relating to this matter, the facts claimed in the previous literature, namely that emotions in general show great likelihood to be grounded in

neural embodiment, were demonstrated as well as the fact that abstraction tends to be conceptualized via concrete terminology. Furthermore it was claimed beforehand that there exist several conceptual domains typical to the field of emotions, such as the CONTAINER metaphor or FORCE-DYNAMIC schemata, all of which could be uncovered in the present investigation. This once again has proven the argumentation put forward by well-known researchers in the area of emotions and conceptual metaphors. By investigating two pairs of near-synonyms, a further linguistic dimension was taken into account, namely that the respective near-synonyms are indeed partially similar in terms of their conceptualization but are by no means equal. At that point, it may additionally be stated that a number of similarities concerning the conceptual understanding were revealed alongside all four emotions. This outcome proved two points, namely that synonymous words are definitely not fully interchangeable in all contexts and furthermore, that some of the conceptualizations encountered might be typical for the domain of emotions in general and not specific to one or more particular emotions investigated in this paper.

Finally, the examination of semantic preference as well as semantic prosody revealed a number of revolutionary insights, given that through this scrutiny it was once again demonstrated that the respective near-synonyms indeed share their overall evaluative aspects, nonetheless partially exhibit a preference for differing semantic fields. The latter fact further supports the presumption that near-synonyms words on the one hand describe similar phenomena, yet they do not fully overlap in all aspects of meaning and are definitely always dependent on a specific context.

To sum up, it may once again be stated that even though the investigation was prone to face certain challenges and a more detailed scrutiny was simply beyond the realms of possibility, the overall outcome of the study was satisfactory with respect to the number of insights gained. Even though the research of emotions as well as the methodological approaches chosen did not represent a complete novelty in the field of cognitive linguistics, new information on emotions in general and the four terms analyzed in particular, could be obtained from the query results. Thus, the present analysis provides fruitful material for further scrutiny through the linguistic research of CMT as well as in the domain of semantic and pragmatic evaluative concepts of emotions.

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R statistical calculation open source software

10. Appendix

Appendix 1.

Metaphorical collocates of *worry*

Metaphorical collocates [LEMMAS]	Raw absolute Frequency (all genres)
<i>Nominal collocates</i>	
face → you could see the worry seeping into his face	69
eyes → her eyes wide with worry	46
lot → a lot of worry	45
source	32
voice → her voice filled with worry/ her voice thick with worry	25
measure	23
mind → she held the worry in her mind	20
state → state of worry	19
part → a part of worry	15
level → level of worry	14
brow → his brow creased with worry	14
line → worry line between her eyes	12
dimensions	12
wave → wave of worry	12
wall → the market climbs a wall of worry	11
forehead → sharp edged worry creased his forehead	11
air → worry filled the air between them/ Neil could taste the worry in the air	10
degree → degree off worry	10
signs	9
bit → a little bit of worry	9
lack → lack of worry	8
weather → weather is a constant worry	8
burden → the burden of worry	7
amount → a certain amount of worry	7
hand → wringing his hands with worry	7
increase	6
area → her first area of worry	6
attacks	6
debt → the debt is an enormous worry	6
content	6
component	6
shock → A low voltage shock of worry tingled in the back of his mind	6
weight → he carried the weight of his worry with him/bent under the weight of their worry	6
tone → worry inside their tone	6
thoughts → worry filled all her thoughts	6

sea → A tiny island of worry in a sea of celebration	5
scale	5
<i>Verbal collocates</i>	
should → worry should make him circumspect	11
increased	7
began → worry began to mix with anger/ worry began poking at me	7
creasing → ignore the worry creasing his forehead	7
turned → worry turned into fear/ worry turned her voice into whisper	5
did – worry did not go away	4
etched → worry etched on her face	3
filled → worry filled all her thoughts/ worry filled the silence	3
creeping → he felt worry creeping into his chest	3
lies → bigger worry lies just ahead	3
left → the worry left her quickly	2
stems → worry stems from an honest mistake	2
involves	2
belonged → worry belonged to her	2
bloom → he saw the worry bloom	2
based → worry based on experience	2
disappeared	2
crosses → worry crosses his mind	2
filling → [...] worry filling his stomach with pressure	2
followed → a niggling worry followed	2
grew	2
hummed → worry hummed in the air	1
extends	1
gained → worry gained hold inside him	1
gnawed/gnaws → worry gnawed at her	1
evaporates	1
flickered → worry flickered across his face	1
floated → worry floated in the air	1
mixed → worry mixed with sadness	1
multiplied → her intense worry multiplied by six	1
needling → [...] worry needling the edge of her brain	1
nestle → sick worry nestled down in her gut	1
nagged → worry nagged at Rachel	1
numbing → [...] my worry numbing my mind like a stroke	1
paralyzes → worry paralyzes the sufferer	1
pinched → worry pinched my brow	1
reached → worry reached an intolerable level	1
recede → Paul felt his worry recede	1
chewed → worry chewed at him relentlessly	1
building → [...] worry building across his face	1
tug → worry begun to tug at the base of his consciousness	1

arises	1
attacks	1
discolored → worry discolored every frame of his dream	1
dissolved/dissolves → worry dissolved the tension between them	1
descended → suddenly a worry descended upon him	1
edged → worry edged into her mind	1
emerged	1
entered → superstitious worry entered his mind	1
escalating → [...] her worry escalating into panic	1
coursing → [...] worry coursing around in its familiar pace	1
contains	1
worming → [...] worry worming its way into [...]	1
unraveling → [...] his worry unraveling under their influence	1
wash → I felt a wave of worry wash over me	1
weighted → worry weighted her tone	1
written → worry written on his face	1
streaks → worry streaks up Mary's backbone	1
surfaced → worry surfaced in absurd details	1
surge → [...] and worry surge through her [...]	1
surrounding → a vapor of worry surrounding the child	1
tacked → there is another worry tacked onto that	1
<i>Adjectival collocates</i>	
biggest/big	130/97
sick → sick worry/sick with worry	49
old	19
little	17
serious	16
growing	16
higher → higher levels of worry	12
full → full of worry	12
deep	12
frantic → frantic with worry	11
small	10
toxic	10
added → added worry	9
nagging	9
underlying	8
low → low levels of worry	8
crazy → crazy with worry	8
brief	7
increased	7
vague	7
wide → her eyes wide with worry	6
widespread	6
enormous	5
taut → her expression taut with worry	5

quiet → [...] from quiet worry to panic	4
slight	4
cold → her look was cold with worry	4
distant → her concern became a distant worry	4
dark → her face was dark with worry	4
empty → [...] her worry made her feel emotionally empty	3
central	3
leading	3
pale → they are all staring with pale worry at [...]	3
fresh → farmers have a fresh worry	3
heavy → his face heavy with worry	3
gray → I'll go gray with worry	3
larger	3
initial	3
wrinkled → her face, wrinkled with worry	3
tired → [...] this kind of tired worry	3
thick → his face grows thick with worry	3
silent → silent worry/ the room fell silent with worry	3
sharp → Harry could hear the sharp worry	2
<i>Prepositional collocates</i>	
of → full of worry/ the usual stain of worry in her voice/ I saw the weight of worry in his eyes	1033
with → sick/frantic/crazy/ down with worry	475
in → in a state of worry	371
on → worry on their face	241
over → worry over what will happen	68
at → worry nagged at her	37
into → worry etched into her mind/ they inject worry into our lives/worry seeping into his face	31
off → he could feel waves of worry rolling off him	5
inside → deep inside her worry/ [...] worry inside Dale's stomach	5
beyond → beyond this worry	5
across → subtle waves of worry across his brow	5
toward → toward the worry of [...]	3
through → [...] that did not cut through her worry	2
behind → the worry behind his inconsistency	2
down → pushing down her worry	1
below → [...] worry safely below consciousness	1
amidst → that decision comes amidst worry	1
outside → we may locate the worry outside of ourselves	1
top → this worry on top of her concerns	1

