Polysemy in Natural Language:
Case Studies on the Structural Description
of Polysemous Lexemes in English, German and Turkish

by

Burcu Ilkay Karaman

Thesis submitted in fulfilment of the requirement of the degree of Doctor of Philosophy

November 2003

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ABSTRACT

Meaning seems at once the most obvious and the most obscure aspect of language to be studied. Since most lexical items have several meanings the rules which combine them into sentences will frequently yield several possibilities for interpretation. Potential ambiguity is usually resolved unconsciously in speakers' minds, but may occasionally cause an obstacle in communication, and has therefore been considered a deficiency of language. One of the goals of linguistic research is to illuminate the processes which occur in speakers' minds by studying the organisational structure of concepts and the interrelations between them.

The aim of this study is to describe the structural properties of lexical items with multiple meanings, in particular polysemous lexemes, by means of three case studies in English, German and Turkish.

The first case study explores paradigmatic sense relations of identity and inclusion (vertical relations). The study involves structural comparison between the nets of each of the senses of a polysemous lexeme in English in contrast with its corresponding forms and senses in German and Turkish. Findings suggest that communicative problems can arise due to intra-domain specific ambiguity.

The second case study involves the structural description of a polysemous lexeme in German. Theories of paradigmatic sense relations of opposition and exclusion (horizontal relations) are used to investigate sense opposition at the micro-level which is a specific phenomenon in polysemy. Unlike the first case study, collocational patterns are focused on by looking into syntagmatic sense relations. Results show that theories of sense opposition at the macro-level are applicable to sense opposition at the micro-level.

The third case study also deals with the structural description of a polysemous lexeme, this time in Turkish. Besides the description of some disambiguation processes, the study demonstrates that sense opposition at the micro-level exists in Turkish, and that relevant theories are applicable just as in German.

Türk dili Türk milletinin kalbidir, zihnidir. Dünyada her kavmin mevcudiyeti, kıymeti, hürriyet ve istiklal hakkı, sahip olduğu ve yapacağı medeni eserlerle mutenassiptir. Medeni eser meydana getirme kabiliyetinden yoksun olan kavimler hürriyet ve istiklallerinden soyunmaya mahküm durlar.

Gazi Mustafa Kemal, 1930
ACKNOWLEDGEMENTS

A thesis owes a great deal to a great many people: to those whose work is explicitly presented and discussed, and to those many others who have contributed their share to its development and production.

I am especially indebted to Richard J. Janes, Dr. Mike Ryall, Dr. Alan Packwood and Saprava Bhattacharia who have helped so greatly in producing the hierarchical structures for Case Study 1, to Sandra Kremer, Barbara Rassi, Birgit Ahola, and Gaby Thomson-Wohlgemuth for their contribution to the componential analysis in Case Study 2, and to Dominic Senior, Charles McMaster, Natalie Artemas-Polak for their valuable comments and contribution to the componential analysis in Case Study 3.

I also would like to thank Lee Gillam and Gary Dear from the Department of Computing, University of Surrey, for their technical support and excellent guidance in enabling me to use System Quirk for Case Study 1. I am extremely grateful to the Research and Development Unit for English Studies at the University of Liverpool, whose ingenious invention of the On-line linguistic tool WebCorp, designed for public access, had great importance in the completion of Case Study 2.

I am also extremely grateful to my mother for her suggestions and advise on the Turkish examples in Case Study 3, and overall, for her patience, guidance and support throughout my studies in England which commenced in May 1996 leading to a Master’s degree in Translation Studies and the recent research study in Linguistics.

I would like to thank Cathy Pyle and Irene Olearnik from the Language Teaching Centre for reading some parts of the manuscript with a particular eye on the use of the English language.

I also wish to thank the German Section of the School of Arts for their generous financial support to enable me to cover the expenses to attend linguistic colloquiums in Ljubljana/Slovenia, Jena/Germany and Paris/France, the School of Arts for awarding me with travel allowances to attend all three conferences.

I am very much indebted to the Turkish Ministry of Education for their generosity in providing me with a financial loan to undertake this research study.

Also, special thanks to Mike Thacker, Director of the Language Teaching Centre, for allowing access to departmental facilities; his support extended well beyond what can be expected from a boss.

Finally, I would like to thank Prof. Peter R. Lutzeier.
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<td>Appendix</td>
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<td>Brockhaus Wahrig Deutsches Wörterbuch</td>
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<td>Card games</td>
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<td>Organic chemistry</td>
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<td>Civil engineering</td>
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<td>CS</td>
<td>Case Study</td>
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<tr>
<td>figr</td>
<td>Figurative speech</td>
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<td>FOLDOC</td>
<td>Free On-Line Dictionary of Computing</td>
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<td>Geography</td>
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<td>Naval architecture</td>
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<td>Organic chemistry</td>
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<td>Opposite Sense</td>
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<td>Sense</td>
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<td>SDCE</td>
<td>Starfleet Database Central Europe</td>
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<td>SYN</td>
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<td>TL</td>
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<td>TS</td>
<td>Türkçe Sözlük [monolingual Turkish Dictionary]</td>
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<td>Verb</td>
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<td>weav</td>
<td>Weaving</td>
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<tr>
<td>WDDG</td>
<td>Wörterbuch der deutschen Gegenwartssprache</td>
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<thead>
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<th>Description</th>
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<td>∈</td>
<td>Element-of symbol (e.g. &quot;... is an element of a set ...&quot;)</td>
</tr>
<tr>
<td>∉</td>
<td>Not-element-of symbol (e.g. &quot;... is not an element of ...&quot;)</td>
</tr>
<tr>
<td>∀</td>
<td>Universal quantifier for &quot;For all ...&quot;, &quot;For every ...&quot;</td>
</tr>
<tr>
<td>#</td>
<td>Quantity unknown</td>
</tr>
<tr>
<td>Ø</td>
<td>Zero value</td>
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1.1. The COGNITIVE ASPECT of LINGUISTICS and the STRUCTURE of LANGUAGE

Moving through the world speakers of a language find themselves surrounded by several different phenomena. In order to achieve communication, the experience of the world and the way it is perceived and conceptualised is associated with the speaker's cognition and his/her choice of certain lexical units. These lexical units are expressed through sounds and symbols, and by means of set rules existing in a language system. In terms of langue, lexicon
is regarded as being one of the basic components of a language. It comprises words and fixed phrases (i.e. idioms) as fundamental units to refer to mental objects as well as to the outside world and reality, i.e. thoughts, objects, organisms, the experience being made with these and the effects resulting. According to Cabré, "the lexicon of a speaker has been defined as the set of lexical units containing phonological, morphological, syntactic and semantic information, the appropriate set of word formation and readjustment rules, the set of possible projections on syntactic structures and a set of restrictions on rule application" (1999:29). It is indeed the focal point of lexicology to study the lexicon as a set of systems with its regularities and irregularities and "to construct a model of the lexical component of a language which includes speakers' implicit knowledge of words and their use as well as systematic and appropriate mechanisms to connect the lexical component with the other grammatical components" (Cabré, 1999:30).

It is, however, also of importance to mention the fact that speakers of a language do not restrict their knowledge of lexical units to the linguistic domain. This means that besides the semantic content of a lexical unit, or in other words the concept that it represents, there is also the notion of extra-linguistic information in every word. This makes the language not only interesting in terms of its linguistic features but also in terms of its encyclopaedic characteristics.

Lyons states that "words cannot be defined independently of other words that are (semantically) related to them and delimit their sense. Looked at from a semantic point of view, the lexical structure of a language - the structure of its vocabulary - can be regarded as a network of sense relations: it is like a web in which each strand is one such relation and each knot in the web is a different lexeme" (1995:102). Parallel to Lyons' view, Cabré points out that "a word is not an isolated unit within the set of lexical units of a system, but is closely tied to the other units of the same level that constitute the lexical system of a language" (1999:30). Having said that, one can possibly imagine the lexicon as a "system of systems"
(Lutzeier, 1995:15), where each lexical unit represents the centre of a network that has relationships with other lexical units: "Unter der gleich noch zu rechtfertigenden Annahme, daß die jeweiligen Wortschatzausschnitte in sich strukturiert - also Systeme - sind, und der wohl plausiblen Annahme, daß die Gliederungsprinzipien selbst in eine gewisse Ordnung gebracht werden könnten - also ebenfalls ein System bilden -, kommen wir zu einer komplexen Vorstellung des Wortschatzes: Der Wortschatz einer natürlichen Sprache bildet ein System von Systemen" (ibid). 

It is here the lexicologist's task to investigate this complex network and to construct the lexical system from different angles.

1.2. An OVERVIEW of the RESEARCH

Studies to be carried out in this work will have the aim to provide the reader with a broad range of aspects of theoretical linguistics and its practicalities. There will be three sets of studies, which we will refer to as case studies, concerning three polysemous lexical items each in the languages English, German and Turkish. All case studies will have English as the meta-language.

Case Study 1 (CS1) will involve the paradigmatic sense relations of identity and inclusion (vertical relations), whereas Case Study 2 (CS2) and Case Study 3 (CS3) will concern paradigmatic sense relations of opposition and exclusion (horizontal relations) and syntagmatic sense relations.

1 For further reading please refer to Section 2.4. The Linguistic Net.

2 Nida defines the term meta-language as “a part of any language which can be used to speak about aspects of the language itself.” He continues to give examples: “[...] terms such as noun, verb, adjective, etc. are part of the grammatical metalanguage. But for colors there is no readily available set of terms useful in discussing distinctions.” (1975:19).
CHAPTER 1

INTRODUCTION

CS1 can be regarded as comprising the first half of the entire research. It brings emphasis to the preponderance of cognition in communicative context and provides a thorough representation of the structural nature of the polysemous lexeme under scrutiny using several hierarchical structures which are described as paradigmatic sense relations of identity and inclusion (i.e. vertical relations). The study looks not only into the intensional value of an ambiguous concept but includes the importance of its extensional values, such as encyclopaedic information, and the impact of such on communicative situations amongst speakers.

CS2 and CS3 are the two sets of studies which comprise the second half of the research. In both studies, paradigmatic sense relations of opposition and exclusion (horizontal relations) with specific focus on the phenomenon of sense opposition will be looked at. CS2 and CS3 will also involve the study of syntagmatic sense relations and will touch upon issues of disambiguation.

Although the research conducted deals with highly theoretical issues, its practicalities are undeniable. The case studies go beyond their possible contribution to lexicography; other fields of contribution may include machine translation and artificial intelligence. As Kooij explains the situation: “The discussion of ambiguity as a deficiency of the system of natural languages has frequently led to a comparison between natural language in this respect; also, to a comparison between natural language and other forms of communication: planned auxiliary languages, or formal languages like machine languages, or the calculi of mathematical logic. That natural language compares unfavorably to such systems has almost become a commonplace, since one of the goals in devising such a formal system is to define it unambiguously” (1971:3).
1.3. The STRUCTURE of this THESIS

This thesis deals with three small scale studies, which we will refer to as Case Study 1, 2 and 3. It consists of seven chapters as outlined below:

Chapter 2 of this thesis starts with a literature review, which deals with the study field of lexicology as an independent discipline of linguistics and its relation to other linguistic disciplines, such as lexicography, terminology and terminography. It also provides information on word forms and senses and describes lexical ambiguity in natural language by reflecting on the issues of polysemy and homonymy. The literature review continues with the description of language consisting of a 'system of systems' resembling a network, thereby focusing on paradigmatic and syntagmatic sense relations. It also provides information on the phenomenon of sense opposition, known as Gegensinn\(^3\), a particular incidence of lexical ambiguity. Finally, the chapter concludes with some reflection on word fields (i.e. hierarchical structures), and lexical decomposition.

Chapter 3 gives details on the methodology applied, the corpora selected and the tools used for the extraction of keywords, i.e. lexemes to be placed under scrutiny. It also deals with the research questions and hypotheses.

Chapter 4 deals with the analysis and discussion of the results concerning Case Study 1 (CS1), which consists of a broad study of paradigmatic sense relations of identity and inclusion (vertical relations) with focus on the lexeme BRIDGE (eng/h). The chapter starts with a description of each phase of the analysis. The purpose of the study is to reflect the intensional values of a polysemous lexeme, and to structurally describe its semantic properties.

\(^3\) The term Gegensinn is used by Lutzeier (1997:382, 2001:78) for lexical units which have sense opposition at the intensional level (cf. 2.4.1.2.1. Gegensinn as a Form of Lexical Ambiguity).
Chapter 5 is concerned with Case Study 2 (CS2) which provides details on the analysis and discussion of the keyword AUFGEHEN (ger/v). The chapter starts with a description of each phase of the analysis, followed by a study of paradigmatic sense relations of opposition and exclusion (horizontal relations) with particular attention to the phenomenon of sense opposition. The chapter concludes with the investigation of syntagmatic sense relations where the keyword AUFGEHEN (ger/v) forms the nucleus.

Chapter 6 deals with Case Study 3 (CS3) which, similar to the study conducted in Chapter 5, focuses on paradigmatic sense relations of opposition and exclusion (horizontal relations) and syntagmatic sense relations. This time the lexeme ÇALMAK (tur/v) is under scrutiny. It is known that Gegensinn has been proven to exist in Classical Arabic and German. It would be interesting to see its existence in another language; hence the study investigates Turkish which differs from the other two languages genetically as well as typologically.

Finally, Chapter 7 which includes some important concluding remarks on the issue, provides a summary for each study carried out and suggests further steps with regard to future studies.

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Lexicology as an independent discipline of linguistics and its relation to other related disciplines is an important issue which deserves attention in the literature review section of this thesis. An account will be given of the historical development of lexicology, about its distinction from related linguistic fields and its evolution.

Without dispute, word is the main element in lexicology under constant scrutiny. We will provide a thorough linguistic description of word, clarify the difference between a word
and a term (and of a keyword and a keyterm), and identify the nature of a lexeme which will be used as the generic description for both word and term, since studies carried out deal with lexemes of a polysemous nature whose senses are in some instances from the general language (LGP=Language for General Purposes) and in other instances from special language use (LSP=Language for Special Purposes). When investigating such issues, it will be inevitable to look into the field of cognitive linguistics, since the intensional value of words suggest strong connections to cognition.

Much emphasis will be placed on the context-dependence of words and on encyclopaedic knowledge. The chapter will end with the main focus on certain cases of ambiguity in natural language (including Gegensinn as a form of lexical ambiguity), the role of paradigmatic and syntagmatic sense relations and the reasons for lexical decomposition.

2.1. LEXICOLOGY as a LINGUISTIC DISCIPLINE

Language has been an object of fascination and a subject of serious enquiry for over 2,000 years. The growth of modern linguistics, from the end of the 18th century to present day, has led to investigations into the meaning of words in a systematic and objective way. With it a linguistic discipline gained importance which came to be known as lexicology. However, the

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5 From Greek: λεξίκολογικά (lexiko=word, logy=science of) initially tenuously defined as "die Wissenschaft von Wörtern" ("the science/study of words") (Lutzeier, 1995:2 and 2002b:1), but more extensively as "die Theorie und Praxis der Strukturierungen im Wortschatz" (="theory and practice of the structures of vocabulary") by Lutzeier (1995:1), includes definitions in several dictionaries such as: "die Lehre von den Wörterbüchern" (Kaltschmidt, 1854:105), "Wortschatzwissenschaft" (Paul, 1992:529), "Wissenschaft, die sich mit dem Wortschatz einer Sprache befaßt." (WDDG, 1969:2361), "Bereich der Sprachwissenschaft, der sich mit der Erforschung des Wortschatzes (bes. mit der Struktur des Wortschatzes) befaßt [und die theoretischen Grundlagen für die Lexikographie schafft]" (DUD8, 1994:2118), "Bereich der Sprachwissenschaft, in dem man sich mit Wörtern und anderen sprachlichen Einheiten im Hinblick auf morphologische, semantische und etymologische Fragen befaßt" (DUDF, 1990:456), and "That branch of knowledge which treats of words, their form, history, and meaning." (OXF, 1989:876). The most comprehensive of these would be the definitions of DUD8 and DUDF which closely correspond to current activities in the field. On the other hand, some encyclopaedias treat
CHAPTER 2

LITERATURE REVIEW

subject it represents is very old, reaching back to the Early Ages of Ancient Greece, Rome and India. Philosophers such as Plato and Aristotle were, for instance, the first to debate the nature of meaning, maintaining that there was an intrinsic connection between sound and sense emphasising the arbitrary relationship between words and things - a principle still accepted by many proponents of modern semantics.

The beginning of the 20th century saw a sharp change of emphasis, with the study of the principles governing the structure of living languages being introduced by the Genevan linguist Ferdinand de Saussure. De Saussure’s influence still continues to be fundamental today, with his notion of a language system becoming an important element of research in semiotics and structuralism. Further exponents who share his views on language as being a system were Bloomfield, Firth and Chomsky amongst others.

Lipka states the following on the notion of a language system:

“Lexicology might be defined as the study of the lexicon or lexis (specified as the vocabulary or total stock of words of a language). [...] What is most important, however, is that in lexicology the stock of words or lexical items is not simply regarded as a list of isolated elements. Lexicologists especially consider relations between elements [...] . Lexicology is therefore concerned with structures, not mere agglomerations of words.”

(Lipka, 1992:1)

2.1.1. Elements of Vocabulary

Lutzeier in his paper *The foundations and fundamental questions of lexicology* states that the vocabulary of a language can be understood in three ways (2002b:4):

a) Lexis
b) Mental lexicon
c) Lexicon

Lexis is regarded as the total of all lexical items in a natural language: "Wortschatz als (möglichst) vollständige Ansammlung von Wörtern einer natürlichen Sprache. Hierfür sollte die Bezeichnung 'Lexis' vordringlich reserviert sein" (Lutzeier, 2002b:4). The vocabulary present in an individual's mind is the mental lexicon: "Wortschatz als mentale Speicherung von lexikalischen Einheiten und lexikalischen Informationen beim Individuum. Diese Auffassung ist inzwischen mit der Bezeichnung 'Mentales Lexikon' belegt." (ibid). And, lexicon as a dynamic storage of information which grammar can be assigned to: "Wortschatz als (dynamischer) Speicher von Informationen, auf die die Prozeduren der Grammatik in erster Linie zugreifen. Mit dieser Auffassung ist die Bezeichnung 'Lexikon' verbunden." (ibid).

The notions lexis - mental lexicon - lexicon are closely related to one another as can be seen from the diagram below:
The lexicon is regarded as a segment of the entire vocabulary of a language; in this respect, there exists a relation of correspondence between lexis and lexicon. The procedural orientation, called 'prozedurale Orientierung', indicates that grammar is an element of utterance performing, hence the relationship between lexicon and mental lexicon. The lexis which forms the basis of a language consists of several internal segments. As a result there is a direct correlation between lexis and mental lexicon which is referred to as systematic orientation. The mental lexicon of an individual is used in the production and reception of utterances during which systematic as well as procedural aspects are applied; hence speakers of a language make use of both aspects, which have influence on their mental lexicon (Lutzeier, 2002b: 5-6).
2.1.2. Relation to other Disciplines in Linguistics

Lexicology is a complex scientific field within linguistics. This complexity arises due to the fact that questions related to lexicology have to be investigated from various different angles intra- and extra-linguistically; lexicology touches upon the fields of lexicography, morphology, lexical semantics, grammar, computational linguistics, pragmatics, cognitive linguistics, psycholinguistics, clinical linguistics, graphematics, and phonology/phonetics (Lutzeier, 1995:7, 2002b:7).

Language can be analysed from a lexical as well as a grammatical aspect. In this respect, lexicology is regarded as an ideal research field within linguistics. Considering the fact that lexical units consist of a form and content, morphology and lexical semantics can be seen as the two major disciplines of lexicology, since morphology is concerned with the form and lexical semantics is concerned with the content of a lexical unit. Speakers of a language need effective media in order to create utterances so as to express knowledge stored in their mental lexicon; such media are studied by the disciplines phonology/phonetics and graphematics. Pragmatics, along with psycholinguistics and cognitive linguistics are other major disciplines which are concerned with the performance of the mental lexicon (Lutzeier, 2002b:7).