Conceptual metaphors	Collocates	Number of occurrences/ relative frequency
WORRY IS A LIQUID/GASEOUS SUBSTANCE (IN A CONTAINER) (water metaphors)	face → you could see the worry <i>seeping</i> into his face source voice → her voice filled with worry measure mind → she held the worry <i>in</i> her mind level → level of worry wave → wave of worry air → worry filled the air between them/ Neil could taste the worry in the air degree → degree off worry increase/increased tone → worry inside their tone thoughts → worry filled all her thoughts scale increased began → worry began to mix with anger turned → worry turned into fear/ worry turned her voice into whisper (like water into ice!!!) etched → worry etched on her face filled → worry filled all her thoughts/ worry filled the silence creeping → he felt worry creeping into his chest filling → [...] worry filling his stomach with pressure extends gained → worry gained hold inside him evaporates floated → worry floated in the air mixed → worry mixed with sadness reached → worry reached an intolerable level recede → Paul felt his worry recede dissolved/dissolves → worry dissolved the tension between them escalating → [...] her worry escalating into panic wash → I felt a wave of worry wash over me surfaced → worry surfaced in absurd details	46 / 27.21%

	surge → [...] and worry surge through her [...] surrounding → a vapor of worry surrounding the child higher → higher levels of worry full → full of worry toxic low → low levels of worry increased vague (?) empty → [...] her worry made her feel emotionally empty of → full of worry/ the usual stain of worry in her voice into → worry etched into her mind/ they inject worry into our lives/worry seeping into his face off → he could feel waves of worry rolling off him inside → worry floating inside Dale's stomach across → subtle waves of worry across his brow	
WORRY IS COLDNESS	cold → her look was cold with worry fresh → farmers have a fresh worry	2 / 1.18%
WORRY IS A CONTAINER	Content involves contains deep → deep worry in → in a state of worry inside → deep inside her worry amidst → that decision comes amidst worry	7 / 4.14%
WORRY IS INSANITY	frantic → frantic with worry crazy → crazy with worry with → sick/frantic/crazy/ down with worry	3 / 1.77%
WORRY IS (A STINGING) PAIN	needling → [...] worry needling the edge of her brain pinched → worry pinched my brow edged → worry edged into her mind sick → sick with worry sharp → Harry could feel the sharp worry	5 / 2.95%
WORRY IS A NUMERIC VALUE	multiplied → her intense worry multiplied	2 / 1.18%

	by six added → added worry	
WORRY IS A SCRIPT	written → worry written on his face	1 / 0.95%
WORRY IS A LOCATION	area → her first area of worry sea → A tiny island of worry in a sea of celebration scale underlying distant → her concern became a distant worry central beyond → beyond this worry toward → toward the worry of [...] behind → the worry behind his inconsistency	8 / 4.73%
WORRY IS WAR	area → her first area of worry attacks	2 / 1.18%
WORRY IS LUMINOSITY/COLOR	flickered → worry flickered across his face discolored → worry discolored every frame of his dream dark → her face was dark with worry pale → they are all staring with pale worry at [...] gray → I'll go gray with worry	5 / 2.95%
WORRY IS A REINFORCER	Voice → her voice <i>thick</i> with worry	1 / 0.95%
WORRY IS AN EVENT	State → state of worry brief initial	3 / 1.77%
WORRY IS A LIVING ORGANISM/ANIMATE BEING	should → worry should make him circumspect began → worry began poking at me did → worry did not go away stems → worry stems from an honest mistake bloom → he saw the worry bloom crosses → worry crosses his mind followed → a niggling worry followed grew hummed → worry hummed in the air gnawed/gnaws → worry gnawed at her nestle → sick worry nestled down in her gut nagged → worry nagged at Rachel	31 / 18.34%

	chewed → worry chewed at him relentlessly tug → worry begun to tug at the base of his consciousness arise descended → suddenly a worry descended upon him emerged entered → superstitious worry entered his mind coursing → [...] worry coursing around in its familiar pace worming → [...] worry worming its way into [...] streaks → worry streaks up Mary's backbone sick → sick worry old serious growing nagging quiet → [...] from quiet worry to panic leading tired → [...] this kind of tired worry silent → silent worry/ the room fell silent with worry	
WORRY IS PART OF A WHOLE	lot → a lot of worry part → a part of worry bit → a little bit of worry lack → lack of worry component	5 / 2.95%
WORRY IS ELECTRICITY	shock → A low voltage shock of worry tingled in the back of his mind numbing → [...] my worry numbing my mind like a stroke paralyzes → worry paralyzes the sufferer	3 / 1.77%
DIRECT LINGUISTIC METAPHOR	weather → <i>weather is</i> a constant worry debt → <i>the debt is</i> an enormous worry	2 / 1.18%
WORRY IS A CONCRETE/PHYSICAL OBJECT	Dimensions wall → the market climbs a wall of worry forehead → <i>sharp edged</i> worry creased his forehead signs burden → the burden of worry amount → a certain amount of worry	31 / 18.34%

	weight → he carried the weight of his worry with him/bent under the weight of their worry scale lies → bigger worry lies just ahead belonged → worry belonged to her based → worry based on experience disappeared weighted → worry weighted her tone unraveling → [...] his worry unraveling under their influence (=a knot) tacked → there is another worry tacked onto that biggest/big little small widespread enormous slight heavy → his face heavy with worry larger of → I saw the weight of worry in his eyes over → worry over what will happen through → [...] that did not cut through her worry down → pushing down her worry below → [...] worry safely below consciousness outside → we may locate the worry outside of ourselves top → this worry on top of her concerns	
METONYMY (facial changes)	face → you could see the worry seeping into his face eyes → her eyes wide with worry brow → his brow creased with worry line → worry line between her eyes forehead → sharp edged worry creased his forehead hands → wringing his hands with worry creasing → ignore the worry creasing his forehead building → [...] worry building across his face taut → her expression taut with worry wrinkled → her face, wrinkled with worry	12 / 7.10%

thick → his face grows thick with worry
on → worry on their face

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Appendix 2.

Metaphorical Collocates of *Anxiety*

Metaphorical collocates [LEMMAS]	Raw absolute Frequency (all genres)
<i>Nominal collocates</i>	
level/levels	271/412
scores	141
scale	136
attack	104
source	101
measures	97
reduction	88
tension	87
direction	55
amount	40
pressure	39
dimension	37
<i>Verbal collocates</i>	
found (passive)	83
reducing	64
include	49
filled	48
measured	44
lead	42
create	40
increase	37
reduced	36
going	36
come	35
makes	33
overcome	33
based	31
showed/showing	29/15
decrease	28
produce	24
rising	24
revealed	23
indicate	23

take	22
turned (into)	21
develop	20
linked	20
lessen	18
mounting	17
generated	17
eating	17
began (event structure)	17
gripped	16
growing	16
manage	16
seen	15
lower	15
giving	15
exhibit	15
allay	14
hide	14
followed	14
surrounding	13
<i>Adjectival collocates</i>	
high	280
competitive	206
low/lower	115
increased	86
(negative)	71
greater	64
severe	62
physical	52
public	45
deep	40
growing	39
full	38
little	37
major	30
multidimensional	25
free-floating	22
white	22
elevated	17
debilitating	16
decreased	16
reduced	16
strong	15
free	15
mild	14
widespread	14

old	13
enormous	13
modern	12
natural	11
huge	9
cold	9
<i>Adverbial collocates</i>	
much	16
<i>Prepositional collocates</i>	
in → in a state of anxiety, [...] see deep anxiety in her eyes	1785
over → the anxiety over sth.	473
on	255
between → between anxiety and daily existence	84
through → anxiety went through him	44
towards → anxiety towards the content knowledge of mathematics	37
out → taking the anxiety out of dementia, breathing out tension and anxiety	36
within → anxiety that arises within the modern	31
under → under the influence of anxiety	27
around → there is some anxiety moving around that	23
across → anxiety rippled across her shoulders	22
against → a battle against anxiety and loneliness	13
beyond → the model has been recently extended beyond anxiety	6
onto → a shift of anxiety onto sb.	6
outside → [...] variance outside of anxiety	5
up → building up/ bottling up anxiety	5
beneath → beneath his fear and anxiety	4
inside → [...] a river of anxiety inside him	3
beside → to be beside oneself with anxiety	2
below → the anxiety level lied below the baseline	2

Conceptual metaphors	Collocates	Number of occurrences/ relative frequency
ANXIETY IS A LIQUID IN A CONTAINER	Level/levels measures reduction reducing filled measured increase reduced decrease	29 / 27.88%

	rising lessen mounting lower allay high low/lower increased full free-floating elevated decreased reduced much through → a stream of anxiety went through him out → taking the anxiety out of dementia within → anxiety that arises within the modern up → building up/ bottling up anxiety inside → [...] a river of anxiety inside him below → the anxiety level lied below the baseline river → river of anxiety across → anxiety rippled across her shoulders the anxiety began to drain	
ANXIETY IS WAR	Attack against → a battle against anxiety and loneliness	2 / 1.92%
ANXIETY IS PRESSURE IN A CONTAINER	Tension → the tension of anxiety had been replaced pressure → releasing the pressure of anxiety	2 / 1.92%
ANXIETY IS A LIVING ORGANISM/ANIMATE BEING	Going come makes showed/showing eating gripped growing followed competitive	14 / 13.46%

ANXIETY IS A CONCRETE/PHYSICAL OBJECT	strong free old natural around → there is some anxiety moving around that Scale measures direction dimension amount found (passive) lead (towards) create overcome based produce revealed indicate take turn (into) develop linked (with) seen giving hide surrounding greater physical little major multidimensional white widespread enormous modern huge over → the anxiety over sth. on between → between anxiety and daily existence towards → anxiety towards the content knowledge of mathematics under → under the influence of anxiety beyond → the model has been recently	40 / 38.46%
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	extended beyond anxiety beneath → beneath his fear and anxiety beside → to be beside oneself with anxiety onto → a shift of anxiety onto sb.	
ANXIETY IS A SUBSTANCE	Mild cold Fresh → face of fresh anxiety	3 / 2.88%
ANXIETY IS AN EVENT/ A SITUATION	Source (circumstance) began manage exhibit severe public	6 / 5.76%
ANXIETY IS ILLNESS	debilitating	1 / 0.96%
ANXIETY IS A CONTAINER	Include deep in → in a state of anxiety, [...] see deep anxiety in her eyes outside → [...] variance outside of anxiety allay	5 / 4.80%
		Σ 104

Appendix 3. Metaphorical collocates of *euphoria*

Metaphorical collocates [LEMMAS]	Raw absolute Frequency (all genres)
<i>Nominal collocates</i>	
state	20
war	13
air → euphoria in the air	9
period	8
way → [...] the way to euphoria	8
victory	8
wave	6
midst → euphoria rising in our midst	6
end	6
stage	4
growth	3
rush	3

part	3
elation	2
bubble	2
burst	2
collapse	2
scene	2
<i>Verbal collocates</i>	
caught	10
followed	10
last	10
swept → euphoria swept other areas	9
greeted	8
came/comes	7
fade	7
spread	6
going	6
induce	6
surrounding/surrounded	5
produce	5
wore off	5
washed	4
seen/seeing	4
share	4
is/was gone/ went	4
brought/bring	4
began	4
evaporate	3
accompanied	3
filled	3
flooded	3
lingers	3
lost → lost in the euphoria	3
led → euphoria led us to believe [...]	3
turned → euphoria turned sour before 1992	3
shatter	2
rushing	2
sustain → sustain the level of euphoria	2
struck → struck by euphoria	2
produced	2
provide	2
outpouring	2
passed	2
revel → revel in euphoria	2
interrupt	2
returned	2
include	2

look → look past the euphoria	2
burst	2
appears	2
dissipates	2
died	2
diminished	2
disappeared	2
drove → [...] investor euphoria dove the company to [...]	2
dampen	2
decorates	1
deflates/deflated	1
deliver	1
descend	1
<i>Adjectival collocates</i>	
early	15
high	11
mild	9
short-lived	7
temporary → event structure	5
little	5
cold → fantasy/SciFi → exception	5
near	4
intense	3
clear → clear sense of euphoria	3
giddy → feeling giddy with euphoria	3
drunken → a drunken feeling of euphoria/ drunken state of euphoria	3
growing	3
complete	2
brief → brief period of euphoria	2
reduced	2
nervous	2
warm	2
frothy	2
tremendous → a tremendous amount of euphoria	2
subsiding	2
total (part of a whole)	2
unlimited	2
strong	2
swelling	1
sobering	1
tepid	1
weightless → to feel weightless with euphoria	1
widespread	1
mindless/mindful	1
playful	1

<i>Prepositional collocates</i>	
of → a sigh of euphoria	341
in → in sudden euphoria of success	105
over → euphoria washing/rushing over her	41
on → [...] might float on euphoria	16
after → after the euphoria was behind you	15
into → leading into euphoria, translate euphoria into action	9
against → guard against euphoria	7
between → between passion and euphoria	5
amid → amid the euphoria	4
through → euphoria surged through me/ spread through the folks [...]	4
throughout → euphoria spread throughout the country	4
around → I'm still carrying around the euphoria	2
off → take the edge off that euphoria	2
past → [...] look past the euphoria	2
near → my eyes began to gloat in near euphoria	2
inside → suddenly I felt a singular euphoria inside me	2
alongside	2
toward → a temptation toward euphoria	2

Conceptual metaphors	Collocates	Number of occurrences/ relative frequency
EUPHORIA IS A (LIQUID/GASEOUS) SUBSTANCE (water metaphors) (partly in a CONTAINER)	Air wave → Calming waves of swelling euphoria washed over the [...] midst → euphoria rising in our midst swept → euphoria swept other areas induce → induce a mild euphoria washed → a sigh of euphoria washed over her evaporate filled flooded linger → euphoria lingered in the air turned → euphoria turned sour before 1992 rushing sustain → sustain the level of euphoria outpouring dissipates diminished dampen deflates/deflated	36 / 29.75%

	mild cold → fantasy/SciFi → exception → cold euphoria flooded the room intense clear → clear sense of euphoria drunken → a drunken feeling of euphoria/ drunken state of euphoria reduced warm frothy subsiding swelling sobering tepid spread widespread over → euphoria washing/rushing over her on → [...] might float on euphoria through → euphoria surged through me/ spread through the folks [...] throughout → euphoria spread throughout the country inside → suddenly I felt a singular euphoria inside me	
EUPHORIA IS WAR	War victory against → guard against euphoria	3 / 2.48%
EUPHORIA IS A LIVING ORGANISM/ ANIMATE BEING	Growth rush collapse followed → a sigh of euphoria followed up greeted came/comes fade going seen/seeing is/was gone/ went accompanied led → euphoria led us to believe [...] returned appeared died disappeared drove → [...] investor euphoria dove the company to [...]	25 / 20.66%