Lexicology is also the discipline in linguistics which covers lexicography and stylistics, since the format of a dictionary entry is based on lexical information, and the study of lexical variants depends on lexicological information. Besides, grammar is intimately connected with the lexicon in that it studies the rules which govern the creation of utterances and the procedures in the completion of such for communicative purposes. On the other hand, the lexicon itself as a dynamic storage of vocabulary applies grammatical procedures. Lexicology provides also the basis for the implementation of a lexicon as part of speech-productive as well as speech-receptive system in computational linguistics, and for diagnosis and rehabilitation oriented procedures in clinical linguistics (Diagram 2.2) (ibid).
Diagram 2.2. Lexicology and Related Disciplines (Lutzeier, 2002b:7).
2.1.2.1. Lexicography

Mention has been made earlier that a closely related study field to lexicology is lexicography⁶. Here, we need to make a clear distinction between the two fields in order to free lexicology of the misleading conception of dictionary compilation, i.e. lexicography. "Die Vorstellung, dass Lexikologie über den Wortschatz mit lexikalischen Einheiten, insbesondere mit Wörtern zu tun hat, findet man in den Nachschlagewerken und schließlich bei einigen Autoren/Autorinnen, die 'Lexikologie' in den Titeln ihrer Veröffentlichungen führen, bestätigt. Allerdings sind auch immer noch Abgrenzungsschwierigkeiten zu anderen Disziplinen, insbesondere zur Lexikographie als Theorie und Praxis des Schreibens von Wörterbüchern festzustellen." (Lutzeier, 2002b:2).

Rey in his Essays on Terminology reflects on the development of lexicology and lexicography as independent disciplines within linguistics:

"The venerable labour of compiling dictionaries, which became socially significant during the Renaissance when the need arose to relate different languages to each other, was defined, especially during the seventeenth century in Spain, Italy, France and England, as the self-regulatory description of a language. In the century of philosophers and especially after the scientific revolution of the early nineteenth century, dictionary-making initially gave rise to dispersed reflections which gradually tended towards instituting a separate discipline, called lexicography. [...] Meanwhile, lexicology, freed of the concrete concerns of the dictionary-maker, took on a new life. [...] Linguists wanted to describe the entire system, even when its parts only exhibited limited regularities, which obviously the case for the lexicon - as demonstrated by the research of dialecticians, ethnologists and post-Saussurian European scholars mindful of semantics. Finally, logic and philosophy of language have constantly stressed the problems associated with designation, naming, 'reference' (the relation of the signs of language to the world of objects) the core of which is constituted by lexicology."

(Rey, 1995:125-126)

What Rey is writing about is the separation and evolution of both lexicology and lexicography. While he finds it easy to define lexicography, namely by reference to 'dictionary', as more of a pragmatic than a theoretical concept, he correctly points out that the definitions of 'lexicology' diverge, as it is a largely interdisciplinary field, connected to linguistics but going beyond it by exceeding the linguistic boundaries (ibid).

Dorozewski contributes to the discussion of the difference between lexicology and lexicography as follows:

"If we confine ourselves for the time being to the definitions formulated above, according to which lexicography is 'the composing of dictionaries, the science of methods of composing dictionaries', and lexicology is 'that branch of linguistics investigating words as regards their meaning and use; the science of vocabulary; the theoretical scientific basis of lexicography', we shall be able to draw two conclusions: the first is that both the disciplines in question are closely connected with linguistics, and, what is more, the development of linguistics may depend directly on the development of lexicological and lexicographical works; the second is that, as the raison d'être for foundations is what is to be built on them, so in a certain sense lexicography may be considered a superior discipline to lexicology, for results are more important than intentions, and the value of theoretical principles must be estimated according to results. The present epoch is one of integration of linguistics as the theoretical science of language, of lexicology as the science of words and of lexicography as the science of discovering ways of classifying verbal material and presenting it in dictionaries."

(Doroszewski, 1973:36-37)

This brief characterisation of lexicology and lexicography in comparison was necessary for a better understanding of the true nature of lexicology existing as an independent discipline within linguistics.
2.1.2.2. Terminology and Terminography

Having provided an overview of the history and evolution of lexicology and lexicography, it is now necessary to make a distinction between lexicology and terminology, another closely connected discipline to lexicology. In general terms, lexicology and terminology are regarded as two closely related fields in linguistics since both of them deal with words, have a theoretical and applied side, and are concerned with dictionaries (Cabré, 1999: 35). The theoretical side of both sciences is that they deal with the vocabulary of a language, the practical side is that the knowledge on the vocabulary of a language can be applied to the compilation of dictionaries. As dictionaries are basically the reflection of codified vocabularies, inevitably, lexicography and terminography can be seen in relation with lexicology and terminology (cf. Diagram 2.3 below).

![Diagram 2.3 The interrelation between Lexicology/Terminology and Lexicography/Terminography.](image)

When looking into terminology, one realises that the discipline only emerged gradually after the Renaissance due to the problems associated with naming. The name terminology was initially used to designate "an assumedly coherent group of units of designation or terms necessary for and used in connection with a specific technical or scientific activity" (Rey,
In the meantime, however, a new meaning had emerged which had been associated with the already existing meaning of terminology, namely that of "systematic study of terminologies". This new meaning of terminology gained acceptance only in the second half of the eighteenth century (ibid).

One strongly supported view on the study fields of lexicology and terminology is that there is an overlap between the two sciences whereby lexicology can be regarded as wider than terminology including it into its own field (cf. Diagram 2.4 below).

![Diagram 2.4. Lexicology includes Terminology.](image)

This view is based on the fact that terminology uses words out of the general language and is therefore seen as part of it. A good example for the transfer of a lexeme from the LGP (Language for General Purposes) into the LSP (Language for Special Purposes) would, for instance, be BLISTER. Originally, BLISTER is a word in LGP which has come to be
used also in chemistry; especially in the application of paints. It is a metaphorical extension of
the meaning which it actually represents (cf. Table 2.1).

Similarly, words out of a special language can become integrated into the general
language. As Fraas points out: "Der Fachwortschatz einer Sprache wird gemeinhin als
Subsystem des Gemeinwortschatzes gesehen. Zwischen beiden findet ein ständiger
Austausch statt, so daß keine scharfe Grenze gezogen werden kann" (1998:428). For a
lexeme being borrowed from an LSP into the LGP, CLASSICAL MUSIC would represent an
interesting example. As can be seen from Table 2.1 below, the definitions for both senses of
CLASSICAL MUSIC are described in different sub-entries of the Oxford Dictionary of Music
(ODM). This indicates that the original meaning of the lexeme in musicology has seen a slight
shift in the general language by the layperson.

However, there is a third case where a lexical unit represents completely different
senses in both a special language and general language (cf. Table 2.1 below). Another
interesting phenomenon, very different from the above two, would be where a concept is
referred to with two separate lexical entities (Table 2.1, third row from the top). This can be
regarded as a case of synonymy. The reason for the layperson to refer to the same concept
with a different lexical label than the expert lies in that the layperson has no access to the
expert's LGP due to the fact that s/he has no/little knowledge of the subject field concerned.
Also in medicine, as in many other sciences, concepts have been attached to Latin names for
accuracy reasons, and for successful and healthy communication amongst subject experts. A
layperson who has no knowledge of such accurate medical descriptions of concepts in Latin
would by no means be able to refer to these in Latin like the expert unless s/he has received
education and training in the field.

Lexicology and terminology are the two interdisciplinary fields of linguistics (cf. Diagram 2.4) which
are concerned about the LGP and LSP respectively. The dotted lines in the diagram, which surround the
field of terminology, indicate a possible exchange of vocabulary between the LGP and the LSP.
### Table 2.1. The exchange of lexemes between LGP and LSP.

<table>
<thead>
<tr>
<th>BLISTER</th>
<th>LITERATURE REVIEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>A small bubble on the skin filled with serum and caused by friction, burning or other damage. (TNODE, 1998)</td>
<td><strong>BLISTER</strong> a defect in a finished paint film where areas rise away from the underlying surface, caused by lack of adhesion, trapped moisture and heat. (CDST, 1999)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CLASSICAL MUSIC</th>
<th>LGP</th>
<th>LSP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic term meaning the opposite of light or popular music. (ODM, 1999)</td>
<td><strong>CLASSICAL MUSIC</strong> Music composed roughly between 1750 and 1830 (i.e. post-Baroque and pre-Romantic) which covers the development of the classical symphony and concerto. (ODM, 1999)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KNEECAP</th>
<th>LITERATURE REVIEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>The convex bone in front of the knee joint; the patella. (TNODE, 1998)</td>
<td><strong>PATELLA</strong> A triangular sesamoid bone, about 5 cm in diameter, situated at the front of the knee in the tendon of insertion of the quadriceps extensor emoris muscle. (DIMD, 1974)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LSP</th>
<th>LGP</th>
</tr>
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<tbody>
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<td></td>
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</tbody>
</table>
Nevertheless, some claims about the study fields of lexicology and terminology controverse the above stated view. It is said that lexicology and terminology are two distinct domains and should therefore be differentiated (Rogers, forthcoming:6) (cf. Diagram 2.5). This claim relies on the fact that lexicology deals with words in LGP whereas terminology focuses on terms used in LSP.

Diagram 2.5. Lexicology and terminology seen as two distinct subject fields within linguistics.

However, from a linguistic perspective a term cannot be differentiated from a word since a word is described as "a unit characterised by having phonetic (and graphic) form, a simple or complex morphological structure, grammatical features, and a meaning that describes the class to which a specific object belongs" (Cabré, 1999:35). Hence, it can be said that a term is also a unit which has the same features as a word. In his book Semantic Theory Baldinger provides the following example on the complexity of a 'word': "Language consists of a complex and complicated interplay of units with different functions which combine on different levels" (Baldinger, 1980:21).
In his example, Baldinger divides the word, or in his terms the lexie, into analysable smaller units which are meaningful and distinctive:

1 = phonemes (minimal distinctive unit)
2 = morphemes (minimal meaningful units in a closed set)
3 = lexeme (minimal meaningful unit in an open list)
4 = context (syntagmatic framework)

In exactly the same way, it is possible to divide up terms in special languages into meaningful units, except where they are some sort of a 'hybrid' (e.g. G.728 Low Delay CELP as in Electrical Engineering), an abbreviation (e.g. CPU as in computing science), or a non-linguistic element, such as a symbol or formulae (Section 2.4).

It is interesting to note that, in terms of word classes lexicology and terminology are different. Terminology science includes mainly nouns whereas lexicology covers all word classes (Rogers, forthcoming:6). However, this does not necessarily mean that terminology is devoid of other open-class words, such as verbs, adjectives or adverbs; although, this seems rarely the case since the main focus is placed on nominals. Hence, as seen earlier in Diagram 2.4, terminology covers a narrower scope than lexicology. Methods of study in both subject fields are also different in that terminology and lexicology have a reverse trend of looking at the relationship between word and concept. In lexicology first there is the word and then the concept, in terminology however first there is the concept and then the word.

Rey explains it:

"[...] In this way 'terminology' would be reserved for the activities performed in relation to nomenclatures, the domain of naming, designation, i.e. the various semantic processes by means of which the observed or conceived 'realia' are attached to linguistic signs and thus to units of the lexicon, after the
abstraction which enables them to be matched to the signs of code. The first perspective of terminology is, in the words of certain - originally German - semanticians, 'onomasiological', i.e. naming and global, moving from the concept to the sign, and not interpretative and analytic, i.e. moving from the sign to the concept (the 'semasiological' perspective). [...] Like lexicology, terminology deals with the relationship of naming, the organisation of nameable classes and their representation by lexical and syntagmatic structures. It is related to semantics, especially intensional semantics, which analyses the contents 'formed' by language, and to onomasiological semantics, as we have already seen above; the study of the classes of objects corresponding to the signs (extensional semantics and also taxonomy and classology) and the study of designations (semasiology), are complementary to the previous approaches and must not be neglected in terminology, but they are not of primary importance. This means that terminology and lexicology intersect.”

(1995:127-128)

Traditional terminology applies the onomasiological approach, i.e. the 'naming approach'. In principle, one starts from concepts and looks for the names of these concepts. Here, for instance, the scientist associates each new concept, which may emerge through an invention, a scientific discovery or a social innovation, with a unique label to avoid ambiguity so as to achieve consistency. This is done by re-examining the meanings of words, changing designations, and coining new ones, i.e. creating neologisms (Sager, 1990:57). Lexicology engages itself rather with the semasiological approach, i.e. the 'meaning approach', where one starts from words and looks for their meaning; quite the opposite of what the perspective of the terminology science represents.

Like lexicology, terminology is concerned with the connection between units of designation and classes, of things and phenomena. Unlike lexicology, terminology is concerned with naming, the order of nameable classes and their representation by lexical and syntagmatic structures.
And elsewhere Rey continues:

“The illusion of a common vocabulary of science and technology with the same types of problems is a simplification invented by linguists and lexicologists. From their point of view all nomenclatures have common features and can, on the whole, be contrasted with the general or common vocabulary, both designations which reveal considerable vagueness from the conceptual and pragmatic points of view respectively.”

(1995:130)

Rey correctly says that terminology must study how names are bestowed on everything man has to distinguish in the world (1995:128). The Swedish biologist Linneaus, for instance, realised the need for a separate language and created a complex system of names and descriptive feature labels derived from Latin. Tournefort, the precursor of Linneaus, also writes (in Rey, 1995:13):

“Knowing plants means knowing precisely the names they have been given with respect to the structure of some of their parts [...]. The idea of characteristics which essentially distinguish one plant from another, must invariably be one with the name of each plant.”

In this way terminology science distinguishes itself from lexicology in that it seeks for a systematic way of classifying concepts in each scientific field. Fraas explains it:

“Aus den Bedürfnissen der fachkommunikativen Praxis heraus entstand in den 30er Jahren die Terminologiearbeit mit dem Ziel, Terminologien zu bereinigen und zu systematisieren, um sie für die Fachleute besser benutzbar zu machen. Diese systematische Terminologiebetrachtung wurde vor allem von den Fachleuten selbst und nicht von Linguisten betrieben, was Ziele und Methoden dieser Disziplin wesentlich prägte. In diesem Sinne grenzte sich die Terminologielehre von sprachwissenschaftlichen Untersuchungen deutlich ab und hob die Besonderheiten fachlicher gegenüber gemeinsprachlicher Lexik hervor.”

(1998:428)
In lexicology, form and meaning are regarded as the two aspects of a lexical unit, i.e. word, as independent entities (cf. Section 2.2). In terminology science, the approach is the same; however, the meaning of the term is said to be the concept (Diagram 2.6). Terminology science sees form and concept as the two independent entities of a terminological unitary element, as is the case with lexical units in lexicology "although the same division into form and content is made: the formal level is that of the term (or more broadly, the designation); the content level is said to be the concept, which is viewed as independent of the term" (Rogers, forthcoming:6-7). The objective of lexicology is to look into langue (language as a system) and investigate sense relationships between words at paradigmatic and syntagmatic levels; that of terminology is to achieve reference to concepts of the real world by means of using existing resources in a language, i.e. by exploiting the general language.

Diagram 2.6. Word vs. Term

8 Meaning and concept are the two linguistic terms used to refer to the same concept; other terms would be sense, intensional value, and content (cf. also Table 2.2 for a more extensive treatment of equivalent expressions for such linguistic terms).

9 In many instances Latin is used as a means of labelling (newly evolved) concepts. (Cruse, 2000:127-128).
2.2. WHAT is a WORD?

Meaning seems at once the most obvious characteristic and the most obscure aspect of language to be studied. Language is used as a means of communication to convey thoughts from one speaker to another. This happens by attaching to each concept which is an abstraction of thoughts, something concrete, which in linguistic terms is called a linguistic sign/label or an acoustic/sound image. However, the steps in understanding what has been articulated by a speaker are so swift and transparent that principles and knowledge which underlie this communicative ability happen on a sub-conscious level in every person's mind. Therefore, semantics, which investigates forms and meanings of lexical items is an important part of study of the linguistic structure.

The basic description of word, according to the Swiss linguist Ferdinand de Saussure, is that it has both a spoken and written form, and that it also has a meaning. In other words, de Saussure distinguishes two parts within the word, i.e. the signifié (concept) and the signifiant (sound image); however he emphasises that the relationship between the two is arbitrary.

Diagram 2.7. The basic description of word according to Ferdinand de Saussure.
(Baldinger, 1980:5)

"Nineteenth and twentieth-century linguistics divided words into morphemes or monemes as the smallest unit of meaning, and added phrases and nuclear sentences as the significant elements for consideration" (Rey, 1995:25). The moneme, whether morpheme or
lexeme\textsuperscript{10}, is the smallest unit with two functions (cf. Diagram 2.8). It is significant and signifié at the same time.

Cruse has a different approach to the issue:

"At this point it is necessary to be somewhat more precise about what we mean by a word. In one sense, obey, obeys, obeying, and obeyed are different words (e.g. for crossword purposes); in another sense, they are merely different forms of the same word (and one would not, generally speaking, expect them to have separate entries in a dictionary). On the other hand, obey and disobey are different words in both senses, whereas bank (river) and bank (money) are the same word for crossword purposes, but we would expect them to have separate dictionary entries and they are therefore different words in the second sense."

(2000:88)

Cruse distinguishes word forms and lexemes from each other: "Word forms, as the name suggests, are individuated by their form, whether phonological or graphic" (2000:88). He also has a more elaborate definition for lexeme: "Lexemes can be regarded as groupings of one or more word forms, which are individuated by their roots and/or derivational affixes." (ibid). He also supports his definition with some useful examples for a better understanding of the concept:

\textsuperscript{10} For our purposes the typographical convention for a lexeme is small capitals (cf. Typographical Conventions).
"So, run, runs, running, and ran are word forms belonging to the same lexeme run, while walk, walks, walking, and walked belong to a different lexeme, walk, distinguished from the former by its root; likewise, obey, obeys, obeying, and obeyed belong to a single lexeme and disobey, disobeys, disobeying, and disobeyed, despite having the same root as the first set, belong to a different lexeme, distinguished this time by the possession of the derivational affix dis-.

(2000: 88-89)

At this point it would be useful to point to the many parallel expressions used for each concept when describing the word in linguistic terms. Many linguists did not hesitate to give word and its two main components sense and form several different names. These are practically nothing else but equivalent expressions for the same concept\textsuperscript{11} (cf. Table 2.2 below).

<table>
<thead>
<tr>
<th>WORD</th>
<th>LEXIE</th>
<th>LEXEME</th>
</tr>
</thead>
<tbody>
<tr>
<td>sense</td>
<td>signifié</td>
<td>content</td>
</tr>
<tr>
<td>form</td>
<td>significant</td>
<td>expression</td>
</tr>
<tr>
<td></td>
<td>representation</td>
<td>sound/acoustic image</td>
</tr>
<tr>
<td></td>
<td>concept</td>
<td>name</td>
</tr>
<tr>
<td></td>
<td>meaning</td>
<td>linguistic sign/label</td>
</tr>
<tr>
<td></td>
<td>intensional value</td>
<td></td>
</tr>
</tbody>
</table>

\textbf{Table 2.2. The basic description of word.}

\textsuperscript{11} Equivalent expressions for each of the terms word, sense and form are contained within the same boxes.
This basic description of **word** is, however, simply a primitive way of saying that the meaning of a word is represented by means of an **acoustic image**. Ogden and Richards deny this view by adding a third important factor to this description, namely that of **reality**. The main criticism of this approach is the insuperable difficulty of defining concepts. Concepts, which are mental constructs, do not always represent exactly the same visual image in every speaker's mind. The **semiotic triangle** (cf. Diagram 2.9) created by Ogden and Richards was a great step in understanding the process of cognition with regard to linguistics.

![Diagram 2.9. Ogden and Richards' semiotic triangle.](Baldinger, 1980:7)

The experience of the outside world is unique to each individual. This view was supported by the American linguist and anthropologist Edward Sapir and his student Benjamin Lee Whorf in the beginning of the 20th century. Both developed an idea which placed great value on the diversity of the world's languages and cultures. This idea, which later came to be known as the **Sapir-Whorf hypothesis** resulted in a view about the relation between language and thought.
The Sapir-Whorf hypothesis combines two principles:

(i) **linguistic determinism**: "a view that the way in which we perceive and categorise the world is shaped by the language we speak" (Field, 2004:161).

(ii) **linguistic relativity**: "a view that language has categories and distinctions which are unique to it" (ibid).

The first argument states that language is an important factor in the way human beings think. However, in time this view was weakened. Thus, the weaker version of this hypothesis suggests that language is not an essential element of thinking, i.e. that language may not determine the way people think but that it stimulates the way they perceive and remember, hence this influences the ease with which people perform mental tasks. Field reports the following:

"A major test for linguistic determinism was found in the fact that languages divide up the colour spectrum differently. If it could be shown that we do not all perceive the spectrum in the same way, it would suggest that our perception of the real world is indeed shaped by the way in which our language classifies and subcategorises it. In fact, research suggests that focal points (prototypes\(^{12}\)) for particular colours are not only shared across languages. There is agreement on 'typical values' for colours even where a language possesses fewer colour terms than English.

(Field, 2004:162)

The second argument follows from this, and states that the experience of the outside world for each individual occurs in a unique manner, because the distinctions encoded in one language are not found in any other language. This principle leads Whorf to think that "all observers are not led by the same physical evidence to the same picture of the universe,

\(^{12}\) For a definition of prototype and its discussion cf. Section 2.2.2.
unless their linguistic backgrounds are similar or in some way can be calibrated" (Palmer, 1976:56).

Whorf demonstrates his view on linguistic relativity with an example from Hopi, an American Indian language. The word masa'ytaka, for instance, stands for everything that flies (e.g. insects, aeroplanes and pilots) except for birds which is denoted by another noun (Whorf, 1956:210 in Fig.10 & 216). According to Whorf, this is no more unusual than having one word in English for many kinds of snow, compared to Eskimo where there are different words depending on the nature of snow:

"We have the same word for falling snow, snow on the ground, snow packed hard like ice, slushy snow, wind-driven flying snow - whatever the situation may be. To an Eskimo, this all-inclusive word would be almost unthinkable; he would say that falling snow, slushy snow, and so on, are sensuously and operationally different, different things to contend with; he uses different words for them and for other kinds of snow". (Whorf, 1956:216)

Whorf concludes that because of such major differences between languages, it would be difficult to understand each other's thinking, having been convinced by the fact that concepts not represented in the languages he studied (such as Hopi, Aztec, Maya, Shawnee and Eskimo) were absent from the world view of the people who spoke them (Whorf, 1956:212ff.). However, Whorf's view in its strongest form is nowadays no longer supported by linguists (Salminen, 1993:170ff.). One reason is the fact that translations can be made between such languages, where, for instance, circumlocution in one language can compensate a single word that is contained in the other (as we have seen in the example with Eskimo when compared with English); the other reason is that although a language lacks a word its speakers can still understand the concept (Crystal, 1987:15).
With regard to the former reason, Palmer thinks that "unless there is some recognisable non-linguistic world of experience it is difficult to see how we could either learn a language or use it with our neighbours [speakers of other languages] consistently." (1976:57). He continues:

"Whorf's arguments as they stand are not wholly convincing. If we do not have the 'same picture of universe' as the speakers of other languages, we nevertheless have a picture that can be related to and in some degree 'mapped upon' the picture that others have. That this is so is proved by the fact that we can investigate other languages (as Whorf did!), and that we can translate. It may well be that we can never totally absorb or understand the 'world' of other languages, but it is clear enough that we can obtain a very fair understanding of them. This we could not do if the pictures were totally different. Similarly, we often meet difficulties in translation, but we never totally fail to translate from one language to another. There may be no exact equivalence, but languages are never totally different."

(Palmer, 1976:57)

And with regard to the latter reason, Palmer disputes Whorf's argument claiming that:

"[...] there is a world that we must share irrespective of the language we use. [...] Much of Whorf's argument, [...] is invalid in that he argues from certain formal observable grammatical characteristics to a 'model of the Universe'. The Hopi's model is for him based largely upon the verbal system. But by a similar argument we could argue that English too has no concept of time. [...] English does not have a past tense, but a 'remote' tense to indicate what is remote in time or remote in reality. This makes English rather more like Hopi, and it is easy to see that, if English had been an American Indian language, it could have been used as an example of a language in which time relations are not distinguished. [...] It is clear that the grammatical structure of a language tells us little about our way of thinking about the world."

(Palmer, 1976:57-58)
Palmer's views on Whorf's linguistic relativity, as shared by many other linguists, have long gained recognition. Field reports the following:

"Today's view is that all human beings have access to basic concepts, but that languages differ in whether they codify (give form to) a particular concept or not. Thus, English codifies many more types of walking than most languages (walk, stroll, amble, loiter, wander, scurry, march etc.); but speakers of other languages are still capable of recognising the concepts involved."

(Field, 2004:162)

We would like to conclude our discussion on the Sapir-Whorf hypothesis with Field's remark on Whorf's linguistic relativity:

"Directly opposed to linguistic relativity is a widely held view that language universals underlie the way in which languages encode reality. Some commentators would see these universals as deriving from the similar life experiences that human beings share across cultures. Others might attribute them to the fact that all human beings possess similar cognitive faculties and thus similar ways of viewing the world and organising information."

(Field, 2004:162)

2.2.1. On the Difference between a Word and a Term

According to ISO standards a "term (for a concept) is any conventional symbol for a concept which consists of articulated sounds or of their written representation (= of letters). A term may be a word or a phrase" (ISO/R 1087-1969)\textsuperscript{13} or "a designation of a defined concept

\textsuperscript{13} ISO/R 1087-1969 was withdrawn by the Technical Committee/Subcommittee ISO - TC 37 on 01.04.1990.
in a special language by a linguistic expression" (ISO 1087-1990). Basically, a term is "a label - usually lexical - in the special language of a specific domain, designating a particular concept in the knowledge of that domain, and arguably less context-dependent with regard to its sense than a general-language word" (Ahmad & Davies, 1994:269). According to the above statements, a term is confined to a form level.

Lexicology investigates lexical units not only from a form level as in terminology science but also from a content level. This means, that semantics is heavily involved in the study of lexical units. Any lexical unit should not be seen as an isolated unit. Hence, the study of context dependency has an important role in the description of what the content of a unit comprises.

Taking this as the focal point of the discussion as to what consists a term it can be said that a word (e.g. bridge; as in construction) or even a group of words may constitute a term (e.g. bridge controller; as in computer science). "By contrast with lexicological practice, a string of words which designates a concept is not considered from the point of view of phraseology, but as a unitary element, i.e. a term, since it is viewed as designating a single concept" (Rogers, forthcoming:6). Hence, in contrast to words, compounds are considered to comprise one linguistic designation normally representing one concept. Furthermore, hybrids (e.g. G.728 Low Delay CELP as in Electrical Engineering), abbreviations (e.g. MOT) or non-linguistic elements (e.g. H₂O as in Chemistry) can also be a designation. Therefore, it can be said that it is hardly possible to isolate elements characteristic of terms which can be observed in LGP too.

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The meaning of a term is usually more precise than that of a general language word (cf. Diagrams 2.10 and 2.11). Felber states that "the word is a linguistic symbol to which as contents mostly a multiplicity of different meanings with no distinct demarcation (in contrast to the concept), sometimes blurred transitions from one meaning to the others, and of numerous shades of meaning is attached. The specific shade of meaning in a given situation is defined by the context, in which the word is used. The word is dependent on context" (1984:107-8). On the contrary, an earlier view states that special lexical items, i.e. terms, containing nothing else but referential meaning were considered to be context-free (Sager, 1990:41). While more recent thinking in terminology no longer accepts such an absolute difference, as a result of its relative precision, a term is said to be semantically more restricted in its collocative behaviour than that of a word (Rogers, forthcoming:5).

Diagram 2.10. A word in its semantic field (Sager, 1990:41).

Terms also do not have connotative meanings: "The term owing to its assignment to a concept is dependent on the system of concepts to which this concept belongs. The term retains the particular meaning also within any context, i.e. the meaning which the term has in
the system of concepts" (Felber, 1984:108). Words, in contrast, are said to have both denotative and connotative meanings (Rogers, forthcoming:7), i.e. they vary in their meaning according to context.

\[ \text{Diagram 2.11. A term in its subject field (Sager, 1990:42).} \]

Contradictory to the above statement of Felber is, nowadays, the notion that besides words, some terms, when not within the same domain, can also be context-dependent. Terms may occur across independent domains and can sometimes overlap at the form level, i.e. terms can be polysemous, homonymous, metaphoric or metonymous\textsuperscript{15}, and represent different meanings at the semantic level. Thus, earlier views in terminology science which stated that terms do not change their meaning in context are no longer accepted. Current views support the idea that terms within the same domain can denote different meanings depending on the context.

Sometimes a term needs to go through an evolutionary process in order to become accepted in its final form by the users of a special language. This process involves a change in the lexical entity of a special language from being a descriptive term (e.g. car fitted with a catalytic converter) into becoming a ‘mature’ term (e.g. cat car) (Rogers, forthcoming:5). This situation usually occurs when newly coined terms, i.e. neologisms, need to be translated from a source-language (SL) into a target-language (TL) and the TL has initially no means to find

\textsuperscript{15} Please refer to Section 2.3 for further reading on individual topics.
an exact equivalence for that neologism from its current resources. Considering that the translation of neologisms is one of the most obvious ways to go beyond the current resources of a language it is by no means unusual for a language not being able to cope with the rapid advances in science and technology in terms of the escalating number of technical concepts.

The social aspect of terminology science involves the levels of communication between the speakers using special languages. This means, from a narrow aspect, terms comprise only specialist words used in expert-to-expert communication; from a broad aspect, however, terms are also applied in communicative instances, such as in expert-to-technician, expert-to-layperson or in non-expert to non-expert communication (Rogers, forthcoming:5).

"The characteristics of a term which distinguishes it from a non-term are precision and the fact that it belongs to a system of terms" (Picht & Draskau, 1985:97). This feature gives an important emphasis to the fundamental difference between a term and a word in that a term represents a more unique concept than a word. This situation is highly desirable especially within the same domain or subject field. **Monosemy** (where a lexical label cannot designate more than one concept) and **mononymy** (where a concept cannot be designated by more than one lexical label) are two phenomena desired for any special language, according to traditional terminology. However this can be far from reality as no such a language exists where there is no case of lexical and grammatical ambiguity, such as **polysemy** or **homonymy**16. Sager states that "since the number of lexical elements in a language is finite, some items may have to do double duty, so that words may be pressed into service as terms in particular special languages" (1990:19). For instance, the term **pressure** and the word **pressure** have to be classified as distinct senses.

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16 For discussions on polysemy and homonymy cf. Section 2.3.1 and Section 2.3.2 respectively.
Having discussed the differences and similarities between a word and a term, it needs mentioning that, based on the relevant literature reviewed and for the purpose of our studies, we would like to assign the term lexeme and its alternative expressions in the relevant boxes (cf. Table 2.2) as the generic description(s) for both word and term. We also would like to point out that units of senses selected for our case studies are considered to be in key positions not only with respect to paradigmatic but also with regard to syntagmatic sense relations, hence the terms keyword and/or keyterm may be used in certain instances to replace the term lexeme.

Since lexical ambiguity is the central issue of our studies, lexical items which are polysemous or homonymous are the focal point. Consequently, context-dependence of keywords needs to be discussed as context may, in some cases, offer also a possibility for disambiguation.

### 2.2.2. Context-dependence of Words:

In this section, we will give consideration to the cognitive aspect of lexicology, in particular, lexical semantics, and hence focus on words and their contextuality.

"The prototypes of cognitive categories are not fixed, but may change when a particular context is introduced, and the same is true for category boundaries. More generally, the whole internal structure of a category seems to depend on the context and, in a wider sense, on our social and cultural knowledge, which is thought to be organized in cognitive and cultural models."

(Ungerer & Schmid, 1996:43)

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17 A lexeme comprises groupings of one or more forms and consists of one or more meanings which may exist across several domains occurring in special languages as well as in the general language. (Note that the intensional value of a lexical unit may be spoken of in two ways: either as meaning/sense or as concept. When the focus is upon the semantic content of a form, one may speak of meaning/sense, but when it is upon the cognitive aspect of its intensional value, one may use the term concept.)
With the above statement Ungerer and Schmid suggest that prototypes are inclined to shift as the context changes, hence they are not fixed reference points for cognitive categories\(^\text{18}\) as they have been wrongly assumed to be. To demonstrate this, they carry out an experiment comparing four sentences which deal with the prototype\(^\text{19}\) of dog:

1. The hunter took his gun, left the lodge and called his dog.
2. Right from the start of the race the dogs began chasing the rabbit.
3. She took her dog to the salon to have its curls reset.
4. The policemen lined up with dogs to face the rioters.

Carrying out this small-scale experiment they come to the conclusion that the most likely member of a category depends on the context, i.e. that our mental picture of a prototype of a dog shifts as the context surrounding it changes. However, the sentences above do more than just shifting the prototype. Ungerer and Schmid observed that in some cases the category structure of the context-dependent category is much leaner than that of the non-contextualised category. To explain this, they compare both sentences (2) and (3); here the context-dependent prototypes are GREYHOUND and POODLE respectively. All other types of dogs are highly unlikely to appear in our minds as they are very peripheral members of the context-dependent category.

Ungerer and Schmid also point out that context not only determines the choice of category prototype, but that it also leads to an adjustment of the position of other category members (1996:44). This can be explained as follows: when a category is viewed in terms of its attributes, context seems to have a twofold effect; first, the context can change the weight

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\(^{18}\) Cognitive categories are mental products of classification, e.g. the mental process of categorising temperature, colours, shapes, organisms and objects etc. For further reading cf. Ungerer & Schmid (1996).

\(^{19}\) The term prototype has been replaced by Rosch with Berlin and Kay's 'focus' as it makes it much easier to extend the notion of foci beyond colour categories. It stands for artificially created 'best examples'.
of attributes that seem to be relevant for a certain category, and second, the context can emphasise attributes that are not prominent and even introduce new attributes which would not be mentioned at all in non-contextualised attribute-listing experiments (1996:45).

One effect which context has, is that attributes of the category DOG which appear to be decisive in the goodness-of-example ratings and attribute-based typicality ratings lose weight, e.g. barks, has four legs, wags tail when happy, likes to chase cats, etc. The other effect involves the importance certain attributes of a prototype gain depending on the context, e.g. in the hunting-dog context, attributes like brings back the kill, or points out the position of animals for shooting, and in the dog-racing context, attributes such as has long, thin legs, can run fast, is enduring etc. become distinct.

Ungerer and Schmid conclude their experiment with the notion that due to the introduction of new attributes and the re-evaluation of the weights of existing ones the attribute list for a member of a category changes completely. The result is that previously peripheral examples are equipped with large bundles of heavily weighted attributes and turned into good examples or even prototypes, while well-established good examples are reduced to the status of marginal members (ibid).

With the above experiment we can accept that context is a crucial element in re-positioning the category members within a structure. However, it is necessary at this point to define what context actually is. According to Ungerer and Schmid, context has been regarded (from a purely linguistic point of view) as the linguistic material preceding and following a word or a sentence. Cognitive linguists are of the opinion that context is a mental phenomenon and needs to be distinguished from situation. In order to show the difference between context and situation Ungerer and Schmid experiment with the following example sentence: The boy was
building a sandcastle with his bucket and his spade. They define the term situation as the interaction between objects in the real world (1996:46). As can be seen from the example sentence there are four objects, i.e. a boy, a sandcastle, a bucket and a spade which make up the situation. These four objects which are found in the 'real world' are immediately associated with the relevant mental concept, i.e. cognitive categories, in a person's mind. Moreover, the human mind establishes a cognitive representation of the interaction between the categories simultaneously. This cognitive representation is called context; and it is one important aspect of the study in question, i.e. objects (keywords) and their surrounding context.

However, context is not an isolated piece of information which the mind receives when it records a sentence. The long-term memory where related knowledge is stored plays an important role in the decoding phase of the stimulus received. Here, the context is associated in two ways with related knowledge already existing in the memory. Whereas context specific knowledge about the categories involved is retrieved, the currently active context calls up other contexts from long-term memory which are related to it (Ungerer & Schmid, 1996:47) (cf. Diagram 2.12).

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20 A goodness-of-example rating is based on individuals' judgement of how good an example of a category is. Cf. Ungerer & Schmid (1996:12) or Rosch (1975:198).

From the above diagram, it can clearly be seen that mental concepts do not purely depend on context which surround them. They also rely on already stored knowledge in a person's long-term memory with which the mind inevitably establishes a linkage. Ungerer & Schmid call the whole of this stored knowledge which concentrates only on a particular field cognitive model (ibid). By looking carefully at the properties of cognitive models Ungerer & Schmid realise that they are open-ended, and that they are not isolated cognitive entities but somehow interrelated (1996:48). This means that each cognitive model is a network of cognitive categories linked to each other and incomplete. They also point out that cognitive models are omnipresent. It happens that sometimes the mind becomes exposed to an unknown object or situation which it cannot associate with any of the available cognitive models. Hence, it will try and compensate by means of associating the new experience with an existing cognitive model (Ungerer & Schmid, 1996:49).
2.2.3. Linguistic vs. Encyclopaedic Knowledge

Language is an important factor in communicating the experience and knowledge of the world. Information on characteristics of objects is stored in the mind in a systematic way, and is retrieved in communicative instances in order to express knowledge we possess. This knowledge, which covers information on objects, is referred to as encyclopaedic knowledge. Only, what is encyclopaedic knowledge in contrast to linguistic (semantic) knowledge?

Many linguists have contributed to the controversial debate on the distinction between linguistic (semantic) and encyclopaedic knowledge. Whilst there is a strong belief that linguistic (semantic) knowledge can and should be separated from encyclopaedic knowledge, there is the alternative notion that these two entities are complementary and make up a whole, and can therefore not be divided.

Lutzeier believes that semantic knowledge cannot be distinguished from encyclopaedic knowledge, simply because the number of semantic features which we can ascribe to linguistic forms is unlimited.

"Das Gemeinte wird ferner mittels sprachlicher Formen dem Gegenüber versucht mitzuteilen. Dieser muß das Gemeinte über die Bedeutungen der verwendeten sprachlichen Formen versuchen zu erschließen. »Sprachliche« Bedeutungen in dem trivialen Sinne, daß sie aufgrund von sprachlichen Formen aktiviert werden, sind es natürlich; dies lohnt sich kaum zu erwähnen. Aber was in so verstandene sprachliche Bedeutungen alles einfließen kann, da kann es wegen des auf einer groberen Ebene ziemlich umfassenden Charakters einer natürlichen Sprache sinnvollerweise keine Grenzen geben."

(1985:80-81)

What Lutzeier means by this is that the semantic structure of forms is open-ended as any relevant information can be contained in the meaning of a linguistic form. He concludes
with the remark that semantic and encyclopaedic knowledge are two elements present in the mind neither of which can be separated:

"Es kann von keiner Trennung zwischen sprachlicher und nichtsprachlicher Bedeutung in sinnvoller Weise gesprochen werden."