	descend short-lived growing nervous strong mindless/mindful playful of → a sigh of euphoria	
EUPHORIA IS A CONTAINER	Caught → caught up in the euphoria lost → lost in the euphoria revel → revel in euphoria include in → in sudden euphoria of success into → leading into euphoria amid → amid the euphoria state → in a state of euphoria	8 / 6.61%
EUPHORIA IS A CONCRETE/ PHYSICAL OBJECT	Collapse surrounded/surrounding produce wore off share provide deliver near tremendous → a tremendous amount of euphoria unlimited amount of euphoria decorates after → after the euphoria was behind you between → between passion and euphoria around → I'm still carrying around the euphoria off → take the edge off that euphoria past → [...] look past the euphoria alongside toward → a temptation toward euphoria	18 / 14.88%
EUPHORIA IS PART OF A WHOLE	Part little complete total unlimited	5 / 4.13%
EUPHORIA IS AN EVENT	State period end stage	13 / 10.74%

	scene followed last began passed interrupt early temporary brief → brief period of euphoria way → [...] the way to euphoria	1 / 0.08%
EUPHORIA IS A DESTINATION/JOURNEY		
EUPHORIA IS UP	Euphoria rising up inside me elated high	3 / 2.48%
EUPHORIA IS A PRESSURIZED CONTAINER	Bubble → euphoria popped like a bubble burst → after a burst of euphoria burst (verb) shatter	4 / 3.30%
METONYMY → PHYSICAL REACTION	giddy → feeling giddy with euphoria drunken → a drunken feeling of euphoria/ drunken state of euphoria weightless → to feel weightless with euphoria near → my eyes began to gloat in near euphoria shatter → euphoria shattered my nerves	5 / 4.13%
		Σ121

Appendix 4. Metaphorical collocates of *excitement*

Metaphorical collocates [LEMMAS]	Raw absolute Frequency (all genres)
<i>Nominal collocates</i>	
lot → a lot of excitement	178
eyes → her eyes were wide with excitement	126
voice → excitement ringing in his voice	114
air	76
level	68
way → give way to excitement	48
face	45
part	44

state	43
heart → her heart pounded/leapt with excitement	41
moment (event)	40
rush	38
bit	30
surge	26
mixture → mixture of awe and excitement	26
lack	23
tension	22
wave	22
body → excitement rushed through his body	18
face → their faces pinched with excitement	18
shiver → shiver of excitement	17
mix	16
degree	16
source	15
field → the most excitement in this growing field	14
flurry	14
element	13
electricity → electricity ran as excitement through my veins	13
burst	13
look → a look of excitement on his face	13
mind → clamoring excitement filled her mind	12
atmosphere → the atmosphere was thick with excitement	12
edge → the sharp edge of excitement	12
fever	11
tingle	11
spirit → excitement stirs your spirit	10
pitch	10
blood → his blood hummed with excitement	10
<i>Verbal collocates</i>	
feel → feel the thrum of excitement	103
contain	64
filled	62
caught → caught up in excitement	52
create	47
add	46
share	44
bring	40
came	36
surrounding	34
flush → flushed with excitement	31
saw	30
got/ got blinded by excitement	28
provide	28
began	24

grew/growing	24/11
went → she went mad with e. the level of e. went up	23
gave → excitement gave him a dazzling smile	21
heard	21
build/ building up	20
ran → excitement ran down her spine/ran through her veins etc.	20
mounting	19
forgotten → forgotten in the excitement	18
convey	18
bubbling	18
passed	18
trembling/trembled	18
lost → lost in the excitement	17
capture → capture the excitement (wild animal)	15
stirred	14
hide	14
died	14
shared	12
rising	12
feels → she feels a throb of excitement	12
burst	12
charged → charged with excitement	11
lit → lit with excitement	11
showed	11
run → a shiver of e. run through me	10
reached → e. reached a fatal level	10
meeting → meeting in the excitement	10
started	10
swept → I was swept away in the excitement	10
following	10
gripped → the giddy excitement gripped him only for a moment	9
<i>Adjectival collocates</i>	
little	76
high	70
full	69
growing	41
nervous	35
giddy	30
big	28
tremendous	28
old	24
wild	22
breathless → breathless with excitement	19
alive → keep the excitement alive	19
bright	17
pure	16

fresh	13
creative → in the fever of creative excitement	13
strong	12
huge	12
enormous	11
early	11
contagious	11
wide → her eyes wide with excitement	10
hot → hot with excitement/hot sweat of excitement	9
electric	9
dark → her eyes went dark with excitement	9
large → a large dose of excitement	9
infectious	9
natural	8
rising	8
suppressed	8
golden	8
higher	7
increasing	7
feverish	7
shared	7
mounting	7
low	7
visible	6
mad → mad with excitement	6
morbid	6
tiny → a tiny spark of excitement	6
heightened	6
immense	5
faint	5
brief → a brief flurry of excitement	5
curious	5
raw	5
romantic	5
red → red plots of excitement	5
warm	5
vibrant	5
unbridled	5
white → white with excitement	5
rosy → [...] her face rosy with excitement	4
quick → quick shock of excitement	4
sick	4
deep	4
asleep → he fell asleep in his excitement	4
flushed	4
empty	4

endless	4
<i>Prepositional collocates</i>	
of → an audible buzz of excitement	2553
in → in the excitement	925
to → listen to her excitement growing over	308
on → excitement on the Wall Street	155
through → excitement blazed/rushed/swept through her	118
into → excitement creeping into my voice	66
[...] reach into that excitement	47
around → palpable excitement ripples around the club	28
out → out off excitement/keep excitement out	26
after	18
between → between excitement and terror	14
up → building up excitement	12
within → a rush of excitement deep within her/ excitement within the country	12
before	11
amid	9
inside → excitement rose/swell inside her	7
behind	7
beyond	5
under	4
toward	3
beneath → excitement beneath his anxiety	3
outside → [...] soon the excitement spread outside her kitchen	2
across → excitement echoed across	1
below → excitement below the surface	1

Conceptual Metaphors	Collocates	Number of occurrences/ relative frequency
EXCITEMENT IS A LIQUID/ GASEOUS SUBSTANCE (IN A CONTAINER)	voice → excitement ringing in his voice/ voice filled with excitement air → Excitement stirs the air level rush surge mixture → mixture of awe and excitement wave body → excitement rushed through his body	40 / 23.80%

	mix degree source flurry mind → clamoring excitement filled her mind atmosphere → the atmosphere was thick with excitement spirit → excitement stirs your spirit pitch filled contain went → the level of excitement went up ran → excitement ran down her spine/ran through her veins etc. bubbling stirred run → a shiver of e. run through me reached → e. reached a fatal level swept → I was swept away in the excitement full pure fresh natural rising increasing mounting low heightened through → excitement blazed/rushed/swept through her palpable excitement ripples around the club within → a rush of excitement deep within her inside → excitement rose/swell inside her below → excitement below the surface outside → [...] soon the excitement spread outside her kitchen large → a large dose of excitement Went → she went crazy with excitement wild mad → mad with excitement morbid contagious	
EXCITEMENT IS ILLNESS/ INSANITY		6 / 3.57%