(1985:86)

Nida in his Componential Analysis of Meaning states the following:

"Though in most instances, it is not too difficult to determine the features that characterize the upper hierarchical levels, it is much more difficult to determine the distinctive features of the lower levels. [...] When one reaches the lowest level of a hierarchical structure, linguistic meaning is operative in only a limited way. Most of the information which speakers of a language employ at this level is essentially encyclopedic, for linguistic meaning can operate only where there are multiple forms which can be classified by some higher meaning, or separated from one another by the process of naming (reflected in the procedures for dealing with contiguous series). For example, we can define semantically the meaning of the tool saw because there are a number of different forms of objects (together with their diverse designations: hand saw, band saw, coping saw, table saw, jigsaw, etc.) which have certain features of meaning in common with saw, and there are other tools which contrast with saws. Only by these means is it possible to define the meaning of saw. We can also state the diagnostic differences between the various kinds of saws, but these diagnostic differences do not constitute a description of all the culturally relevant features. We have stated only the features necessary and sufficient to separate these objects from one another. An adequate description of such objects must depend upon encyclopedic (that is culturally derived) information."

(Nida, 1975:91)

In his statement, Nida makes a distinction between the linguistic meaning and the encyclopaedic meaning of a linguistic form. He underlines the idea that upper hierarchical levels reflect the linguistic meaning of a form as they consist of diagnostic features which are devoid of sociological facts and culturally relevant features, whereas lower hierarchical levels
contain culturally derived information and therefore reflect the encyclopaedic meaning of a form. He also admits that it is easier to determine the features that characterise the upper hierarchical levels as compared to lower levels. Having viewed his opinion, inevitably the following questions arise: Only where do the lower levels of a hierarchical structure commence? And is there a clear cut line between its upper and its lower levels at all? Or is it rather a blurred transition which exists between a hierarchy's multiple levels?

In Palmer (1976:48) we find the following statement:

"[...] how many meanings has I am looking for the bible? The answer depends on whether you know that one of the cow's stomachs is called the bible! [...] The distinction between the speaker's knowledge of his language and his knowledge of the world is blurred [...]. There is, [...] no such thing in semantics as linguistic ability that is unrelated to knowledge of the world. These are essentially one and the same thing."

Palmer provides the answer to the questions which Nida seemingly ignores. He (Palmer) strongly believes that linguistic and encyclopaedic knowledge are "essentially one and the same thing", as he finds it impossible to make a distinction between semantic and encyclopaedic knowledge since "there is no such thing in semantics as linguistic ability that is unrelated to knowledge of the world" (ibid). Palmer's view may be justified, if we make the claim that language is a medium used to convey knowledge of the world (knowledge which is of different depth in each speaker's mind).

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Nida continues here with an example so as to distinguish between technical and folk taxonomies: "If, for example, one wishes to distinguish between poodles and boxers as lower-level representatives of an included meaning of dog, there are scores of features which might be listed, including size, color, hair texture, facial features, etc. Specialists in the classification of dogs will, of course, be aware of distinctions of which the average person is totally ignorant, but such specialists possess what should be called a "technical" or "scientific" taxonomy, rather than a folk taxonomy." (1975:91).
Knowledge of the world is expressed by virtue of linguistic means which are nothing else but the reflection of reality itself. Language as a means to express knowledge is, therefore, 'one step behind reality' as it is applied in communicating knowledge gained from reality. We may therefore say, that reality and language complement each other in that they go hand in hand. Hence, semantic and encyclopaedic knowledge are fundamentally inseparable.

Gauger contributes to the issue with a colour term. He claims that with colours one can talk about a semantic content in its 'purest form': "Wir wählen als Beispiel ein Farbadjektiv, weil bei diesen vielleicht am ehesten von einem »rein sprachlich« konstituierten Inhalt geredet werden kann." (1970:67). When talking about Inhaltsverdichtung des Wortes, i.e. the intensional value of a word, he mentions three important elements which determine the content of a form: situational and contextual context, acquisition of knowledge, and content boundaries. Acquisition of knowledge, as the second element, is concerned with the impact of the extra-linguistic world on the acquisition process of concepts: "Zum zweiten geschieht diese Verdichtung durch das nach und nach erworbene Wissen über das Wort intendierte Ding. So erfährt das Kind zum Beispiel, daß Brot aus dem Mehl von Gertreidekörnern hergestellt wird, daß Äpfel an Bäumen wachsen und daß Eier von Hühnern gelegt werden." (1970:66). He continues by questioning as to what extent such knowledge of the extra-linguistic world should be included into the content of a form: "Die Frage stellt sich, ob oder inwieweit ein derartiges Wissen über das Ding zum Inhalt des Wortes gehören, welches das Ding bezeichnet. Selbstverständlich ist es möglich, sich von Brot, Apfel und Ei Dingvorstellungen zu bilden, die das genannte Wissen nicht enthalten [...]" (ibid). Gauger continues to reflect on the issue with his example on the colour term red as follows:

"Gibt es eine »rein sprachliche« Definition des Inhalts? [...] Und wie verhält es sich mit anderen, weniger konkreten Inhalten wie »Frühling«, »Geduld«, »Freiheit«, »Rot« [...]? Sind diese Inhalte ohne ein, wenn auch noch so bescheidenes, Wissen über ihre Intenta überhaupt vorstellbar? Es ist hier zu

(1970:66-67)

Gauger's approach to the issue supports Lutzeier's and Palmer's views. His message is that linguistic and encyclopaedic knowledge cannot be distinguished as they are fundamentally, in Palmer's words, "one and the same thing". Langacker who shares the same view states the following:

"The distinction [...] between linguistic and extra-linguistic knowledge is largely artifactual, and the only viable conception of linguistic semantics is one that avoids such false dichotomies and is consequently encyclopedic in nature. [...] the task of semantic description is essentially open-ended, and linguistic analysis is inextricably bound up with the characterisation of knowledge and cognition in general."

(1983:163-164)

Haiman also makes an important contribution to the 'distinction' between linguistic and encyclopaedic knowledge. We would like to conclude with his words:

"[...] the distinction between dictionaries and encyclopaedias is not only one that is practically impossible to make, but one that is fundamentally misconceived."

(1980:331)
CHAPTER 2

LITERATURE REVIEW

The following section of this chapter will focus on the linguistic description of lexical ambiguity in natural language and the different cases associated with it. It will also provide answers to the above raised issues in conjunction with some examples.

2.3. AMBIGUITY in NATURAL LANGUAGE

Ambiguity\textsuperscript{22} has been one of the most exciting and interesting topics of discussion for many linguists and philosophers throughout thousands of years. In Ancient Greece, Aristotle dealt with the issue in his well-known writings of *De sophisticis elenchis* and *Ars rhetorica*. It was then Quintilian who showed strong opposition to the matter maintaining that it was a device used and abused in courtrooms, thereby making a connection to Cicero’s reputation. The 17\textsuperscript{th} century French linguist Vaugelas in his discussion of equivocation tried to prescribe how to avoid ambiguity in speaking and writing. Similar examples reappeared in Bally 1944 who felt that ambiguity was unavoidable. Jespersen in 1964 regarded ambiguity as a result of inadequacy in some languages, and that it might even increase with the development of language (Kooij, 1971:3).

Whatever one’s position in these disputes, ambiguity has always been felt as an obstacle to communication, and has also been looked upon as a deficiency of language. Nevertheless, one has to accept that ambiguity is an inherent property of any natural language. The term ambiguity has been associated with meanings such as “lack of clarity” or “equivocation” (Kooij, 1971:1), and the reason for ambiguity lies in the fact that the quantity of

\textsuperscript{22} Linguistically, the term ambiguity is seen as a phenomenon where a word, phrase, or sentence has more than one meaning. According to Brew, “ambiguity happens when sentences or smaller fragments of text are susceptible of interpretation in more than one way” (2000). As this provides a general description of the term ambiguity, and focus will be upon lexical ambiguity, in particular polysemy, with regard to the three case studies to be conducted, a more specific definition will be provided at a later stage.
lexical items in a language are finite. As a result, some of these items take on the task to fulfil multiple functions (Sager et al, 1980:75).

A close examination of most words reveals that they have many different senses and the rules which combine them into sentences will frequently yield several possibilities for interpretation. Usually, potential ambiguity is resolved unconsciously in a person's mind. This shows the pragmatic and semantic abilities of that person in action.

As already mentioned, it is in the nature of the general language that words sometimes overlap. In most cases speakers of a language can still easily distinguish the meanings of different lexical items (if in context of a sentence for instance) although their form may be phonetically and/or orthographically identical. Considering that communication is not achieved merely by words in isolation but by words put into a broader context, i.e. a "broader linguistic structure which can also be called the syntagmatic structure" (Baldinger, 1980:15), one can say that it is the context which determines the meaning within a concrete linguistic situation.

The structure of natural languages is so established that certain lexical items are shared between LGP and LSP. However, it may happen that lexical ambiguity occurs within one particular domain of LSP. This is hardly acceptable as communication is aimed to be achieved at a standard where precision is given the highest priority. Terms which are usually borrowed out of the general language may appear as polysemous or homonymous across several different domains in LSP, nevertheless "potential difficulties can be faced if polysemes and homonyms occur within the same subject field" (Rogers, forthcoming:5).

The scope of the term ambiguity, however, needs to be restricted. Crystal provides a more elaborate definition of ambiguity:
"The general sense of this term, referring to a word or sentence which expresses more than one meaning, is found in linguistics, but several types of ambiguity are recognised. The most widely discussed type in recent years is grammatical (or structural) ambiguity. [...] An analysis which demonstrates the ambiguity in a sentence is said to disambiguate the sentence. Ambiguity which does not arise from the grammatical analysis of a sentence, but is due solely to the alternative meanings of an individual lexical item, is referred to as lexical ambiguity, e.g. *I found the table fascinating* (=‘object of furniture’ or ‘table of figures’ [...])."

(Crystal, 1985:15)

The following will draw attention to the special case of lexical ambiguity, i.e. that of polysemy, metaphor, metonymy, vagueness, ill-definedness, laxness, generality, and homonymy.

2.3.1. Polysemy

In polysemy, senses share similar characteristics (Sager, 1990:72 and Sager et al, 1980:78). They are semantically related to each other and belong to the same system of concepts. In the case of polysemy, "the same acoustic image can be the symbol for different realities" (Baldinger, 1980:14). For instance, the meaning of *Wort* in German represents *kleinste formale Einheit eines Satzes* in terms of syntax and also *bedeutungstragende Lexikoneinheit* in terms of lexical semantics. The word *Sonde* in German is another case of polysemy as it is shared by several different subject fields, such as the medical science, geology, meteorology, physics and aeronautics.

The use of polysemy is, in a way, the result of exploiting existing resources of a language. This phenomena where an existing linguistic label becomes attached to a new concept is also referred to as re-semanticisation.
2.3.1.1. Semantic Relations between Senses of Polysemous Lexemes

If there is a binary relationship between two words whereby one appears more specialised in meaning than the other, the word is potentially polysemous. Below are some examples for semantic relations between polysemes:

(i) Autohyponymy:

Cruse defines autohyponymy as "a word which has a default general sense, and a contextually restricted sense which is more specific in that it denotes a subvariety of the general sense" (2000:110). An example of this would be drink as in You must not drink on the day of the operation being general and John doesn't drink - he'll have an orange juice being more specific.
(ii) Automeronomy:

In automeronymy the more specific sense of a lexeme, as in autohyponymy, denotes subpart rather than a subtype. For instance, the word door can denote the whole set-up, with jambs, lintel, threshold, hinges, and the leaf panel itself, as in Go through that door or just the leaf, as in Take the door off its hinges (Cruse, 2000:111).

(iii) Autosuperordination:

The sense of a lexeme is extended to the degree that it embraces characteristics which is beyond the lexeme's actual sense. The use of man, for instance, to refer to the human race is a typical example of this, where a masculine concept embraces also the feminine (ibid).

(iv) Autoholonomy:

Differentiating autoholonomy from automeronymy is a difficult task because different contexts, which in themselves appear to exert no particular selective pressure, none the less induce different readings. For example a scratch on the arm is on the non-hand part of the arm, whereas in She was waving her arms about the whole arm is indicated (ibid).

2.3.1.2. Non-linear Polysemy

Metaphor and metonymy are the two kinds of polysemy regarded as non-linear polysemy. Both phenomena will be discussed below:

(i) Metaphor:

Metaphor is one of the most widely recognised figures of speech, being commonly used in many everyday varieties of language as well as in rhetorical and literary contexts.
Some analysts consider metaphor to be the core of linguistic (and especially poetic) creativity. Many polysemous senses are clearly related metaphorically.

In metaphor, two unlike notions are implicitly related, to suggest a similarity between them (Crystal, 1995:70). Very often, certain shapes of animals and parts of human body are used in a metaphorical way to express new coinages. This occurs very often in the field of civil engineering (Sager, 1990:72). For example, the word toe, which actually denotes any of the five small parts at the front of the human foot (Hornby, 1995:1257), conveys the meaning of the part of the base of a dam or retaining wall which is on its free side, away from the retained material (Scott, 1991:459).

Metaphors are basically figurative usages based on resemblance (Cruse, 2000:112). Further examples for metaphors are: bridge as in dentistry, or river bed and canal bed both of which are metaphorical extensions.

However, according to Lakoff, metaphors are not merely decorative features of certain styles, but are an essential component of human cognition. Nor are they purely linguistic, but conceptual in nature (Cruse, 2000:205).

(ii) Metonymy:

In contrast to metaphor, which has traditionally been based on the notions ‘similarity’ or ‘comparison’ between the literal and the figurative meaning of an expression, metonymy involves “a relation of contiguity, i.e. nearness or neighbourhood, between what is denoted by the literal meaning of a word and its figurative counterpart” (Ungerer & Schmid, 1996:115). A basic definition of metonymy is “the use of an attribute in place of the whole” provided by Crystal (1995:70), e.g. the stage (the theatrical profession), the bench (the judiciary).
Although metaphors and metonymies are regarded as figures of speech, i.e. as more or less "ornamental devices used in rhetorical style" (Ungerer & Schmid, 1996:114) examples below provided by Ungerer and Schmid (1996:116) show that metonymies as well as metaphors are not restricted to literary usage but occur also in everyday language (cf. Table 2.3).

<table>
<thead>
<tr>
<th>Contiguity-Relation</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>PART FOR WHOLE</td>
<td>all hands on deck</td>
</tr>
<tr>
<td>WHOLE FOR PART</td>
<td>to fill up the car</td>
</tr>
<tr>
<td>CONTAINER FOR CONTENT</td>
<td>I'll have a glass</td>
</tr>
<tr>
<td>MATERIAL FOR OBJECT</td>
<td>a glass, an iron</td>
</tr>
<tr>
<td>PRODUCER FOR PRODUCT</td>
<td>have a Löwenbräu, buy a Ford</td>
</tr>
<tr>
<td>PLACE FOR INSTITUTION</td>
<td>talks between Washington and Moscow</td>
</tr>
<tr>
<td>PLACE FOR EVENT</td>
<td>Watergate changed our politics</td>
</tr>
<tr>
<td>CONTROLLED FOR CONTROLLER</td>
<td>the buses are on strike</td>
</tr>
<tr>
<td>CAUSE FOR EFFECT</td>
<td>his native tongue is German</td>
</tr>
</tbody>
</table>

Table 2.3. Types of contiguity-relations in metonymies (Ungerer & Schmid, 1996:116).

Metaphors and metonymies are powerful cognitive tools for the conceptualisation of abstract categories. However, they are not purely stylistic elements applied to express abstract concepts but also frequently used in scientific, political and social issues to denote concrete concepts due to their exegetical values (Ungerer & Schmid, 1996:114-147). Examples of this can be found in computer science, for instance mouse.

There are claims made by cognitive linguists about the description of metonymies which can also be found in metaphors:
both are seen as conceptual in nature,
both can be conventionalised (i.e. automatic, unconscious, effortless and generally established as a model of thinking),
both are means of extending the resources of a language,
both can be explained as mapping processes.
(Ungerer & Schmid, 1996:128)

Ungerer and Schmid distinguish metaphor from metonymy by way of looking at how cognitive models interact. "The main difference between metaphor and metonymy is that while metaphor involves a mapping across different cognitive models, metonymy is a mapping within one model" (ibid). They also explain the main function of a metonymic expression which emphasises its distinct characteristic from that of the metaphor: "The main function of a metonymic expression is to activate one cognitive category by referring to another category within the same model, and by doing that, to highlight the first category or the submodel to which it belongs" (ibid).

(iii) Vagueness:

The phenomenon of vagueness has been described as an "overlap of domains" (Kooij, 1971:119). Cruse has somewhat a different description for vagueness: "the meaning of a word is vague to the extent that the criteria governing its use are not precisely statable" (2000:51). He also distinguishes between two dimensions of vagueness, namely that of ill-definedness and laxness.

Vagueness is a case of indeterminateness which can easily be confused with generality. This will be discussed in detail further below.
(iv) Ill-definedness:

Ill-definedness can usually be observed in a lexeme which designates a concept on a gradable scale (Cruse, 2000:51). Cruse uses *middle-aged* as an example to clarify what ill-definedness is: "Age varies continuously: *middle-aged* occupies a region on this scale. But at what age does someone begin to be middle-aged, and at what age does one cease to be middle-aged and become old? There is quite an overlap between *middle-aged* and *in their fifties*, but the latter is significantly better defined: we know in principle how to determine whether someone is in their fifties or not." (ibid).

(v) Laxness:

Some terms in the language are used in a 'loose way', although their essence can easily be defined. For instance, the concept of a circle can be described precisely; however, its application to a particular situation, such as *The mourners stood in a circle round the grave* can be lax as no one would expect the people involved to shape an exact circle (Cruse, 2000:51-52).

(vi) Generality:

Another feature in the natural language which may cause ambiguity is generality. A word like *friend*, for instance, may give rise to curiosity as to what the gender of that *friend* is. Hence, we may assume that hyperonyms which represent more generalised features than their hyponyms show a tendency towards being ambiguous in the sense that they embrace non-specific characteristics in comparison to their subordinate elements. Nevertheless, it may well be that the context is an important factor in the resolution of the sense intended (Kooij, 1971:119-20).
2.3.1.3. Systematic Polysemy

It has been observed that sometimes certain lexemes can be predictable on the basis of their semantic relationship to another lexeme: "Some cases of polysemy are systematic in the sense that the relationship between the readings recurs over a range of lexical items that is at least partly predictable on semantic grounds." (2000:113). Cruse thinks that the least systematic form of polysemy is metaphor. To demonstrate this he provides the following examples:

foot of mountain    head/top of mountain
foot of tree        head/crown of tree
head of a pin       foot/point of a pin

As can be seen, the above examples show that in metaphors where parts of the human body have been used to describe a particular aspect of an object with words like foot or head, our expectation of what the 'opposite' of that word would have to be is that it describes the other aspect of that word which lies in the opposite direction with an opposite word to the original. For consistency reasons, the human mind would therefore expect the opposite for foot of mountain to be head of mountain which, of course, is incorrect.

Although metaphors have been regarded as being the least systematic form of systematic polysemy there are very basic ones which feel so natural that they are not perceived as metaphors any longer. Cruse refers to an example like up is more / down is less (ibid).

In contrast to metaphor, metonymy appears to be highly systematic. Below are some examples:
'composer' / 'music by same'  
*Beethoven was deaf.*
*Do you like Beethoven?*

'food' / 'person ordering same'  
*The omelette is overcooked.*
*The omelette complained.*

Another case for systematic polysemy is linear polysemy (cf. Diagram 2.14). This can be explained as follows: when a hyponym has got two hyperonyms whereby only one of the subordinate terms has a linguistic label the superordinate term will compensate for it by filling the gap. A typical example of this would be:

![Diagram 2.14. Linear polysemy.](image)

As the female category of *duck* is not labelled with a separate lexical item, as is the case in the male category, the superordinate term which is a generalisation of the male and female species of that animal shifts horizontally to the female category in order to fill the lexical gap.
There are also cases where this kind of shift has occurred in the opposite direction, i.e. one of the subordinate terms shifts upwards to function also as the superordinate term. An example of this would be the term *cow* (Cruse, 2000:114).