EXCITEMENT IS A CONTAINER	infectious Caught → caught up in the excitement forgotten → forgotten in the excitement lost → lost in the excitement deep asleep → he fell asleep in his excitement empty in → in the excitement/ in a state of excitement into → reach into that excitement out → out of excitement meeting → meeting in the excitement	10 / 5.95%
EXCITEMENT IS A LIVING ORGANISM	gave → excitement gave him a dazzling smile heard died following growing nervous giddy clamoring old alive → keep the excitement alive creative strong curious raw romantic sick grew/growing of → an audible buzz of excitement to → listen to her excitement growing into → excitement creeping into my voice	20 / 11.90%
EXCITEMENT IS A VICIOUS ANIMAL	capture → capture the excitement (wild animal) wild unbridled gripped → the giddy excitement gripped him only for a moment	4 / 2.38%
EXCITEMENT IS HEAT/LIGHT	Fever lit → lit with excitement bright hot → hot with excitement/hot sweat of excitement feverish	10 / 5.95%

	warm blaze → blaze of excitement to ignite passion and excitement the night was lit with excitement across → excitement echoed across	
EXCITEMENT IS PRESSURE IN A CONTAINER	Tension burst → a burst of excitement tossing out burst (verb) suppressed	4 / 2.38%
EXCITEMENT IS PART OF A WHOLE	Part bit lack element little	5 / 5.95%
EXCITEMENT IS ELECTRICITY	electricity → electricity ran as excitement through my veins charged → charged with excitement electric tiny → a tiny spark of excitement vibrant quick → quick shock of excitement	6 / 3.75%
EXCITEMENT IS A CONCRETE/ PHYSICAL OBJECT	lot → a lot of excitement way → give way to excitement field → the most excitement in this growing field edge → the sharp edge of excitement create add share bring surrounding provide saw convey big tremendous hide share showed high/higher huge enormous golden low visible immense	33 / 19.64%

EXCITEMENT IS AN EVENT/SITUATION	faint over on → excitement on the Wall Street between → between excitement and terror up → building up excitement amid behind beyond toward/s beneath → excitement beneath his anxiety State moment began passed started early romantic endless after before	10 / 5.95%
METONYMY → PHYSICAL REACTION	eyes → her eyes were wide with excitement face → his face flushed with excitement/ face → their faces pinched with excitement heart → her heart pounded/leapt with excitement shiver → shiver of excitement look → a look of excitement on his face tingle blood → his blood hummed with excitement feel → feel the thrum of excitement flush → flushed with excitement got → got blinded by excitement trembling with excitement feels → she feels a throb of excitement breathless → breathless with excitement wide → her eyes wide with excitement dark → her eyes went dark with excitement white → white with excitement rosy → [...] her face rosy with excitement asleep → he fell asleep in his excitement every cell in her body was popping with	20 / 11.90%

excitement

Σ 170

Appendix 5:

	X IS A LIQUID/GASEOUS SUBSTANCE	X IS A LIVING ORGANISM	X IS A CONCRETE/PHYSICAL OBJECT	X IS A CONTAINER	<i>Totals</i>
<i>Worry</i>	46	31	31	7	115
<i>Anxiety</i>	29	14	40	5	88
<i>Euphoria</i>	36	25	18	8	87
<i>Excitement</i>	40	20	33	10	103
<i>Totals</i>	151	90	122	30	393

```
> x<-matrix(c(46, 29, 36, 40, 31, 14, 25, 20, 31, 40, 18, 33, 7, 5, 8, 10), ncol=4)
> attr(x, "dimnames")<-list(Disfluency=c("worry", "anxiety", "euphoria", "excitement"), POS=c("X IS A LIQUID/GASEOUS SUBSTANCE", "X IS A LIVING ORGANISM", "X IS A CONCRETE/PHYSICAL OBJECT", "X IS A CONTAINER"))
> addmargins(x)
```

	POS	
Disfluency	X IS A LIQUID/GASEOUS SUBSTANCE	X IS A LIVING ORGANISM
worry	46	31
anxiety	29	14
euphoria	36	25
excitement	40	20
Sum	151	90

	POS		
Disfluency	X IS A CONCRETE/PHYSICAL OBJECT	X IS A CONTAINER	Sum
worry	31	7	115
anxiety	40	5	88
euphoria	18	8	87
excitement	33	10	103
Sum	122	30	393

```
> x.test<-chisq.test(x, correct=FALSE)
> x.test$exp
```

METAPHORS		
Emotion	X IS A LIQUID/GASEOUS SUBSTANCE	X IS A LIVING ORGANISM
worry	44.18575	26.33588
anxiety	33.81170	20.15267
euphoria	33.42748	19.92366
excitement	39.57506	23.58779
METAPHORS		
Emotion	X IS A CONCRETE/PHYSICAL OBJECT	X IS A CONTAINER
worry	35.69975	8.778626
anxiety	27.31807	6.717557
euphoria	27.00763	6.641221
excitement	31.97455	7.862595

> x.test

Pearson's Chi-squared test

data: x

X-squared = 16.7071, df = 9, p-value = 0.05351

> x.test\$res

METAPHORS		
Emotion	X IS A LIQUID/GASEOUS SUBSTANCE	X IS A LIVING ORGANISM
worry	0.2729329	0.9088580
anxiety	-0.8274951	-1.3705580
euphoria	0.4449455	1.1372757
excitement	0.0675481	-0.7387253
METAPHORS		
Emotion	X IS A CONCRETE/PHYSICAL OBJECT	X IS A CONTAINER
worry	-0.7865780	-0.6003042
anxiety	2.4263894	-0.6626825
euphoria	-1.7332749	0.5272599
excitement	0.1813469	0.7622611

```
> sqrt(x.test$stat/(sum(x) * (min(dim(x))-1))) →  $V = \sqrt{X^2/nx * (\min(r,c)-1)}$ 
```

X-squared

0.1190402

→ Effect size/ Cramer's V

Appendix 6.

Semantic Preference and Semantic Prosody

Semantic subsets of the co-occurrences of *worry* and their evaluative analysis

Semantic fields	Co-occurrences
<i>Causes/Effects of the emotion</i>	Anxiety [54], cause [41], fear [40], source [32], reason [15], problem [14], shyness [13], anger [12], school [11], began [15], cause (verb) [15],
<i>Face/ Facial expressions</i>	Face [69], eyes [46], (worry) lines [33], voice [25], look [19], brow [14], forehead [11], expression [10], expressed [24], creased [12]
<i>Experiencer of the emotion</i>	People [62], parents [28], mother [23], children [17], father [13], Americans [12], family [12], kids [12], child, children [10], old [9], young [14], elderly [5], parental [5]
<i>Amount/size/quality/ duration of the emotion</i>	Lot [45], measure [23], part [15], level [14], dimensions [12], degree [10], percent [10], bit [9], increased [12], share [11], big/biggest [133/97], new [49], major [41], great [21], little [17], serious [16], high [10] small [10], increased [7], long [6], wide/widespread [6], enormous[5], long-term, [5],
<i>Medicine/ Psychosomatic</i>	Health [27], stress [23], mind [20], heart [16], pain [16], sense [16], tension [13], disease [11], cure [9], felt [29], feel [12], sick [30], frantic [11], negative [11], toxic [10], excessive [9], nagging [9], crazy [8], pathological [6], psychological [6], cancer-specific [5], chronic [5], taut [5]
<i>Time/ Points of time</i>	Just [36], only [36], also [35], always [35], never [17], again [11], often [11], sometimes [10], today [10], tonight [8], once [7], ever [4], later [4]
<i>Sensations</i>	See/saw [24/12], feel [12], hear [9],
<i>Natural environment/ natural phenomena</i>	World [27], life [13], day(s) [12], waves [12], water [11], air [10], night [10], etch [12], growing [16],
<i>Physical objects</i>	Beads [25], things [21],
<i>Economy/Politics</i>	Work [20], freedom [20], money [19], Government [12], President [12], war [11], business [10], market [10], country [9] work (verb) [8], free [23], financial [21], social [17], political [9], federal [7], economic [6], left-wing [6], future [6], military [5],
<i>Verbs of uncertainty</i>	Would [91], could [62], might [44], may [43], should [25], seemed [13],
<i>Transformation of the Experiencer</i>	Changing [27], getting [19], become/became [18], making [13] filled with [12], afraid [4], quiet [4]
<i>Acts of (not) delivering</i>	Consume [10], take/taking [8], give [8], keep [8], bring/brought [7],
<i>Evaluative aspects – POS/NEG semantic prosody</i>	
<i>POS +</i>	Getting [19], freedom [20], happy [24], free [23], good [23], health [27],

	mind [20], heart [16], cure [9], social [17], give [8], bring/brought [7]
<i>NEG –</i>	Cause [41], cause (verb) [15], problem [14], anger [12], anxiety [54], shyness [13], stress [23], pain [16], tension [13], disease [11] sick [30], frantic [11], negative [11], toxic [10] nagging [9], pathological [6], cancer-specific [5], chronic [5], never [17], serious [16], war [11], military [5], should [25], might [44], would [91], could [62], afraid [4], work [20], money??[19], take/taking [8],