2.3.2. Homonymy

The phenomenon where a word designates two or more concepts between which no semantic relationship exists is called **homonymy**. This is due to the fact that the term has sometimes different etymological backgrounds. For example, in English the term ‘pupil’ as in anatomy and denoting an individual, or in German *der Bauer* = farmer and *das Bauer* = birdcage are cases of homonymy where two concepts having completely different characteristics share the same linguistic label. These concepts are, however, semantically not related to each other at all.

![Diagram 2.15. Homonymy](image-url)
Baldinger thinks that "a word can evolve semantically in such different directions that the relationship between the two meanings is lost, with result that, in the linguistic feelings of the speakers, two homonyms are born" (1980:23).

The synchronic and diachronic levels play an important role in the distinction between polysemy and homonymy. According to Rogers, the usual criterion for distinguishing between polysemes and homonyms is etymology (1997:4/3), i.e. if words coincide in their phonological structure without having any common etymological roots one can speak diachronically of homonymy. That is, homonymy arises through 'coincidental' phonetic and semantic developments, through which

a) originally distinct expressions collapse into a single form (e.g. sound₁: distinctive noise, sound₂: healthy, secure, sound₃: channel of water, and sound₄: probe, investigate); or

b) a single original expression branches into two or more expressions retaining the original orthographic (and phonological) form, e.g. snow₁: solid precipitation and snow₂: cocaine (Bußmann, 1996:210-11).

However, the etymological criterion is generally problematic since the point of divergence from a common etymological origin is often unclear.

Synchronically, polysemy and homonymy can be differentiated based on their semantic relations (Lyons, 1995:28). To put it more simple: homonymy is traditionally distinguished from polysemy in that a polysemic expression has several closely related variations in its meaning, e.g. green (fresh, inexperienced, and raw, amongst others), while the meanings of homonymous expressions have no apparent semantic relation to one another (Bußmann, 1996:210).
It is also interesting how Lyons differentiates between two types of homonymy (1995:55):

- Absolute homonymy
- Partial homonymy

According to Lyons, absolute homonyms have to fulfil three conditions, such as (i) no relation in meaning, (ii) identity in all forms and (iii) grammatical equivalence in identical forms. A typical example for an absolute homonym would be bank, one of whose meanings is financial institution and the other sloping side of a river (1995:55&27).

Partial homonyms are different in that there is identity of (minimally) one form. They also usually satisfy one or two, but not three of the above conditions (ibid). Taking the verbs find and found as example it will become clear that they have only the forms found in common which are actually grammatically not equivalent. This means, that both verbs satisfy only one of the above mentioned conditions, namely (i) no relation in meaning. The other two conditions (ii) and (iii), which are in fact independent from each other, are not fulfilled (Lyons, 1995:55). This can be proven by a sentence like:

They found hospitals and charitable institutions.

The example sentence above can be interpreted as in the form of present-tense containing the verb form of found or it can be regarded as a statement in past-tense containing a form of the verb find. Both verbs are transitive, and hence can take on a noun-phrase such as hospitals and charitable institutions. As a result, the verb found in the example sentence, and also the whole sentence itself, appears to be ambiguous since they share the noun-phrase as a direct object. In conclusion, Lyons thinks that the reason why it is important for the semanticist to take note of grammatical equivalence, is that in general, it is this which
determines whether homonymy (absolute or partial as the case may be) results in ambiguity (ibid).

2.4. The LINGUISTIC NET

Vocabularies of natural languages are not a random collection of words. They are connected with each other in a logical way, creating a systematically structured linguistic net.

The linguistic net is the result of systematically ordered vocabularies. This systematic ordering manifests itself both in LGP and LSP through sense relations. Fraas points out: "Ebenso wie der Gemeinwortschatz existiert der Fachwortschatz nicht als ungeordnete Menge, sondern kann nach bestimmten Prinzipien systematisiert werden. Zum einen kann man semantische paradigmatische Beziehungen wie Synonymie, Polysemie, Homonymie und Hyperonymie feststellen. Zum anderen können die lexikalischen Systeme von Fachgebiet zu Fachgebiet unterschieden werden, die in ihrem Aufbau und Charakter z.T. erheblich voneinander abweichen." (1998:428). In her statement, Fraas supports the notion of natural language representing a linguistic net, explaining that units of senses, such as homonyms, polysemes, synonyms and hyperonyms etc. contained in this net, are important elements of sense relations.

Sense relations reflect the semantic structuring of natural languages. They hold between several units of vocabulary, and "may be relatively abstract or relatively concrete" (Cruse, 2000:146). Some relations can be abstract in that the classification of certain lexical units is established under a superordinate which artificially has been given an arbitrary name for the purpose of grouping, e.g. animal-dog, fruit-strawberry, vegetable-carrot, flower-tulip, etc. As can be seen, the superordinate terms in the above examples (i.e. animal, fruit, vegetable, flower) are abstract, whereas the subordinate terms (i.e. dog, strawberry, carrot,
tulip) are concrete. Thus, the relation holding between animal-dog, fruit-strawberry, vegetable-carrot, flower-tulip is said to be semantically abstract. On the other hand, the relation between mare-stallion and ewe-ram can be regarded as semantically concrete because the lexical units in these relations are members of one species of animal and the element which differentiates them is their gender (ibid).

Sense relations are one way of looking into natural languages from a semantic perspective. They also reflect the importance of contextuality. Units of senses are contextually sensitive as they are capable of holding key positions not only in paradigmatic but also in syntagmatic sense relations (cf. Sections 2.4.1 and 2.4.2).

Sense relations have the significant characteristics of reflecting the structure of the vocabulary in a language. They are of two kind: paradigmatic and syntagmatic. There are significant differences between each of the two relations which will be discussed below.

2.4.1. Paradigmatic Sense Relations

Paradigmatic sense relations reflect the semantic choices possible at a particular point in a structure. Cruse explains this with the following example (2000:148):

_I'll have a glass of _______._

beer
wine
water
lemonade
etc.

Also, paradigmatic relations involve lexical units which belong to the same syntactic category (ibid). For instance,
We bought some knives, forks, spoons, cutlery.

Paradigmatic sense relations are, for the convenience of exposition, divided into two classes. Firstly, those which are concerned with identity and inclusion between word meanings, and secondly, those which express opposition and exclusion.

Lutzeier (1995:73/80) also divides up the paradigmatic sense relations into two classes; however, he calls the former vertikale Beziehungen (Vertical Relations) instead of relations of identity and inclusion, and the latter horizontale Beziehungen (Horizontal Relations) instead of relations of opposition and exclusion.

2.4.1.1. Paradigmatic Sense Relations of Identity and Inclusion (Vertical Relations)

Hierarchies represent one of the most important structuring principles in paradigmatic sense relations. Branching hierarchies in the lexicon are characterised in two ways: relation of dominance and relation of differentiation (Cruse, 2000:180). In the relation of dominance each node (branching point) holds between the nodes in the lower levels of the hierarchy. Thus, it determines the relationship between A and B, A and C, B and D, B and E, C and F, and C and G (cf. Diagram 2.16). The relation of differentiation is the one which concerns the relationship between B and C, D and E, and F and G (ibid). In well-formed hierarchies which are constant throughout, the branches never overlap (cf. Section 2.4.1.1.(i)).
Diagram 2.16. A branching hierarchy established according to dominance. (Cruse, 2000:180)

Lutzeier explains the rules concerning hierarchical structures mathematically (1995:75):

"Under 'hierarchy' we understand that there is a set M which is ascribed to an element $m_0$ and a binary relation $H$ for which the following principles are established:

(i) $m_0$ is the 'highest' point, i.e. the hierarchical structure has only one starting point.
(ii) all elements of M are in relation with $m_0$.
(iii) upward divisions do not exist, i.e. $\forall x,y,z \in M: (<x,y> \in H \text{ and } <x,z> \in H) \Rightarrow (<x,z> \in H \text{ or } <z,y> \in H)$.
(iv) the relation $H$ is asymmetrical, i.e. $\forall x,y \in M: <x,y> \in H \Rightarrow <y,x> \not\in H$.
(v) the relation $H$ is transitive, i.e. $\forall x,y,z \in M: (<x,y> \in H \text{ and } <y,z> \in H) \Rightarrow <x,z> \in H$.

The first two rules are self-explanatory; however, principles (iii), (iv) and (v) need some explanation. In saying that (iii) upward divisions do not exist, Lutzeier means that there is a connection between units within M starting from the highest point in the hierarchy and going downward whereby branching down into more specific units. Each of these lower
ranking units have a relation to a higher ranking unit, however, an upward division into a unit which is not linked to another higher ranking unit is not possible (cf. Diagram 2.17 below).

![Diagram 2.17. Upward divisions in a hierarchical structure do not exist.](image)

To put it more simply, if D is subordinate to A and B it cannot have another superordinate such as W which has no links to higher ranking nodes, as shown in the diagram.

The fourth principle (iv) simply says that subordinate terms inherit characteristics of their superordinates but not necessarily the other way around. This means that superordinate terms show a tendency towards being more general than subordinate terms. In other words, looking at the meanings intensionally, subordinate terms are richer than superordinate terms. It is obvious that the more general a term is characterised, the higher its position in the hierarchy will be, as it is logical to say that the more specific a term will turn out to be, the lower its rank will be in the structure. Hence, we can easily say that lower ranking terms in a structure inherit certain characteristics from higher ranking terms, however higher ranking terms may not necessarily embrace characteristics of their subordinates. As a matter of fact, low ranking terms do have some characteristics which their superordinates do not have.
Hierarchical structures are in some way linked to prototype theories (cf. Section 2.2.2) since some terms can be good and some others can be less good examples with no clear definition and boundaries. Ungerer and Schmid explain the situation with an example from an attribute listing experiment carried out by Rosch (1996:27): the category involves BIRD with ROBIN at the centre. Each category is ascribed to certain attributes which are shared by the different types of birds. However, the properties each type of bird possesses have different characters, i.e. the combination of attributes each bird embraces is unique. As a result, common attributes that are shared and family resemblances which are partially contained in categories build a chain-like structure; for instance, BIRD1 has the common features of ab, the combination of the attributes a and b, BIRD2 has bc, and BIRD3 has cd etc.

"Understood as a purely logical notion, hyponymy is a transitive relation: if A is a hyponym of B, and B a hyponym of C, then A is necessarily a hyponym of C (consider A=spaniel, B=dog, C=animal)" (Cruse, 2000:152). Principle (v) exactly says the same, namely that if there is a relation between the units x and y, and y and z, then inevitably there is also a relation between x and z. This can be summarised as follows: if x→y and y→z then x→z.

Cruse, who agrees with the idea of transitivity, however, points out that there are several cases where transitivity seems to break down:

A hang-glider is a type of glider.
A glider is a type of aeroplane.
• A hang-glider is a type of aeroplane.

or:
A car-seat is a type of seat.
A seat is a type of furniture.
• A car-seat is a type of furniture.
Cruse thinks that informants are not making their judgements in terms of hyponymy, but in terms of taxonomy, which is not defined logically, and is not transitive. Therefore, we can say that in the above example sentences marked with a * transitivity breaks down because the item hang-glider is not a type of aeroplane, nor is the item car-seat regarded as a type of furniture. The fact that these items are not in relation with the domains of aeroplane and furniture can be based on 'contextual disagreement'.

Cruse (2000:180ff.) divides up lexical hierarchies into two main types: i) taxonomic (classificatory) hierarchies, and ii) meronymic (or part-whole) hierarchies. These will be discussed below.

(i) Taxonomic Hierarchies:

Taxonomic hierarchies are classificatory systems which reflect the way speakers of a language categorise their experiences of the world. They constitute different levels which are well-developed. The most superordinate unit which dominates all the other units in a hierarchy is called the beginner. In order to determine at which level a unit appears one needs to count the nodes starting from the beginner going downward in the structure. Cruse (2000:181) calls the levels established by counting units, or in other words nodes, technical levels. The other possibility is to observe distinctive characteristics of the nodes at different levels. This approach yields substantive levels. The substantive level displaying the richest set of characteristic properties is what psychologists call the basic level, and anthropological linguists, the generic level (Cruse, 2000:181).

Units which appear at lower levels than the basic level usually turn out to be compound words. Cruse also includes: "In hierarchies where the basic-level items are count nouns, the items at higher levels are frequently mass nouns. This is particularly the case for
Whereas the number of levels in taxonomic hierarchies of general languages have no more than five or six levels, the levels of special languages have usually a greater number.

In levels higher than the basic level, lexical gaps may occur quite frequently. This is usually the case when a well-established concept, most likely a hybrid developed out of two or more concepts together, has no corresponding linguistic label and can therefore be not placed anywhere in the hierarchical structure. However, the reason why it cannot be placed easily in the hierarchical structure is sometimes not only because the concept has no corresponding linguistic label, but also due to the fact that the boundaries of the new established concept are not clear enough. This situation may occur especially in real-life taxonomies since "the branches seem to converge and the position in the hierarchy of common lexical items may seem obscure" (Cruse, 2000:183). However, "sometimes a gap in a hierarchy is filled by an extended sense of an item immediately above or below it, thus creating an example of autotaxonomy" (ibid).

(ii) Meronymic Hierarchies:

Meronymic hierarchies are one of the major types of lexical hierarchies. As Cruse states, "probably the most familiar of the extensive meronomies is the segmental version of the human body as seen from the outside" (2000:185). In such hierarchies, where details of parts of a whole are outlined in relation to each other, the borderline between each unit may sometimes turn out to be blurred. For instance, shoulders may be seen as part of arms as well as part of the trunk (ibid). This characteristic of unclear division of units distinguishes meronomies from taxonomies.
CHAPTER 2

LITERATURE REVIEW

Meronymy is the lexical reflex of a part-whole relation. Lutzeier who calls this relation also partonymy provides the following example: in aspect A='body parts, finger' is a partonym to hand (which in this case is a parteronym\textsuperscript{23} to finger) (1995: 76).

With the above example, one realises that sometimes it may not be easy to distinguish hyponymy relations from partonomy relations. One basic factor in making a distinction between the two can be achieved by thinking that 'im Falle der Partonymie-Relation intuitiv gesehen verbleibt man mehr oder weniger auf der gleichen Abstraktionsebene, während man im Falle der Hyponymie-Relation das Gefühl eines Ebenenwechsels in Richtung auf eine größere Abstraktion hin empfindet' (Lutzeier, 1995: 77). If partonomy means remaining in more or less the same level of abstraction then hyponymy involves an alteration in the level of abstraction. For instance, rose entails flower, however fingers may not necessarily entail hand (ibid).

There are also cases of lexical gaps in meronymic hierarchies where, for example, the main functioning part of an object has no name, e.g. a spoon has two main parts, the handle and the ????\textsuperscript{24} (Cruse, 2000: 187). Nevertheless, different languages see and experience the world in different ways. Hence, dividing up objects into smaller units and naming each unit occurs in every language with differences, although the difference may be minor. An example from Turkish would be the term ense which means back of the neck. The reason for the absence of such a term in English when questioned may be traced back to a case of lexical gap or conceptual gap. In many cases, this distinction is not easy to make.

\textsuperscript{23} Meronym and partonym are synonymous expressions for the same occurrence as opposed to holonym and parteronym respectively (cf. Cruse, 2000: 153 & Lutzeier, 1995: 76).

\textsuperscript{24} Here, some of Cruse's informants respond to the question suggesting bowl and body (2000: 187).
2.4.1.2. Paradigmatic Sense Relations of Opposition and Exclusion (Horizontal Relations)

This section will concentrate on the issues of contrastive relations, such as incompatibility, complementaries, antonymy, reversives and converses.

(i) Incompatibility:

Incompatibles are terms which denote classes which do not share any members. About an incompatibility relation between two lexical items we can say that considering the existence of both there is contrarity. Lutzeier (1995:80) explains this as follows:

"Under aspect A there are the lexical elements $\alpha_1$, $\alpha_2$, ... $\alpha_1$ is incompatible with $\alpha_2$ if from the existence of $\alpha_1$ the non-existence of $\alpha_2$ can be concluded and vice versa."

So, for instance, if aspect A='vehicle' then the nouns car, bicycle, train, aeroplane are all amongst each other incompatible (ibid) since a car cannot be a bicycle, or a train cannot be an aeroplane, etc. They have nothing in common apart from the fact that they are hyponyms of the class vehicle. This is a typical feature of all subordinate terms. Each of them is related to all the others by the relation of incompatibility (Cruse, 2000:165). Hence, if something is a mouse, then it is not a dog, horse or elephant: nothing in the world can belong simultaneously to the class of mice and the class of dogs (ibid) although they might belong to the class of animal.

In the same way, the verbs laughing and crying under the aspect of emotions can be regarded as incompatible. It is important to recognise that in relations of incompatibility one can only deduce the negative from the positive and not the opposite way (Lutzeier, 1995:80-1). Thus, describing something as a car implies that it is not, say, a lorry, but describing something as not a car does not imply that it is a lorry.
(ii) Complementaries:

"Complementaries constitute a very basic form of oppositeness and display inherent binarity in perhaps its purest form" (Cruse, 2000:168). So for instance, pairs like dead:alive, true:false, obey:disobey, inside:outside, continue:stop, possible:impossible, stationary:moving, male:female are examples for complementaries. Cruse continues: "[...] if anything (within the appropriate area) falls into one of the compartments, it cannot fall into the other; and if something does not fall into one of the compartments, it must fall into the other (this last criterion distinguishes complementaries from mere incompatibles)" (ibid).

Lutzeier (1995:82) has more of a mathematical explanation for the relation of complementaries:

"Under aspect A there are the lexical elements $\alpha_1, \alpha_2, \ldots, \alpha_1$ is complementary with $\alpha_2$ if from the existence of $\alpha_1$ the non-existence of $\alpha_2$, from the existence of $\alpha_2$ the non-existence of $\alpha_1$, from the non-existence of $\alpha_1$ the existence of $\alpha_2$, and from the non-existence of $\alpha_2$ the existence of $\alpha_1$ can be concluded."

(iii) Antonymy:

Besides its characteristics shared also by incompatibility, antonymy has the feature of gradability (Lutzeier, 1995:81). Hence, antonymous relationships consist of adjectives which are opposites.

Cruse divides up antonymy into three kinds (2000:169-171):

- Polar antonyms
- Equipollent antonyms
- Overlapping antonyms
In polar antonyms,

- both terms are fully gradable,
- they occur normally in the comparative and superlative degrees,
- they indicate degrees of some objective, unidimensional physical property, prototypically one which can be measured in conventional units such as centimetres, kilograms, miles per hour, etc.
- they are incompatibles, but not complementaries,
- comparative forms stand in a converse relationship,
- the comparative forms of both terms are impartial, that is to say, use in the comparative does not presuppose that the term in the positive degree is applicable,
- one of the terms yields an impartial question and an impartial nominalisation.

In equipollent antonyms neither term is impartial, therefore hotter presupposes hot, and colder presupposes cold. Equivalent antonym pairs denote sensations, such as hot:cold, bitter:sweet, painful:pleasurable, or emotions, such as happy:sad, proud of:ashamed of.

In overlapping antonyms all overlapping antonym pairs have an evaluative polarity as part of their meaning, e.g. good:bad, kind:cruel, clever:dull, pretty:plain, polite:rude.

(iv) Reversives:

Reversivity involves 'movement' in opposite directions between two terminal states, i.e. "Um von Reversität sprechen zu können, muß neben der Inkompatibilität folgendes speziell gelten: Beim Vergleich der beiden angesprochenen Geschehen muß der Anfangszustand des ersten Geschehens der Endzustand des zweiten Geschehens und der Endzustand des ersten Geschehens der Anfangszustand des zweiten Geschehens sein" (Lutzeier, 1995:84). This means that, besides fulfilling the conditions of incompatibility reversives have the characteristics of initiating a movement in contrast to ending it, and vice versa.
CHAPTER 2

LITERATURE REVIEW

Reversives are verbs denoting literal or abstract movement in opposite directions, such as aufsperren: zusperren under the aspect A='Tätigkeit', aufmachen: zuknallen ∈ A='Umgehen mit einer Tür', aufsteigen: abstürzen ∈ A='Flugphasen' etc. (Lutzeier, 1995: 84-85). The reversivity of more abstract examples resides in a change (transitive or intransitive), e.g. tie:untie, dress:undress, roll:unroll, mount:dismount (Cruse, 2000: 171).