Semantic subsets of the co-occurrences of *anxiety* and their evaluative analysis

Semantic fields	Co-occurrences
<i>Causes/Effects of the emotion</i>	Fear [287], mathematics/math [261/91], performance [235], test [188], separation [176], problems [108], source [101], anger [92], guilt [73], frustration [72], effects [60], perfectionism [55], uncertainty [53], confusion [52], hostility [52], school [48], irritability [44], concern [37], sadness [36], cause/ caused [81], fear (verb) [75],
<i>Medicine/ Psychosomatic/ Psychology</i>	Depression [1162], stress [334], disorder [330], symptoms [196], pain [108], panic [102], mood [95], sense [93], tension [87], physique [61], insomnia [60], patients [60], treatment [48], depressive [43], health [38], distress [38], heart [36], relieve [64], suffer [64], help [63], alleviate [40], ease [42], suffering [37], overcome [33], coping [28], treat [26], cognitive [445], somatic [397], physical [52], emotional [45], sexual [45], chronic [41], psychological [39], mental [35], acute [31], clinical [28], phobic [28], nervous [23], psychosomatic [24], debilitating [16]
<i>Experiencer of the emotion</i>	Students [139], people [132], children [117], patients [60], child [48], women [46], group/groups [43], parents [42], participants [36], parental [36], Americans [31], male [25], young [21] filial [20],
<i>Racism</i>	Race [46], black [43], white [21], post-race [17],
<i>Amount/size/quality/ duration of the emotion</i>	Levels [412], lot [148], scores [141], intensity [105], measures [97], reduction [88], results [53], statistics [49], direction [55], scales [37], reduce [161], include [49], based [31], called [29], high [279], lower [115], great [114], increased [86], significant [84], low [77], negative [77], heightened [41], deep [41], full [38], extreme [37], little [37], positive [36], intense [31], multidimensional [25], effective [23], good [23], important [23], tremendous [19], small [18], elevated [17], decreased [16], negatively [30], positively [23],
<i>Natural Phenomena</i>	Life [48], pressure [39], death [38], growing [31], existential [21], day [21],
<i>Economy/ Politics</i>	Attacks/attack [104], inventory [94], management [49], control [48], social [277], competition [60], competitive [206], economic [87], precompetitive [81], public [45], pre-competition [36], financial [19], fraud [19], fraught [19],
<i>Sports</i>	Athletes [78], sport [67], competition [60], participants [36], competitive

	[206] precompetitive [81], pre-competition [36], athletic [19],
<i>Sensations</i>	Feeling [38], arousal [37], feel [107], see [43], perceived [26], emotional [45],
<i>Verbs of uncertainty</i>	May [254], would [125], could [104], might [57], should [49], seems [32], predicted [28],
<i>Time/ Points of time</i>	Often [95], only [88], now [59], then [57], again [30], sometimes [28], always [26], never [26], finally [22], usually [19], once [15], later [11], recently [11],

<i>Evaluative aspects – POS/NEG semantic prosody</i>	
<i>POS +</i>	treatment [48], health [38], heart [36], relieve [64], help [63], alleviate [40], ease [42], overcome [33], coping [28], treat [26], include [49], great [114], increased [86], positive [36], intense [31], good [23], important [23], tremendous [19], elevated [17], decreased [16], positively [23], life [48],
<i>NEG –</i>	Fear [287], problems [108], anger [92], guilt [73], frustration [72], uncertainty [53], confusion [52], hostility [52], irritability [44], concern [37], sadness [36], cause/ caused [81], fear (verb) [75], depression [1162], stress [334], disorder [330], pain [108], panic [102], tension [87], insomnia [60], patients [60], depressive [43], distress [38], suffer [64], help [63], suffering [37], chronic [41], acute [31], clinical [28], phobic [28], nervous [23], debilitating [16], patients [60], race [46], black [43], white [21], post-race [17], death [38], attacks/attack [104], fraud [19], fraught [19], would [125], could [104], might [57], should [49], never [26], reduction [88], reduce [161], negative [77], decreased [16], negatively [30], competitive?? [206]

Semantic subsets of the co-occurrences of *euphoria* and their evaluative analysis

Semantic fields	Co-occurrences
<i>Causes/Effects of the emotion</i>	Effect [5], energy [4], fear [4], confusion [3], control [3], exhaustion [3], relaxation [3], danger [2], fear (verb) [4], triggered [4], causing/caused [2],
<i>Medicine/ Psychosomatic/ Psychology</i>	Drug [8], depression [5], brain [5], relief [4], anguish [3], alcohol [3], pain [3], panic [3], AIDS [3], induce [5], spread [6], emotional [2], manic [2], physical [2],
<i>Economy/ Politics</i>	War [13], victory [9], country [7], crisis [5], freedom [5], company [4], liberation [4], market [4], stock/ stocks [4], success [4], democracy [3], election [3], glasnost [3], government [3], investor/ investors [3], revolution [3], consumers [2], collapse [2], demise [2], produce [5], winning [4], bordering [3], account [2], national [7], political [6], postwar [6], public [5], economic [4], western [4], democratic [3], post-cold-war

	[3], social [3], financial [2], foreign [2], fiscal [1],
<i>Experiencer of the emotion</i>	People [11], fans [4], Mr. [3], Americans [3], consumer [2], Germans [4]
<i>Time/ Points of time</i>	State [20], moment [14], time [10], period [8], end [6], days [6], morning [6], week [5], future [3], month [3], year [3], beginning [2], last [10], started [5], immediate [3], brief [2], perpetual [2], now [9], never [4], suddenly [4], often [3], ago [3], today [3], always [3], initially [2], began [4], initial [37], early [15], temporary [5], frequently [1]
<i>Sensations</i>	Sense [30], feeling [24], mood [7], happiness [3], joy [3], loss [3], optimism [3], bliss [2], felt [9], feel [8], tempered [5], giddy [3], happy [3], agitated [2], drunken [2], lightheaded [2], nervous [2], happily [2],
<i>Natural phenomena/ natural environment</i>	Air [8], way [8], wave [6], world [6], street [4], atmosphere [4], growth [3], night [3], rush [3], bubble [2], burst [2], swept [9], surrounding [5], washed [4], evaporated [3], flooded [3], short-lived [7], nuclear [3], growing [2],
<i>Amount/size/quality/ duration of the emotion</i>	Bit [7], part [3], share [4], high [11], mild [9], new [8], great [7], short [6], little [5], cold [4], clear [3], calming [3], hard [3], intense [3], large [3], complete [2], difficult [2], extreme [2], loud [2], reduced [2], romantic [2], serious [2], total [2], tremendous [2], unalloyed [2], warm [2], wonderful [2], fizzy [2], whole [2], perfectly [2], long [2],
<i>Verbs of uncertainty</i>	Would [13], could [8], may [7],

<i>Evaluative aspects – POS/NEG semantic prosody</i>	
<i>POS +</i>	energy [4], relaxation [3], victory [9], freedom [5], liberation [4], success [4], winning [4], social [3], happiness [3], joy [3], optimism [3], bliss [2], giddy [3], happy [3], agitated [2], drunken [2], lightheaded [2], happily [2], mild [9], new [8], great [7], calming [3], romantic [2], tremendous [2], unalloyed [2], warm [2], wonderful [2], perfectly [2],
<i>NEG –</i>	fear [4], confusion [3], exhaustion [3], danger [2], fear (verb) [4], causing/caused [2], depression [5], anguish [3], pain [3], panic [3], AIDS [3], manic [2], War [13], crisis [5], collapse [2], demise [2], never [4], loss [3], tempered [5], nervous [2], cold [4], difficult [2], reduced [2], serious [2],

Semantic subsets of the co-occurrences of *excitement* and their evaluative analysis

Semantic fields	Co-occurrences
<i>Causes/Effects of the emotion</i>	Energy [84], enthusiasm [62], danger [21], school [19], cause [17], community [17],
<i>Amount/size/quality/</i>	Lot [178], level [68], part [44], bit [31], lack [23], color [22], degree [16],

<i>duration of the emotion</i>	mix [16], add [46], create [47], share [44], mounting [19], new [171], great [133], little [76], high [70], full [69], big [28] tremendous [28], good [26], palpable [24], old [24], intense [23], small [21], bright [17], pure [16], whole [14], fresh [14], young [13], hard [12], huge [12], strong [12], enormous [11], special [11], bad [8], blue [8], rising [8],
<i>Sensations</i>	Sense [141], fun [62], joy [53], pleasure [45], interest [40], rush [38], feeling [33], thrill [32], wonder [32], passion [31], hope [30], desire [25], romance [23], pride [22], tension [22], feelings [20], curiosity [19], relief [18], surprise [18], felt/feel [161/103], hope [21], trembling [18], nervous [35], giddy [30], fun [11], pleasant [9], erotic [8], well [23],
<i>Face/ body parts</i>	Eyes [126], voice [114], face [45], heart [41], hands [21], body [18], breathless [19],
<i>Economy/ Politics</i>	Social [24], political [12], public [11], national [9],
<i>Experiencer of the emotion</i>	People [87], students [42], children [28], crowd [25], Mr. [22], fans [21], man/men [20], child [15], human [10],
<i>Natural phenomena/ natural environment</i>	Air [76], life [73], world [27], wave [22], space [16], flushed [31], grew [24], bubbling [18], growing [41], alive [19], hot [9], dark [9] cold [9], electric [9], exotic [9], natural [8],
<i>Time/ Points of time</i>	Time [58], day [43], moment [40], night [39], years [23], future [15], began [24], passed [18], initial [43], sudden [12], early [11], recent [10], now [85], never [39], always [38], today [25], often [19], sometimes [15], once [14], soon [12], finally [11], suddenly [11], ever [10], later [8],
<i>Movement</i>	Went [23], ran [20], coming [19], go [24], come [30],
<i>Urbanity/ buildings</i>	Building [34], work [35], city [28], room [24], build [40], surrounding [34], home [12],
<i>Transformation of the Experiencer</i>	Turned [31], seemed [30], got [28], found (oneself in a state of..) [27], getting [25],
<i>Verbs of uncertainty</i>	Could [140], would [93], may [28], might [27]

<i>Evaluative aspects – POS/NEG semantic prosody</i>	
<i>POS +</i>	Energy [84], enthusiasm [62], new [171], great [133], tremendous [28], good [26], intense [23], bright [17], pure [16], fresh [14], young [13], huge [12], strong [12], enormous [11], special [11], joy [53], pleasure [45], interest [40], passion [31], hope [30], desire [25], romance [23], pride [22], curiosity [19], relief [18], giddy [30], fun [11], pleasant [9], erotic [8], well [23], alive [19], hot [9], future [15],
<i>NEG –</i>	Danger [21], cause [17], lack [23], old [24], bad [8], nervous [35], dark [9], cold [9], never [39], could [140], would [93], may [28], might [27]

10.1 Abstract (English):

In this paper, I propose a corpus-based approach to the investigation of conceptual and semantic aspects in the field of linguistic expression of emotional concepts, in particular the near-synonymous target domains *worry & anxiety* and *euphoria & excitement*. As pioneering linguists in the area of cognitive linguistics (Lakoff and Johnson 1980, Kövecses 2000) have established in their theory of the conceptual metaphor (CMT), human use and understanding of metaphorical language is governed predominantly by non-literal correspondences that structure people's concepts (Lakoff&Johnson 1980: 7). These conceptual metaphors are claimed to be grounded principally in bodily experience, an assertion that is essentially relevant to the domain of emotions. Given that it is assumed that abstractions are predominantly conceptualized via concrete terminology, this study aims to investigate this supposition by quantitatively comparing metaphorical patterns and expressions of the aforementioned emotion nouns. "Following the current trend of corpus approaches to metaphor analysis" (Rojo López, Orts Llopis 2010: 3300), among them *Metaphorical Pattern Analysis* (Charteris-Black 2001; Stefanowitsch and Gries 2006; Oster 2010), this examination is based on one of the largest freely available corpora, the *Corpus of Contemporary American English* (COCA). The results of the study clearly demonstrate that corpus-based approaches to emotion words offer a number of advantages. First and foremost, the opportunity to explore the (immediate) surroundings of the search items in a considerably vast amount of text, provides the researcher with evidence of conceptual metaphor and metonymy (cf. Oster 2010: 755). The study is also enriched via the addition of a further dimension, in this case the semantic and evaluative aspects of the respective emotion words. Another advantage lies in the possibility of quantifying the results, which is fundamental for comparing the respective frequencies and productivity, as well as the general use of individual metaphors and metonymies (cf. Oster 2010: 755). This fact is of particular importance in investigations that are dedicated to analyzing more than one search item. The results yielded allow to demonstrate that there are indeed a number of overlaps with respect to the conceptualization of emotions in general, as well as *worry & anxiety* and *euphoria & excitement* in particular. A number of (partially fine-grained) differences were however encountered. Regarding the semantic and evaluative analyses, it may be stated that the resultant findings turned out to be similar. As a consequence, this paper partly supports a revolution in the viewing of synonymous words in language as well as opening a new dimension on looking at emotion terms that are not considered to be basic emotions.

10.2 Zusammenfassung Deutsch

Die vorliegende Diplomarbeit präsentiert eine konzeptuelle und semantische Corpus-Analyse von zwei jeweils nah-synonymen emotionalen Wortpaaren. Diese sind im Speziellen *worry & anxiety* und *euphoria & excitement* (*Sorge & Besorgnis* und *Euphorie & Aufregung*). Die Untersuchung basiert auf der Theorie der konzeptuellen Metaphern (Conceptual Metaphor Theory – CMT), welche sich seit etwa drei Jahrzehnten im Bereich der kognitiven Linguistik sowie der Psychologie etabliert hat.