(v) Conversives:

Conversives are seen as a subtype of directional opposites as well as a type of synonym. Taking the example with the three objects A, B and C, as provided by Cruse (2000: 172), it can be said that A is above B, or B is below A (see representation below):

\[
\begin{array}{c}
A \\
B \\
C
\end{array}
\]

In this case above and below are both conversives which express synonymous arguments conditioned by the order of description.

Another example Cruse has given to demonstrate that conversives can denote orientations in opposite directions are the relations of B with regard to A and C. Clearly A is above B, and C is below B, hence above and below are directional opposites (ibid).

2.4.1.2.1. Gegensinn as a Form of Lexical Ambiguity

Gegensinn, seen as a specific form of polysemy, first appeared with Carl Abel and his studies on Egyptian hieroglyphs in 1884. Nevertheless, this phenomenon, where a lexical unit has opposite senses, went almost unnoticed for the next hundred years or so, until further investigations were undertaken about its linguistic nature. Lutzeier identifies the characteristic features of Gegensinn in a broad fashion: "eine lexikalische Form weist die Eigenschaft
'Gegensinn' auf, falls ihr gegensätzliche Lesarten zugeordnet sind" (1997:382). With this initial thought, the essential question arises as to whether Gegensinn is an element of polysemy or homonymy. Taking the notion of "eine Form – mehrere Inhalte" as the starting point, when observed synchronically as well as diachronically (refer to Figure 2.1 and Figure 2.2), Gegensinn has been confirmed to represent a case for polysemy rather than homonymy (Lutzeier, 1997:382-3).

Figure 2.1. Gegensinn in diachrony (Lutzeier, 1997:382).

verb *ferre* lat.
S='tragen'
S1='zahlen, etw. weggeben'
S2='etwas erhalten'

noun *valetudo* lat.
S1='guter Körperzustand'
S2='schlechter Körperzustand, Krankheit'

adjective *untersetzt* ger.
S1='kräftig, hochgewachsen, muskulös'
S2='gedrungen, dicklich'
In a much narrower sense, however, “eine polyseme lexikalische Einheit weist die Eigenschaft ‘Gegensinn’ auf, falls unter ihren Lesarten untereinander gegensätzliche Lesarten vorkommen” (Lutzeier, 1997:381-3). Hence, we can be certain that Gegensinn is a special case for lexical polysemy.

It is important to recognise that when dealing with Gegensinn we are actually not dealing with two separate entities which are independently embedded at the content level. It is rather a case of two entities forming a unit of completeness, i.e. in extreme cases the existence of one element conditioning the non-existence of another: “Gegensinn bringt ja mit sich, daß mit ein und derselben Form gegensätzliche Inhalte – im Extremfall prinzipiell A und non-A – ausgedrückt werden können” (Lutzeier, 1997:384). Which sense the concept embraces, however, is dependent on the situative context expressed in a linguistic or non-linguistic manner (ibid).
By extending current theories on the different types of paradigmatic sense relations of exclusion and opposition, i.e. horizontal relations (cf. Section 2.4.1.2), we can observe Gegensinn as a form of lexical oppositionness (Lutzeier, 1997:389). The following will outline the different types of Gegensinn with appropriate examples:

(I) Gegensinn of Incompatibility:

"Ein lexikalisches Element weist Gegensinn inkompatibler Art auf, falls es zwei Lesarten besitzt, die bezüglich eines Aspektes konträr zueinander sind."

(Lutzeier, 1997:389)

A lexical unit represents a case for incompatibility, if it has two senses within one aspect which contradict each other. So as to demonstrate this, Lutzeier takes the German verb einstellen as an example. Under the aspect A='existence in an enterprise', one of the senses of einstellen denotes S1='to initiate sth' and the other denotes S2='to terminate sth'. Below are the following two syntagmas analysed by Lutzeier:

S1: die firma stellt neue arbeitskräfte ein
S2: die firma stellt die produktion von mikroskopen ein

In S1 the verb einstellen is clearly associated with people, employees, whereas in S2 it is more of an association with products, machinery etc. The distinction between the two senses becomes clearer if we consider the following: in German we have the incompatible pair of <einstellen, entlassen, 'Arbeitsverhältnis'> for employees, and we have the incompatible pair of <beginnen, einstellen, 'Produktion'> for products (ibid).

__25__ For a general investigation into semantic relations of senses within the same lexeme and a thorough analysis of the verb einstellen see also Lutzeier, 2001:77-80.
(ii) Gegensinn of Antonymy:

"Ein lexikalisches Element weist Gegensinn antonymischer Art auf, falls es sich um ein-graduierbares Element handelt und es zwei Lesarten besitzt, die bezüglich eines Aspektes konträr zueinander sind."

(Lutzeier, 1997:390)

Lutzeier sets about analysing the adjective elend by giving the following examples:

S1: sie führt am rande der gesellschaft ein elendes auskommen
S2: er leidet unter elenden kopfschmerzen

Clearly, S1 expresses 'in geringem, ärmlichem Ausmaß' and S2 denotes 'in großem, übermäßigem Ausmaß', both taking place under the aspect A='Zustandsbeschreibung'. However, considering the structure holz fällen ist eine elende arbeit, we cannot speak of a clear cut distinction for the usage of elend in one or the other sense. The preceding structure can be assigned to either of the senses, or even both (Lutzeier, 1997:390).

(iii) Gegensinn of Complementarity:

"Ein lexikalisches Element weist Gegensinn komplementärer Art auf, falls es zwei Lesarten besitzt, die bezüglich eines Aspektes kontradiktorisch zueinander sind."

(Lutzeier, 1997:391)
Gegensinn of complementary kind is the most extreme type of sense oppositeness. Lutzeier analyses the verb *abhalten* focusing on its senses S1='etwas kommt nicht zustande' and S2='etwas kommt zustande' (aspect A='Bestehen eines Ereignisses'). He provides the following examples:

S1: *gute kleidung hält die kälte ab / geistesgegenwart hält oft unheil ab*
S2: *die regierung will im frühjahr wahlen abhalten*

In the above examples we can observe a clear bordering line between the two senses. In S2 *abhalten* can be associated with organisations, whereas in S1 the association with organisations has to be ruled out (Lutzeier, 1997:391).

(iv) Gegensinn of Conversivity:

"Ein lexikalisches Element weist Gegensinn konverser Art auf, falls es für einen Aspekt zwei relationale Lesarten mit übereinstimmenden Argumentzahlen besitzt, die konträr zueinander sind und das gemeinsame Bestehen nur unter der Vertauschung der Besetzung gewisser Argumentpositionen gilt."

(Lutzeier, 1997:391)

The verb *leihen* in German with the senses S1='x1 verleiht y1 an z1' and S2='x2 leiht sich y2 von z2' under the aspect A='Transfer' sets a good example for Gegensinn of conversives (Lutzeier, 2001:78). The verb *leihen* appears to be polysemous since it is not possible to identify which of the senses it embraces in a sentence like *Hans leihet ein buch*. However *leihen* has in German the corresponding forms *jmd. etwas verleihen* and *sich etwas ausleihen*, hence ambiguity can be overcome easily when one of these forms are used (Lutzeier,1997:392).
(v) Gegensinn of Reversivity:

"Ein lexikalisches Element weist Gegensinn reversibler Art auf, falls es für einen Aspekt zwei Lesarten besitzt, die konträr zueinander sind und jeweils Geschehen mit klar definierten Anfangs- und Endzuständen ansprechen und diese Zustände im Vergleich der beiden Geschehen untereinander vertauscht sind."

(Lutzeier, 1997:392)

Lutzeier suggests the verb köpfen in German as an example for Gegensinn of reversivity. Its senses S1=’das obere Ende von etwas entfernen’ and S2=’einen Kopf anbringen’ take place under the aspect A=’Etwas in Form bringen’ (1996:127):

S1: er köpf sein ei zum frühstück
S2: die maschine köpf die nadel

Practicalities

Reasons for investigating Gegensinn, is not only about identifying lexical ambiguity in language. It also involves the compilation of dictionaries specialised in sense opposition. According to Lutzeier (2002a), there are at least three reasons why a dictionary of Gegensinn should be created:

- "Whilst there are well known dictionaries of antonyms in all major languages, i.e. dictionaries which represent oppositeness at the macrolevel, to my knowledge there are no dictionaries of Gegensinn in any major language except for Classical Arabic (addad), i.e. we do not have dictionaries for oppositeness at the microlevel.

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there are more than just a handful of words with Gegensinn in German, i.e. the actual number justifies a collection in form of a dictionary.

As it is going to be a specialist dictionary anyway, it gives us the chance to explore new formats of dictionary entries in general and therefore make a contribution towards improved formats and, hopefully, some progress in lexicography in general.

He also suggests a format for individual entries which consists of thirteen cells (ibid):

1. **Lemma**
2. **Part of speech**
   (minimal grammatical information)
3. **Intradomain/Interdomain**
   (contrasts within one and the same domain; contrasts across different domains)
4. **Aspect**
   (general background/guarantees similarity)
5. **Sense 1**
6. **Sense 2**
   (in the case of a contrast across different domains, this information has to be added)
7. **Instantiation 1**
   (constructed examples)
8. **Instantiation 2**
   (constructed examples)
9. **Example(s)1**
   (authentic, optional)
10. **Example(s)2**
    (authentic, optional)
11. **Principle of Gegensinn**
    (the dictionary will have a list of these principles and an index of the lexical items)
12. **Type of Gegensinn**
13. **Question of ambiguity**
    (commentary type of cell: typical collocations, etc.)
It should be emphasised that Gegensinn is a normal occurrence in natural language. Case studies will be carried out in Chapter 5 and Chapter 6, in order to show the complexity of this highly interesting phenomenon. So far, we have reviewed paradigmatic sense relations. We will now give focus on the syntagmatic sense relations.

2.4.2. Syntagmatic Sense Relations

A sentence, usually, is the result of certain lexical units building a string of elements in harmony. Syntagmatic sense relations are the reflection of such relationships where each element in a sentence has a particular connection to the other. Cruse gives the following three examples to clarify this (2000:148-49):

(a) The girl ran across the field.
(b) The girl sat across the field.
(c) The smell ran across the field.

The first example (a) is acceptable, whereas the remaining two, (b) and (c), are not\(^{26}\). The oddness of (b) and (c) lies in the fact that in (b) it is the combination of verb and prepositional phrase, and in (c) it is the combination of subject and verb.

Cruse thinks that in each case, the set of possibilities from which the choice was made is not completely free, but is constrained by the other elements in the sentence, in the sense that a choice from outside a certain range will result in semantic incoherence (2000:149). Hence, syntagmatic sense relations are an expression of coherence constraints whereas paradigmatic sense relations operate within the sets of choices. Each such set represents the way the language articulates, or divides up, some conceptual area, and each

\(^{26}\) Only if the meaning of each sentence was to be taken literally. Sentence (c) would be quite acceptable if considered as a metaphoric elaboration and not understood literally.
displays a greater or lesser degree of systematic structuring. Paradigmatic relations are an expression of such structuring (ibid).

It is known for a fact that in language certain lexical units belong together, and others do not belong together. Whether combinations of certain lexemes can be regarded as 'well-formed', can be observed on the content level. In other words, combinations of particular string of words in a discourse, sentence, or syntactic structure can sometimes be semantically compatible and sometimes semantically incompatible. Investigations into syntagmatic structures mainly aim to identify whether, or to what extent, certain combinations are normal or abnormal. This normality or abnormality in a given combination can be determined by the wider context (Cruse, 2000:220), i.e. it is suggested that in some cases oddness can be lifted by contextual manipulation. When default readings of the constituent items of a sentence, for instance, are not well-formed, one needs to consider the effect of the context which will enable a relevant selection of interpretations to be made (ibid). This is an important factor in the disambiguation process of the oddness in our mental lexicons.

Associations are regarded as spontaneous answers to a given lexeme acting as a stimulus (Lutzeier, 1995:91). The relation between stimulus-lexeme and response is certainly not coincidental. Psychologists have discovered that associations shape the basis for memory. In this respect, it is hardly possible to talk about the mental lexicon and ignore the importance of associations. Aristotle once emphasised that with an association our mind tends to establish similarity, contrast, and relatedness and builds systematic connections between elements received as response (ibid).

It is also a well-known fact that words prefer certain partners to others. "The notion of (collocational) affinity refers to the ratio between the actual co-occurrence of two words, and their predicted co-occurrence on the basis of their individual frequencies in the language"
A number of factors lead to collocational affinity. Below are some co-occurrence patterns outlined with examples.

(i) Extra-linguistic factors:

One of the reasons why a word prefers a certain collocation to the other lies in the extra-linguistic world rather than in the language itself. For example, the sentence Jane fried the egg is more frequent than Jane fried the lettuce, because it is assumed to be more of a common fact based on mutual understanding that Jane would fry an egg rather than a lettuce. "Frequency in the extra-linguistic world is not the only consideration, since something may be very frequent, but not often noticed or realized, and is therefore not often talked about" (Cruse, 2000:232). Another important factor is the significance of a concept: the more significant something is, the more it gets talked about.

(ii) Stereotypic combinations:

Stereotypic combinations lie on the border between the linguistic and the non-linguistic. It needs to be distinguished from default patterns, or clichés, as they are called. In clichés, it is a matter of something being expressed in a standardised way. In stereotypic combinations, however, it is a matter of something standardised being expressed or more precisely being thought, e.g. the co-occurrence of beautiful with flower(s). Stereotypic combinations are more of a cultural rather than a linguistic characteristic of collocational affinity (Cruse, 2000:233).

(iii) Default patterns (Clichés):

There is a distinction to be made "between patterns of co-occurrence, divergence from which leads to anomaly of some kind, and those where there is not necessarily any anomaly, merely a degree of markedness or heightened salience" (Cruse, 2000:233). For
instance, in the case of *barefaced lie*, words such as *shameless, brazen, unabashed, insolent* or *blatant* would be semantically compatible, however less 'automatic' (ibid).

(iv) 'Arbitrary' collocational restrictions:

The fact that meanings of words have an effect on their collocational affinity stares every observer in the face. A foreign language learner would not need to be told that *The farmer killed the rabbit* is more likely to occur in English than *The farmer killed the gate*. However, there are also selectional preferences which are arbitrary in the sense of not being predictable from general knowledge, e.g. people say *high wind* but *heavy rain* but not *high rain* or *heavy wind* (Cruse, 2000:233).

Porzig (cf. 1973), for instance, developed the notion of semantic fields which was founded upon the relations of sense holding between pairs of syntagmatically connected lexemes, strictly speaking relations holding within bipartite *syntagms*, i.e. collocations, composed ‘typically’ of a noun and a verb or a noun and an adjective. The two lexemes in each such syntagm are bound together by what he calls an *essential meaning-relation* ("wesenhafte Bedeutungsbeziehung").

Porzig in his *Das Wunder der Sprache* (1950:120-121) reflects on the issue of *collocationally restricted lexemes*: "Womit *beißt* man? Natürlich mit den Zähnen. Womit *leckt* man? Selbstverständlich mit der Zunge. Wer *bellt*? Der Hund. Was fällt man? Bäume. Was ist blond? Menschliches Haar. Die hier an ein paar Beispielen aufgezeigte Tatsache ist so alltäglich, daß man geneigt ist, sie zu übersehen und vor allem ihre Wichtigkeit zu unterschätzen". Thus, although lexemes vary with regard to their flexibility of being able to be combined in *syntagms* with other lexemes (e.g. *good* or *bad* with almost any noun), some

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27 In Lyons we find the following translation of Porzig’s quote: “What does one bite with? With the teeth, of course. What does one lick with? With the tongue, obviously. What is it that barks? A dog. What does one fell? Trees. What is it that is blond? Human hair. The fact that is here illustrated by
lexemes can be combined only with certain others (e.g. rancid with butter) (Lyons, 1977: 261-262).


It also needs mentioning that syntagmatic relations are the reflection of certain grammatical constructions. Cruse provides the following example to show that syntagmatically connected lexical items may sometimes appear as grammatically anomalous (2000:224):

*The chair saw John.*

However, *chair* and *saw* do not clash in the following syntagma:

*John saw the chair.*

Moving from the above example, Cruse sets up three basic relations (ibid):

- *philonyms* : go together normally
  
  *SAW the CHAIR*

- *xenonyms* : clash
  
  *HEARTFELT INSOMNIA*

- *tautonyms* : produce pleonasm
  
  *an ACADEMIC UNIVERSITY*

means of a few examples is so banal [alltäglich] that we are inclined to overlook it and above all to underestimate its importance" (Lyons, 1977:261).
Cruse also points out that there exists a directionality between lexical items. We will mention only one aspect of it here: Directionality concerns which item does the selecting (referred to as selector) and which item gets selected (referred to as selectee). He explains that the directionality is determined by grammar, and that, in general, adjectives select their head nouns and verbs select their complements, and that nouns are always selectees (2000:225-226).

2.5. COMPONENTIAL ANALYSIS

Semantic atoms reflect the meaning of a lexical unit (be it a simple or a complex one). The search for semantic atoms has long been an issue of intense debate. Prototype theorists, who aim to develop an analogical way of analysing meaning, in contrast to the digital characteristics of componential analysis, also known as lexical decomposition, oppose the idea of breaking down lexical units into their monadic components. However, there are strong arguments for using componential analysis as a means of analysing meaning, which are set out below.

2.5.1. Reasons for Componential Analysis

According to Cruse, there are several reasons for componential analysis (2000:240). The following will give some insight:

(i) Partial Similarities or Differences between Words:

"One such reason is the intuition that a pair of words may be partially similar in meaning and partially different. [...], take mare and stallion. The similarity between these can be expressed by saying that they are both horses, that is, they share the component [HORSE].
and they differ in that *mare* has a component [FEMALE] not shared by *stallion*, and *stallion* has [MALE], which is not present in the meaning of *mare*. Or take the case of *heavy* and *light*: these share the component of [WEIGHT], and differ in that *heavy* has a component [MORE THAN AVERAGE], where *light* has [LESS THAN AVERAGE]. [...] Many systems of lexical decomposition seem to aim at something of this sort" (ibid).

(ii) Correlations:

"The examples of partial similarity which provide the most convincing evidence for lexical decomposition are correlations, where the proposed components can be seen to be distributed independently of one another." (Cruse, 2000:240). Cruse provides the following examples:

(1)  

<table>
<thead>
<tr>
<th>[MALE]</th>
<th>[FEMALE]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[SHEEP]</td>
<td>ram  ewe</td>
</tr>
<tr>
<td>[HORSE]</td>
<td>stallion mare</td>
</tr>
</tbody>
</table>

(2)  

<table>
<thead>
<tr>
<th>[ADULT]</th>
<th>[YOUNG]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[HUMAN]</td>
<td>adult  child</td>
</tr>
<tr>
<td>[SHEEP]</td>
<td>sheep  ewe</td>
</tr>
</tbody>
</table>

(3)  

<table>
<thead>
<tr>
<th>[ADULT]</th>
<th>[YOUNG]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[MALE]</td>
<td>man  boy</td>
</tr>
<tr>
<td>[FEMALE]</td>
<td>woman  girl</td>
</tr>
</tbody>
</table>
Cruse concludes with the remark that a two-dimensional correlation does not necessarily give a full analysis of the meaning of a word (2000:241).

(iii) Discontinuities:

"In some cases there is more direct evidence of the functional discreteness of a portion of meaning, in the form of a discontinuity of some sort in the semantic structure of a sense." (Cruse, 2000:241). Here is an example: "The fact that The astronaut re-entered the atmosphere is appropriate even on the astronaut's first trip into space, indicates that we must analyse "re-enter" into (at least) MOVE and IN, since in the case mentioned, the recurrence signalled by re- applies only to IN, that is, the astronaut must on some previous occasion have been located inside the earth's atmosphere." (ibid).

(iv) Simplex - Complex Parallels:

Cruse states that in many cases, grammatically simple forms have semantic properties either very similar to, or closely parallel to, complex forms (2000:242). He provides the following example: "Consider the case of false and untrue. In the case of untrue, the notions [NOT] and [VERACIOUS] (let's say) are expressed by different morphemes, so the meaning of untrue must be analysed as complex. But what about false? There is no morphological evidence for complexity, but in view of the close meaning relationship to untrue, it would seem almost perverse not to give false the same semantic analysis." (ibid).

2.5.2. The Aims of Componential Analysis

(i) Reduction:

Many componentialists have been aiming at reductive analysis of meaning. Hjelmslev, for instance, believes that the simpler meaning units in question are essentially the meanings of other words. He, therefore, hopes to create a basic vocabulary in terms of which all other
meanings could be expressed (Cruse, 2000:243). The desire to arrive at a vocabulary which
sets the foundations of meaning has already found its applications: many modern dictionaries,
especially those targeted at foreign learners, such as the COBUILD dictionary and the
OALD\textsuperscript{28}, deliberately aim to define all words using a restricted defining vocabulary (Cruse,
2000:244). Cruse continues to give examples based on a set of words such as the following:

\begin{center}
\begin{tabular}{ccc}
\textit{rise} & \textit{raise} & high \\
\textit{fall} & \textit{lower} & low \\
\textit{lengthen} (1) & \textit{lengthen} (2) & long \\
\textit{shorten} (1) & \textit{shorten} (2) & short \\
\end{tabular}
\end{center}

Cruse indicates that \textit{lengthen} (1) and \textit{shorten} (1) are intransitive, like \textit{rise} and \textit{fall};
\textit{lengthen} (2) and \textit{shorten} (2) are transitive/causative like \textit{raise} and \textit{lower} (2000:244).

He then performs the following analysis:

\begin{center}
\begin{tabular}{l}
\textit{rise} = \text{[BECOME] [MORE] [HIGH]} \\
\textit{fall} = \text{[BECOME] [MORE] [LOW]} \\
\textit{raise} = \text{[CAUSE] [BECOME] [MORE] [HIGH]} \\
\textit{lower} = \text{[CAUSE] [BECOME] [MORE] [LOW]} \\
\textit{lengthen} (1) = \text{[BECOME] [MORE] [LONG]} \\
\textit{shorten} (1) = \text{[BECOME] [MORE] [SHORT]} \\
\textit{lengthen} (2) = \text{[CAUSE] [BECOME] [MORE] [LONG]} \\
\textit{shorten} (2) = \text{[CAUSE] [BECOME] [MORE] [SHORT]} \\
\end{tabular}
\end{center}

Cruse does not seem to be satisfied with this analysis. He continues to perform a more radical
analysis by adding a reference point (2000:246):

\begin{center}
\begin{tabular}{l}
\textit{raise} = \text{[CAUSE] [BECOME] [MORE] [HEIGHT] [REF: X]} \\
\textit{lower} = \text{[CAUSE] [BECOME] [LESS] [HEIGHT] [REF: X]} \\
\end{tabular}
\end{center}

\textsuperscript{28} For this reason, the OALD has been selected as the most relevant linguistic tool to be used in
componential analysis during our Case Studies.
He explains: “Here we introduce the notion of a reference point: to raise something is to cause it to be at a greater height than some reference point, normally the height it was before the act of raising took place. This notion of reference point can be used also in the analysis of high and low (and mutatis mutandis, long and short) since something which is high is at a greater height (and something low is at a lesser height) than some reference point, often an average of some sort.” (ibid).

\[
\begin{align*}
\text{high} & = \text{[MORE] [HEIGHT] [REF: Average]} \\
\text{low} & = \text{[CAUSE] [BECOME] [LESS] [HEIGHT] [REF: Average]} \\
\text{long} & = \text{[CAUSE] [BECOME] [MORE] [HEIGHT] [REF: Average]} \\
\text{short} & = \text{[CAUSE] [BECOME] [LESS] [HEIGHT] [REF: Average]}
\end{align*}
\]

The addition of a reference point, or the specification of the domain, enables us to perform componential analysis with lesser components than necessary.

Componential analysis aims to be reductive. It makes extensive use of correlations to denote the meaning of a lexical item by using basic vocabulary. Cruse emphasises that there are limitations to componential analysis: "Two are worth emphasising at this point. The first is that the proportion of the vocabulary which lends itself to this sort of analysis is relatively restricted: the majority of words remain unanalysed. Areas which have proved amenable to componential analysis are, for example, kinship terms, terms referring to male/female/young/adult animals and humans, and binary oppositions like those discussed above. The second point is that even when a word can be analysed, like stallion, the analysis leaves much semantic knowledge unaccounted for." (2000:246).

Universality is an important issue in componential analysis. In the several systems of lexical decomposition the aim is to identify sets of semantic components which are shared by any natural language. In 1972, Anna Wierzbicka brought forward a radical analysis of word meaning. In her book Semantic Primitives, for the first time she proposed a list of elements
as the fundamental units of meaning which she called semantic primes or primitives (Wierzbicka, 1972:15-16). In her book Semantics she provides the following definition of semantic primes:

"The elements which can be used to define the meaning of words (or any other meanings) cannot be defined themselves; rather, they must be accepted as 'indefinibilia', that is, as semantic primes, in terms of which all complex meanings can be coherently represented"

(Wierzbicka, 1996:10)

A strong supporter of the above stated principle on semantic primes is Goddard who states that "there exists a finite set of undecomposable meanings - semantic primitives. Semantic primitives have an elementary syntax whereby they combine to form 'simple propositions'." (Goddard, 1994:8). In his Semantic Analysis, we also find the following definition for semantic primitives: "a set of basic terms which cannot be defined or reduced further, where we would reach the endpoint of all the analysis. Such elementary meanings are called semantic primitives" (Goddard, 1998:12).

Wierzbicka argues that all human languages have a universal conceptual base (1996). She believes that conceptual primitives can be found through in-depth analysis of any natural language; but also, that the sets of primitives identified in this way would 'match', and that in fact each such set is just one language-specific manifestation of a universal set of fundamental human concepts (1996:13). She states that universal semantic primitives "offer us convenient and reliable tools for investigating the universal and the language-specific aspects of human cognition and human conceptualization of the world." (Wierzbicka, 1996:456).
Wierzbicka acknowledges the existence of universal semantic primitives with two provisos: the first states that she fully accepts "the Humboldtian view that despite the presence of universals, on the whole the semantic systems embodied in different languages are unique and culture-specific"; the second states that "the presence of 'embodied' (that is, lexicalized) universals does not mean perfect equivalence in language use" (1996:15).

In years, the list of semantic primitives which Wierzbicka proposed became modified and more and more elements were added. So, for instance, in her book Lingua Mentalis (1980) she added the elements BE IN A PLACE and KNOW, whereby eliminating FEEL. In Goddard (2002:14) we find her latest list, much more extensive and with newer domains; domains such as Life and Death, Logical Concepts, Similarity, and Existence and Possession have been added to the list, whereas some of the domains, such as Metapredicates, Interclausal Linkers, Imagination and Possibility, and Words have been removed. Other domains, such as Augmentor and Intensifier, Partonomy and Taxonomy, and Actions, Events and Movements have been combined to form separate units of domains. It is also interesting to note that some elements have been replaced by alternative elements, e.g. UNDER by BELOW in the domain Space.

<table>
<thead>
<tr>
<th>Substantives</th>
<th>I, YOU, SOMEONE, PEOPLE, SOMETHING/THING, BODY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determiners</td>
<td>THIS, THE SAME, OTHER</td>
</tr>
<tr>
<td>Quantifiers</td>
<td>ONE, TWO, SOME, ALL, MUCH/MANY</td>
</tr>
<tr>
<td>Evaluators</td>
<td>GOOD, BAD</td>
</tr>
<tr>
<td>Descriptors</td>
<td>BIG, SMALL</td>
</tr>
<tr>
<td>Mental predicates</td>
<td>THINK, KNOW, WANT, FEEL, SEE, HEAR</td>
</tr>
<tr>
<td>Speech</td>
<td>SAY, WORDS, TRUE</td>
</tr>
<tr>
<td>Actions, events and movement</td>
<td>DO, HAPPEN, MOVE</td>
</tr>
</tbody>
</table>
Table 2.4. Lexical universals as proposed by Wierzbicka (Goddard, 2002:14).

It is advisable to view the proposed primes as provisional, like all results in science. However, it needs emphasis that some of the proposed primes have 'matured' to a stronger status in that they have proven themselves to be indispensable through numerous explications. Hence, the oldest members of the proposed list, dating back to Wierzbicka 1972, are: I, YOU, SOMEONE, SOMETHING, PART, THIS, SAY, HAPPEN, WANT, and FEEL (Goddard, 2002:13).

Cruse provides the following example to give us an idea of a typical Wierzbickan analysis (2000:248):

X punished Y for Z:

(a) Y did Z.
(b) X thought something like this:
(c) Y did something bad (Z).
(d) I want Y to feel something bad because of this.
(e) It will be good if Y feels something bad because of this.
(f) It will be good if I do something to Y because of this.
(g) X did something to Y because of this.

Cruse concludes that Wierzbicka performs analyses "couched in the form of sentences. This means that there must also be a set of semantically interpretable syntactic primitives. This aspect of the system is under investigation, but is currently less well developed." (ibid).

(ii) Lexical Contrasts and Similarities:

This approach to componential analysis considers lexical contrasts and similarities as its aim. Each component is regarded as the "smallest possible difference" between senses of lexical items. Lexical items close in meaning share more components than those which are distant (Cruse, 2000:248). Cruse provides an example where the aim is to distinguish chair from every other word in English. Each feature provided in brackets indicates a contrastive component in meaning:

- chair vs. thought [CONCRETE]
- vs. cat [INANIMATE]
- vs. trumpet [FURNITURE]
- vs. table [FOR SITTING]
- vs. sofa [FOR ONE]
- vs. stool [WITH BACK]

According to the above analysis the most distant word to chair is thought, and the closest are sofa and stool as they share five out of the six components from the list (Cruse, 2000:249). Cruse thinks that "if the above analysis is correct and complete, then there is nothing designated by a term in English which is not a chair and which shares all six features". He adds that this does not mean that chair cannot be further subdivided into, for instance,
armchair which would possess all the features of chair, plus [WITH ARMS]. He mentions, however, that this cannot be a true contrast, since "an armchair is a kind of chair" (ibid).

(iii) Lexical Relations and Entailments:

Componental analysis can, to a certain extent, be the reflection of sense relations. Cruse in his Meaning in Language focuses on two types of sense relations concerning paradigmatic relations: the relation of inclusion (vertical relations), as in the relationship between dog and animal, tulip and flower (referred to as hyponymy), and the relation of exclusion (horizontal relations), as in the relationship between dog and cat, tulip and rose (referred to as incompatibility) (2000:250). Here, we will describe only the former.

Cruse regards the relation of inclusion as the easier: "we can say that word W₁ is a hyponym of word W₂ iff all the components of W₂ are included in the componental specification of W₁." (ibid). He explicates the following hyponymous relationships:

- stallion [ANIMAL] [EQUINE] [MALE] is a hyponym of horse [ANIMAL] [EQUINE]
- kitten [ANIMAL] [FELINE] [YOUNG] is a hyponym of cat [ANIMAL] [FELINE]
- chair [CONCRETE] [INANIMATE] [FURNITURE] [FOR SITTING] [FOR ONE] [WITH BACK] is a hyponym of furniture [CONCRETE] [INANIMATE] [FURNITURE]
The above examples are fairly simple. However, there are also some problematic instances: Cruse believes that we need some way of filtering out cases like *kill [CAUSE] [BECOME] [NOT ALIVE]* and *die [BECOME] [NOT ALIVE]*, since "although the specification of *kill* includes that of *die*, *kill* is not a hyponym of *die*, and *John killed* does not entail *John died." (ibid).

(iv) Anomaly:

Lexical decomposition is the usual method applied in analysing whether a combination of words is normal or not. This method requires the identification of selectional restrictions, i.e. features which accompanying words must contain for a normal sentence to result. Cruse believes that this particular componential system helps to account for contextual disambiguation. He provides the following example: "[...] we can explain why in *John expired*, *expired* means "died", while in *My driving licence has expired*, it means "has become invalid". The solution is to specify the relevant selectional restrictions (adopting the convention that these appear in angled brackets)" (Cruse, 2000:251):

\[
\text{expire} = \langle [\text{HUMAN}] \rangle \text{ [BECOME] [NOT] [ALIVE]}
\]

\[
\langle [\text{DOCUMENT}] \rangle \text{ [BECOME] [NOT] [VALID]}
\]

Cruse continues: "This formulation predicts that if the subject of *expire* is *the man*, then the reading "become invalid" will be anomalous, since the specification of the meaning of *the man* will not contain the feature [DOCUMENT], but the reading "die" will be normal, since the specification of *the man* will contain the feature [HUMAN]; hence the sentence *The man expired* will be normal, and because only one reading is normal, it will be unambiguous" (2000:252).
2.5.3. Combining Components

A commonly adopted approach to lexical decomposition seeks to deal with equating the composition of components to that of words in sentences. The description of the meaning of words and phrases rests upon the thesis that the sense of every lexeme can be analysed in terms of a set of more general sense components (or basic/atomic concepts as we will call them in our studies) (Lyons, 1977:317).

As most systems of lexical decomposition can be considerably inexplicit about how components combine to form larger units of meaning, Weinreich's models are considered to be the most suitable in terms of decomposing complex meanings. According to Weinreich (1966), lexemes have an internal structure. This internal structure mirrors the syntactic structure of sentences and phrases (Lyons, 1977:321). Based on this notion, Weinreich introduced two basic modes of composition, according to whether the features in a compound formed clusters or configurations (Cruse, 2000:259). “In clusters, features combined in a Boolean fashion. This is, for instance, the way in which [HORSE] and [MALE] combine in “stallion”: anything which is both male and a horse is a stallion. Some features, however, combine more in the way in which a verb and its direct object combine: the meaning of drink wine, for instance, is not formed in this way. Weinreich suggested that the features [FURNITURE] and [FOR SITTING] combine in this way in the meaning of chair” (ibid).

Throughout Chapter 2 certain theories in lexicology, terminology and cognitive linguistics have been discussed which are relevant to the study in question. The next chapter will be dealing with the description of the methodology applied in the selection of texts. Furthermore, it will provide information on the linguistic tools used in identifying keyterms from the selected corpora and the interviewing methods of informants.
Having overviewed the literature pertaining to the theories of lexicology, terminology and cognitive linguistics, this chapter will now provide a thorough outline of research questions and hypotheses. Information will, also, be given on the different methodologies applied in Case Study 1 (CS1), Case Study 2 (CS2) and Case Study 3 (CS3). Following on the description of the different methodologies, Chapter 3 will end with a thorough description of the corpora collected, the several analysis tools used and the informants consulted.
3.1. RESEARCH QUESTIONS and HYPOTHESES

A close examination of most words reveals that they have many different senses and
the rules which combine them into sentences will frequently yield several possibilities for
interpretation. Usually, potential ambiguity (specifically, and with regard to CS1, CS2 and CS3,
the problem of polysemy) is resolved unconsciously in a person's mind. This shows the
pragmatic and semantic abilities of that person in action. One of the goals of linguistic
research is to illuminate the processeses of such abilities by studying the organisational
structure of concepts and the interrelations between such (cf. Section 2.3). The three case
studies in this thesis, thus, involve the semantic scope of linguistics, and include related fields,
in particular, psycholinguistics and lexicology.

3.1.1. Research Questions

In the light of the information given above, the following generalised research
questions arise:

1. in the investigation of polysemous lexemes at the paradigmatic level, specifically
paradigmatic sense relations of identity and inclusion (vertical relations), is it
possible to observe the potential communication problems which can be
experienced amongst speakers with the assumption that hierarchical structures,
which are based on paradigmatic relations, reflect the way speakers of a language
categorise their experiences of the world?

2. can theories on paradigmatic sense relations of opposition and exclusion
(horizontal relations) be applied in identifying Gegensinn?

3. is Weinreich's mode of configuration as a system of lexical decomposition
suitable for the purpose of identifying Gegensinn?
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4. can theories on Gegensinn (sense opposition at the intensional level) be applied to languages other than Classical Arabic and German?

5. with regard to syntagmatic sense relations: what factors are there to determine the meaning of a polysemous lexeme?

6. does studying sense relations contribute to disambiguation?

The above raised questions, concerning the three case studies, are of general nature. A more detailed account of questions, specified for each case study, will be provided below:

3.1.1.1. Research Questions for CS1, the Lexeme BRIDGE (eng/n):

- Can senses of the term BRIDGE (eng/n) have an exact correspondence in other languages?
- Is there a connection between paradigmatic sense relations and cognitive theories?
- What potential communication problems can the term BRIDGE (eng/n) give rise to?
- Can paradigmatic sense relations of identity and inclusion (vertical relations) reflect the way speakers dissect nature?

3.1.1.2. Research Questions for CS2, the Lexeme AUF Geben (ger/v):

- How can theories on paradigmatic sense relations of exclusion and opposition (horizontal relations) be applied in identifying Gegensinn in German?
- Is Weinreich’s mode of configuration as a system of lexical decomposition suitable for the purpose of identifying Gegensinn in German?
- In line with syntagmatic sense relations: what factors are there to determine the meaning of the lexeme AUF Geben (ger/v)?
3.1.1.3. Research Questions for CS3, the Lexeme ÇALMAK (tur/v):

- Does Gegensinn exist in Turkish?
- Can theories on Gegensinn be applied to Turkish just as to German?
- In line with syntagmatic sense relations: what factors are there to determine the meaning of the lexeme ÇALMAK (tur/v)?
- Does studying sense relations contribute to disambiguation?

3.1.2. Hypotheses

Besides pragmatics, semantics, and context, cognitive categories and models also have considerable impact on the determination of meaning. A thorough scrutiny of polysemous lexemes in each case study will reveal that cognition and extra-linguistic knowledge also play important roles in the way we make sense of a lexeme.

1. hierarchical structures can represent the internal similarities of a lexeme with its external distinctivenesses from other closely related lexemes, since they are based on paradigmatic relations, and reflect the way speakers categorise their experiences of the world.

2. theories on paradigmatic sense relations of opposition and exclusion (horizontal relations) could hypothetically be applied in identifying sense opposition at the intensional level (i.e. Gegensinn) just as at the extensional level (cf. Section 2.4.1.2 and 2.4.1.2.1).

3. whilst there are several systems of lexical decomposition, Weinreich's notion on two basic modes of composition, out of which the mode of configuration will be applied, seems to be the most suitable for the purpose of CS2 and CS3.
4. It should be possible to apply theories on Gegensinn to Turkish just as to German, since such a phenomenon presumably exists across all natural languages and not just in Classical Arabic and German, provided that languages have a shared universal basis/core.

5. With regard to syntagmatic sense relations, the meaning of a polysemous lexeme may be determined by one or all of the following: (i) its surrounding context, (ii) the specified domain, (iii) its grammatical function, and/or (iv) extra-linguistic/encyclopaedic knowledge, such as collocational affinity (sometimes determined also by cultural factors).