Ausschlaggebend dafür war die Veröffentlichung von Lakoff & Johnson's innovativer Monografie *Metaphors we live by* (1980). Die Neuheit dieses aussagekräftigen Werkes liegt vor allem in der Erkenntnis, dass die alltägliche menschliche Sprache von metaphorischen Konzepten dominiert wird, was wiederum in Opposition zu vorherigen Meinungen steht. Letztere fundierten in der Annahme, dass es sich bei Metaphern und Metonymien um rein linguistische Phänomene handelt, deren prinzipieller Zweck es ist, literarische Werke mit figurativen Ausdrücken zu dekorieren. Die Tatsache, dass im humanen Sprachverständnis bestimmte Konzepte, vor allem Abstrakta, via Verbalisierung durch konkrete Terminologie begrifflich erfasst werden, stellte dabei eine revolutionäre Entdeckung dar. Später bauten Sprachwissenschaftler, wie beispielsweise Kövecses (1989, 1990, 2000, 2005, 2010) auf dieser Theorie auf und lieferten dabei wiederum neue Einsichten in die kognitive Sprachpsychologie. Kövecses untersuchte vor allem die Konzeptualisierung von Emotionen, welche aufgrund der Tatsache, dass es sich dabei um abstrakte Konzepte handelt, dazu tendieren, durch Konkreta im menschlichen Verstand verankert zu sein. Seine Investigationen beschäftigten sich jedoch überwiegend mit sogenannten *basic emotions* (grundlegenden Emotionen), beispielsweise *Angst*, *Zorn*, *Zufriedenheit*, *Traurigkeit*, *Lust*, *Liebe* und *Besorgnis*. Da besagte Emotionen bereits ausreichend in der Literatur behandelt worden sind, wurde für das Thema der vorliegenden Diplomarbeit ein anderer Blickwinkel gewählt. Auf der einen Seite handelt es sich bei den vier analysierten Konzepten nicht um Grundemotionen; eine weitere Neuheit basiert zusätzlich auf der Tatsache, dass jeweils synonyme Paare examiniert werden, was wiederum relevante Einblicke in die Komplexität dieser Wortkategorie bringt.

Wie bereits erwähnt, handelt es sich in der vorliegenden Diplomarbeit um eine corpus-basierte Studie. Seit der weitläufigen und freien Verfügbarkeit elektronischer Corpora hat sich der Bereich der Corpus-Linguistik als ein wesentliches Forschungsfeld in der Sprachwissenschaft im Allgemeinen und der kognitiven Linguistik im Speziellen etabliert. Gegenüber traditionellen introspektiven

Methoden, bei welchen Metaphern entweder durch mündliche Befragungen oder der manuellen Untersuchung einer Vielzahl von Texten extrahiert werden, bieten Corpora eine Reihe an Vorteilen. Auf der einen Seite können Suchfunktionen auf solche Weise gewählt werden, dass nur die unmittelbare (und damit relevante) Umgebung des Suchbegriffes analysiert wird; auf der anderen Seite vereinfachen Corpora sowohl semantische als auch pragmatische Untersuchungen (cf. Oster 2010: 755). Daraus resultiert, dass sich die folgende Studie nicht nur mit der metaphorischen Konzeptualisierung der jeweiligen Emotionen befasst, sondern zusätzlich noch die Aspekte der *Semantischen Präferenz* (semantic preference) und *Semantischen Prosodie* (semantic prosody) miteinbezieht. Auf diese Weise werden eine Vielzahl von innovativen Einblicken in das komplexe Phänomen der emotionalen Welt geboten.

Die vorliegende Arbeit ist in 2 Hauptteile gegliedert. Der erste Teil (PART I – Theory Review) befasst sich mit einer ausführlichen Diskussion der existierenden Literatur zu den Themen der Theorie der konzeptuellen Metaphern, der neuralen Verkörperung der Emotionen sowie semantischen und pragmatischen Aspekten und Synonymität. Teil Zwei (PART II – Empirical study: Presentation, Analysis and Interpretation of the Results) behandelt zuerst die Wahl des geeigneten Corpus und weiters die für die Enthüllung der einzelnen Metaphern optimale Methode. Letztere basiert auf der von Stefanowitsch (2006: 371ff.) entwickelten *metaphorical pattern analysis* (MPA), wobei die unmittelbare Umgebung (n-gram mit n=4) des lexikalischen Zielbegriffes (lexical target domain) nach metaphorischen Kollokationen untersucht wird und sich daraus entsprechende Ursprungsdomänen (source domains) ableiten lassen. Kapitel 6 beinhaltet systematische separate Analysen der einzelnen Emotionen, gefolgt von konzeptuellen Vergleichen der jeweiligen Synonyme und einer Präsentation aussagekräftiger Ähnlichkeiten und Unterschiede, welche in Bezug auf alle vier Termini aufgedeckt wurden. Weiters behandelt dieses Kapitel die Fragestellung ob bestimmte Metaphern stärker mit partikularen Emotionen assoziiert sind oder von den jeweiligen Nomen dis-assoziieren, das heißt, in nicht so enger Verbindung mit diesen stehen. Im Kapitel 7 widme ich mich sowohl den semantischen Feldern, welche von den jeweiligen Termini bevorzugt werden, als auch den dadurch entstehenden positiven oder negativen Konnotationen. Abgerundet wird die Arbeit mit einer ausgewogenen Conclusio, welche sowohl die Einschränkungen als auch die gewonnenen Erkenntnisse der Studie behandelt.

10.3 Index of Tables

Table 1. Metaphorical source domains (SD) of the emotion concept *worry*, ranked by frequency of occurrence

Table 2. The ten most frequent co-occurrences of *worry*

Table 3. Metaphorical source domains (SD) of the emotion concept *anxiety*, ranked by frequency of occurrence

Table 4. The ten most frequent co-occurrences of *anxiety*

Table 5. The 3 most prominent source domains (SD) of *worry&anxiety* and their absolute and relative frequencies (in %)

Table 6. The 6 overlapping conceptual mappings found for *worry&anxiety*

Table 7. Metaphorical source domains (SD) of the emotion concept *euphoria*, ranked by frequency of occurrence

Table 8. The ten most frequent co-occurrences of *euphoria*

Table 9. Metaphorical source domains (SD) of the emotion concept *excitement*, ranked by frequency of occurrence

Table 10. The ten most frequent co-occurrences of *excitement*

Table 11. The 3 most prominent source domains (SD) of *euphoria&excitement* and their absolute and relative frequencies (in %)

Table 12. The seven congruent conceptual mappings found for *euphoria&excitement*

Table 13. The most frequent conceptual metaphors of *worry&anxiety* and *euphoria&excitement*

Table 14. Conceptual metaphors shared by two or more emotions

Table 15. Expected frequencies, *Pearson's Qui Square test* and *p-value*

Table 16. Person residuals correlating between emotions and conceptual metaphors

Table 17. POS and NEG evaluation of the emotion *worry*

Table 18. POS and NEG evaluation of the emotion *anxiety*

Table 19. POS and NEG evaluation of the emotion *euphoria*

Table 20. POS and NEG evaluation of the emotion *excitement*

10.4 Curriculum Vitae – Lebenslauf

Persönliche Daten

NAME	Sajtos
VORNAME	Elisabeth
GEBURTSTAG/-ORT	30. Oktober 1990 / Linz
EMAIL	elisabeth.sajtos@gmx.at

Schulischer Werdegang

1997-2001	Adalbert Stifter Praxisvolksschule, Linz
2001-2009	Gymnasium und Realgymnasium Kollegium Aloisianum, Linz
2009	Abschluss der österreichischen Matura mit ausgezeichnetem Erfolg
2009-2014	Studium an der Universität Wien (Lehramtsstudium UF Englisch UF Spanisch)

Berufserfahrungen

Jul/Aug 2009	Au-pair in Orange County, CA
Sept 2011	Ferialjob Schülerhilfe Leonding bei Linz
Jan 2014-Dez 2014	Lern-und Integrationshilfe im „Romano Centro Wien“

Besondere Weiterbildung

2012-2013	13-monatiger Auslandsaufenthalt in Aveiro (Portugal) im Zuge eines Campus Europae Auslandsjahres Zahlreiche Sprachaufenthalte in Englisch- und Spanischsprachigen Ländern während der Sommermonate
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