6. Sense relations contribute to disambiguation. A disambiguation process of one or more ambiguous lexeme(s) involves several steps. The following procedures outlined in random order are expected to be relevant measures in the dissolution of lexical ambiguity: (i) the moving up or down the levels of a hierarchical scale (paradigmatic sense relations), (ii) examining the meanings which are either contiguous to or overlap the selected meaning of the polysemous lexeme (paradigmatic sense relations, componential analysis), (iii) listing minimal diagnostic components which set off the meaning of the polysemous lexeme from other meanings (paradigmatic sense relations, componential analysis), (iv) context: determining the directional properties of a bipartite syntagmatic constraint (syntagmatic sense relations), (v) context: the insertion or the existence of a third element in an ambiguous bipartite co-occurrence pattern (syntagmatic sense relations), (vi) grammatical analysis (syntagmatic sense relations), (vii) collocations: collocational affinity, i.e. selectional preferences (syntagmatic sense relations), (viii) extra-linguistic factors: arbitrary selectional preferences (syntagmatic sense relations).
3.2. METHODOLOGY

The research questions, as outlined in the previous section of this chapter, concern mainly the structural description of polysemous lexemes in the languages English, German and Turkish. As outlined in Table 3.1 below, in CS1 we will be dealing with paradigmatic sense relations of identity and inclusion (vertical relations) with focus on the polysemous lexeme BRIDGE (eng/n). The senses of the lexeme will be compared with the senses of BRÜCKE (ger/n) and KÖPRÜ (tur/v) which are the corresponding lexemes to BRIDGE (eng/n) in German and Turkish respectively.

In CS2 and CS3, we will be dealing with paradigmatic sense relations of opposition and exclusion (horizontal relations) and syntagmatic sense relations where the lexemes AUFGEBEN (ger/v) and ÇALMAK (tur/v) will be placed under scrutiny.

<table>
<thead>
<tr>
<th>CS1</th>
<th>BRIDGE (eng/n)</th>
<th>BRÜCKE (ger/n)</th>
<th>KÖPRÜ (tur/n)</th>
<th>• paradigmatic sense relations of identity and inclusion (vertical relations)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS2</td>
<td>AUFGEBEN (ger/v)</td>
<td>• paradigmatic sense relations of opposition and exclusion (horizontal relations)</td>
<td>• syntagmatic sense relations</td>
<td></td>
</tr>
<tr>
<td>CS3</td>
<td>ÇALMAK (tur/v)</td>
<td>• paradigmatic sense relations of opposition and exclusion (horizontal relations)</td>
<td>• syntagmatic sense relations</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.1. Case Study 1, 2 and 3.

Vertical and horizontal relations require the use of dictionaries, glossaries, encyclopaedias and lexicons since we will be describing the semantic nature of each polysemous lexeme in the relevant language. The study of syntagmatic sense relations,
however, requires the scanning of texts for the demonstration of collocational patterns, although, dictionaries, glossaries, encyclopaedias and lexicons, which we will be consulting, could also provide some interesting examples. Thus, all these materials will be used in all three case studies.

Ideally, the materials we will be using and which will make up our corpus should be electronic, so that data can be scanned with the help of computers for the extraction of relevant information and examples. However, we will not ignore the existence of valuable material in hardcopy format which will undergo manual scanning. For the electronic corpus, we will need analysis tools such as System Quirk (developed by the Department of Computing at the University of Surrey), WebCorp (developed by the Research and Development Unit for English Studies at the University of Liverpool), and the World Wide Web search engine Google²⁹.

Informants are also of great importance to all three case studies. We need to consult informants for validating senses and examples. These could include native speakers in each language and subject experts in the relevant domains.

All of the above raised issues will be dealt with in more detail in the next sections of this chapter. We will provide further information on the definition of corpus and the collection of corpora, the analysis tools used and the informants consulted.

²⁹ For discussions on the different linguistic tools used in the collection of data and extraction of examples, please refer to Section 3.2.2.
3.2.1. Corpora

This section is devoted to a discussion on corpora used for each case study. First, we will provide a thorough definition of corpus, then move on to describe the nature of the selected corpora for each case study, giving an outline of materials used and sources consulted.

3.2.1.1. Towards a Definition of Corpus

It is impossible to study meaning without observing linguistic patterns natural to the language. For a linguist, the best resources, therefore, comprise written and/or spoken texts, which simply may be referred to as corpus30. Rundell in his article The Corpus of the Future, and the Future of the Corpus reflects on the necessity of linguistic study based on a corpus: “the notion of attempting descriptive language work without reference to empirical data would be regarded as perverse” (1996). McEnery & Wilson, for instance, refer to Mindt who argues that semantic distinctions are associated in texts with characteristic observable contexts - syntactic, morphological and prosodic - and by considering the environments of the linguistic entities an empirical objective indicator for a particular semantic distinction can be arrived at (1996).

It is indeed crucial for a linguist, who is studying meaning, to base their findings on empirical data rather than sheer introspection. Biber et al point out that “finding patterns of use and analysing contextual factors can present difficult methodological challenges. Because we are looking for typical patterns, analyses cannot rely on intuitions or anecdotal evidence” (1998:3).

30 “Corpus being Latin for body, hence a corpus is any body of text” (McEnery & Wilson, 1996), (OCEL, 1992:265-266).
Cruse emphasises that the meaning of a word is fully reflected in its contextual relations (1986:16). For this reason, it is inevitable for the linguist to study meaning by looking into contextual factors.

In what follows, general information is provided about the different definitions of the term corpus and a thorough description of what we consider a corpus comprises for the purpose of our studies.

The Oxford Companion to the English Language (OCEL), for instance, defines corpus as follows: "(1) a collection of texts, especially if complete and self-contained, (2) In linguistics and lexicography, a body of texts, utterances or other specimens considered more or less representative of a language, and usually stored as an electronic database. Currently, computer corpora may store many millions of running words, whose features can be analysed by means of tagging (the addition of identifying and classifying tags to words and other formations) and the use of concordancing\(^{31}\) programs. Corpus linguistics studies data in any such corpus" (1992:265-266).

Biber et al define corpus as "a large and principled collection of natural texts" (1998:12). Mc Enery & Wilson state that "in principle, any collection of more than one text can be called a corpus" (1996). Crystal defines corpus as "a collection of linguistic data, either compiled as written texts or as a transcription of recorded speech" (1992:85). He also explains that "the main purpose of a corpus is to verify a hypothesis about language - for example, to determine how the usage of a particular sound, word, or syntactic construction varies" (ibid).

\(^{31}\) "A term that signifies a list of a particular word or sequence of words in a context. [...] The computer-generated concordances can be very flexible; the context of a word can be selected on various criteria (for example counting the words on either side, or finding the sentence boundaries)" (http://donelaitis.vdu.lt/publikacijos/SDoCL1.htm).
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Corpus is also a central term in corpus linguistics which is used to refer to "(i) (loosely) any body of text; (ii) (most commonly) a body of machine-readable text\(^{32}\); (iii) (more strictly) a finite collection of machine-readable texts, sampled to be maximally representative of a language variety" [http://donclaitis.vdu.lt/publikacijos/SDoCL1.htm].

All of the above definitions are somewhat too narrow for our purposes of study. In this thesis, each keyword under scrutiny requires the compilation of individual corpora. This task rests on the part of the researcher since existing electronic corpora, foremostly used for studies in corpus linguistics, are not suitable for the structural analysis of the three keywords BRIDGE (eng/n), AUFGEBEN (ger/v) and ÇALMAK (tur/v) because:

- each keyword requires a domain specific collection of texts for each of its senses to be investigated in the relevant language,

- there are no adequate electronic sources which can be used for the Turkish keyword. Therefore, we will have to rely heavily on hardcopy sources and informants.

The collection of electronic corpora seems less problematic for the keywords BRIDGE (eng/n), BRÜCKE (ger/n) and AUFGEBEN (ger/v), however is considerably less feasible for the keywords KÖPRÜ (tur/n) and ÇALMAK (tur/v). Presumably, this will lead to a reduction in the number of sources to be consulted for the keywords' senses and their syntagmatic framework, since manual scanning is a more labour-intensive task than electronic scanning of data. It will also result in fewer number of collocational examples to be demonstrated and, therefore, will lead to heavy reliance on Turkish informant(s); especially, if we want to collect some authentic real-life examples. Nevertheless, the lack of electronic resources should not

\(^{32}\) Texts that can be recognised by the computer and used for making linguistic analysis.
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provoke any further problems with regard to finding answers to the research questions outlined for CS3. After all, we are not concerned about statistical analyses.

However, the importance of corpus presented in electronic format is indisputable. It significantly eases the tasks behind semantic, lexicographic, psycholinguistic or corpus linguistic research (McEnery & Wilson, 1996). McEnery & Wilson emphasise the importance of electronic corpus: "Nowadays the term corpus nearly always implies the additional feature machine-readable." (1996). Machine-readable corpora possess the following advantage for the linguist: "The computer has the ability to search for a particular word, sequence of words, or perhaps even a part of speech in a text. [...] The computer's ability to retrieve all examples of this word, usually in context, is a further aid to the linguist. [...] Whatever philosophical advantages we may eventually see in a corpus, it is the computer which allows us to exploit corpora on a large scale with speed and accuracy." (ibid). And elsewhere they state "A linguist who has access to a corpus, or other (non-representative) collection of machine-readable text can call up all the examples of a word or phrase from many millions of words of text in a few seconds." (ibid).

Corpus, in the sense of a structured collection of texts, which will be compiled by the researcher, will principally serve as the basis for semantic analysis in this thesis, which should allow us to identify the senses of each keyword and to view each keyword in context33. The latter requires the task of concordancing, where a typical syntagmatic framework can be observed for the different senses of each keyword.

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33 In corpus linguistics key word in context is an expression used to indicate a process of eliciting syntagmatic frameworks from electronic corpora. It is "a form of concordance in which a word is given within x words of context and is normally centered down the middle of the page" (http://donelaitis.vdu.lt/publikacijos.SDoCL1.htm). It is abbreviated as KWIC = Key Word In Context as opposed to KWAL = Key Word And Line, "a form of concordance which can allow several lines of context either side of the key word" (ibid).
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So far, we have sought to define the term corpus based on information found in the literature. With regard to the three case studies to be carried out, the scope of the term **corpus** needs to be refined because the data sources used in the three Case Studies include not only running text but also entries in lexical and encyclopaedic sources including both in electronic and hardcopy form. The motivation for the particular choice of data sources will be discussed later in relation to each Case Study. Hence, by 'corpus' I understand here the following:

1. dictionary entries\(^{34}\) with extensive definitions, and ideally with examples,
2. glossaries with satisfactory information,
3. lexicon entries with sufficient knowledge,
4. encyclopaedic entries, and
5. informative\(^{35}\) texts.

The corpus should ideally:

(a) provide the reader with an appropriate definition and examples of usage for each entry,
(b) provide the reader with sufficient information on the topic (e.g. if the keyterm is **BRIDGE** (eng/n) then it should ideally provide some background knowledge on the different domains, such as civil engineering, naval technology etc., with focus on the keyterm under scrutiny so that taxonomic and meronymic hierarchies can be generated based on the information).

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\(^{34}\) Dictionaries can be monolingual or bilingual depending on the purpose of consultation.

\(^{35}\) According to Reiss's classification of text types, which she based on Bühlér's three-way categorisation of the functions of language (i.e. the informative function, the expressive function and the appellative function), **Informative texts** deal with plain communication of facts, such as information, knowledge, opinions etc., thus the language dimension is logical or referential, and the main focus is on the topic or content. The other two text types include **expressive** and **operative texts** (2000).

\(^{36}\) Keywords/-terms, with respect to our studies, are polysemous lexemes. (Cf. Section 2.2.1 for a definition of keyword/-term).
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(c) allow for a representation of the keyword/term in context (similar to concordance listings as in corpus-based research), so that certain philonymous combinations can be observed,

(d) provide acceptable and relevant examples for each case study, so that syntagmatic structures can be studied.

Criterion (a) is relevant for all three case studies (CS1, CS2 and CS3) in this thesis, since all of them involve semantic issues. It is absolutely crucial to have an idea what the different senses of the polysemous lexemes (BRIDGE (eng/n), BRÜCKE (ger/n), KÖPRÜ (tur/n) in CS1, AUFGEBEN (ger/v) in CS2 and ÇALMAK (tur/v) in CS3) are, because we need to be able to:

(i) present the senses of the polysemous lexeme under scrutiny, be it by extracting them from one or more monolingual/bilingual dictionary entries,

(ii) contrast the senses of the polysemous lexeme under scrutiny with those in the other two languages37,

(iii) highlight similarities and distinctive features of its senses.

Criterion (b) is relevant for CS1 in that it allows for the generation of paradigmatic sense relations of identity and inclusion (i.e. vertical relations), such as taxonomic and meronymic hierarchies.

Criteria (c) and (d) provide relevant information with examples, for the study of paradigmatic sense relations of opposition and exclusion (i.e. horizontal relations) and syntagmatic sense relations in CS2 and CS3.

37 Considering the fact that we are working with three languages, English, German and Turkish, it would be interesting to observe potential lexical and/or semantic overlaps and/or gaps.
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Texts in CS1 have not been chosen randomly. These include texts written for the non-expert with a fair knowledge in the field; hence the corpora are not highly sophisticated as would be expected of texts which are directed to expert readers only. However, the texts are not purely for the layperson either.

The approach with regard to the collection of texts for CS2 and CS3 was more free. Thus, on-line texts from a wide variety of texts were used as the basis for the elicitation of syntagmatic structures. These include announcements, political texts, newspaper reports, journal articles, letters of complaint, letters of opinion, advertisements, real-life stories.

So far, we have dealt with the definition of the term corpus, the way it has been defined in the several sources consulted, and our understanding of how it is interpreted for the purposes of this study. The next sections will focus on the nature of corpora used for all three case studies. In each section, a table will provide a list of materials used, e.g. dictionaries, glossaries, lexicons and encyclopaedias. Also, the role of the different texts will be discussed accordingly.

3.2.1.2. The Nature of the Corpus used for Case Study 1

In this section, the nature of the corpus used for CS1 will be discussed in detail. First, we will provide a list of the different dictionaries, glossaries and lexicons consulted. And secondly, we will discuss the nature of the texts used for the case study.

(i) Sources of Reference used in Case Study 1:

In Table 3.2, below, is a list of dictionaries, glossaries and lexicons, ordered alphabetically, which have been used as sources of reference. These materials constitute the corpus for the identification process of the senses of BRIDGE (eng/n), BRÜCKE (ger/n) and KÖPRÜ (tur/n) in CS1.
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<table>
<thead>
<tr>
<th>Reference</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BWDW</strong></td>
<td>Brockhaus Wahrig Deutsches Wörterbuch in 6 Bänden, 1980-84</td>
</tr>
<tr>
<td><strong>DSTT</strong></td>
<td>Dictionary of Scientific and Technical Terms, 1994</td>
</tr>
<tr>
<td><strong>DUD6</strong></td>
<td>Duden: das grosse Wörterbuch der deutschen Sprache in sechs Bänden, Duden Wörterbuch Band 1: A - Ci-, 1976</td>
</tr>
<tr>
<td><strong>DUDU</strong></td>
<td>Duden: Deutsches Universal Wörterbuch, 1996</td>
</tr>
<tr>
<td><strong>KS</strong></td>
<td>Kleines Seemanslexikon, 2000 <a href="http://mitglied.tripod.de/Wkernchen/index.html">http://mitglied.tripod.de/Wkernchen/index.html</a></td>
</tr>
<tr>
<td><strong>OED</strong></td>
<td>The Oxford Encyclopedic English Dictionary, 1991</td>
</tr>
<tr>
<td><strong>OXF</strong></td>
<td>The Oxford English Dictionary, 1989</td>
</tr>
<tr>
<td><strong>SDCE</strong></td>
<td>Starfleet Database Central Europe, 2001 <a href="http://sdce.de/lexicon/">http://sdce.de/lexicon/</a></td>
</tr>
<tr>
<td><strong>TS</strong></td>
<td>Türkçe Sözlük, 1999</td>
</tr>
</tbody>
</table>

**Table 3.2.** Sources of reference used in the identification process of the senses of **BRIDGE** (eng/n), **BRÜCKE** (ger/n) and **KÖPRÜ** (tur/n) in CS1.

The role of each material as listed in **Table 3.2.**, how it was exploited and when it was consulted will be dealt with in more detail during discussions in Chapter 4. Next, we will describe the nature of the texts used for CS1.
(ii) **Texts used in Case Study 1:**

The Internet serves for immediate access to a vast field of texts from all levels. Thus, for the generation of hierarchies in CS1, machine-readable texts were collected from the Internet with the help of on-line search engines, such as AltaVista, Dogpile, Fireball, Google, Infoseek, Lycos, and Yahoo. 

Appendix 1 consists of a number of tables (cf. Table AP1.1, AP1.2, AP1.3, AP1.4, AP1.5, AP1.6 and the Summary Table AP1.7, as outlined in the Appendices section under the section for List of Tables, Diagrams, and Figures) which provide information on the keyword, language, domain, title of the text, the Website address of each text retrieved (under the heading Source), number of words (under the heading Words), the date when the text was retrieved and the scanning procedure (under the heading Status).

The corpora are in the languages English and German for the keyterms BRIDGE (eng/n) and BRÜCKE (ger/n). The size of corpus consists of a total of 97,724 words for the English and a total of 16,554 for the German corpus (cf. Summary Table AP1.7 in Appendix 1). As for the Turkish keyterm KÖPRÜ (tur/n), sources were inadequate on the Internet and, hence, focus was on the senses of the lexeme which were gathered from the monolingual Turkish dictionary Türkçe Sözlük published by Pusküllüoğlu, abbreviated as TS in this thesis.

The text type in the selected corpora may be described as informative. The texts are mainly chosen from the domain of civil engineering (civ eng), naval architecture (nav arch) and science fiction (sci fi), which are obtained from the official and unofficial webpages of

---

38 Cf. section for Websites in the Bibliography section of this thesis for the Website address of each search engine.

39 The scanning procedure may involve the manual scanning (abbreviated as M/S), or electronic scanning (abbreviated as E/S) of texts collected.
Britain, Germany and Turkey and from books as listed in the Bibliography section under the heading Other Sources Consulted.

Hartmann distinguishes between three different types of parallel texts: Class A, Class B and Class C texts (1980:37). **Class A** parallel texts are basically source texts and their translations. **Class B** parallel texts are characterised as the deliberate adaptation of a text from the source-language (SL) into the target-language (TL) whereby the essence of the message the source text (ST) conveys is transferred in an identical way to the receivers of the TL. These texts aim to produce similar reactions in the target readership which is often of a very different cultural background. **Class C** parallel texts are typically unrelated texts which deal with similar events. Below is a table, created by Hartmann, indicating the different classes of parallel texts with some examples:

<table>
<thead>
<tr>
<th>equivalence is achieved by</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>translation</td>
<td>adaptation</td>
<td>similar context</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>mediation is achieved by</th>
<th>approximation</th>
<th>reference to common source</th>
<th>comparison</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>directionality</th>
<th>from source-language to target language</th>
<th>simultaneous formulation</th>
<th>independent creation</th>
</tr>
</thead>
<tbody>
<tr>
<td>bible translation</td>
<td>production of advertising copy for different countries</td>
<td>sample of texts from corresponding registers of different languages</td>
<td></td>
</tr>
<tr>
<td>literary and technical translation</td>
<td>authoritative multilingual versions of international law</td>
<td></td>
<td></td>
</tr>
<tr>
<td>conference interpreting</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 3.3.** Classes of parallel texts (Hartmann, 1980:38).
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It is according to Hartmann’s model that texts have been selected to make up the corpora for CS1. There are several texts from corresponding registers in English and German in similar context collected for the purpose of linguistic comparison (cf. Appendix 1 for a list of data collected). Hence, we may speak of Class C texts which we have selected for CS1.

3.2.1.3. The Nature of the Corpus used for Case Study 2

In CS2, research involved the collection of lexicographic data. Therefore, relevant examples (such as senses, phrases or sentences) were retrieved from hardcopy as well as on-line dictionaries. Also, the linguistic tool WebCorp (Section 3.2.2.2) was extensively used for the collection of examples, in particular examples reflecting syntagmatic structures. A list of Websites, where each electronic example was obtained from, can be found in the Bibliography section of this thesis under the heading Websites.

(i) Sources of Reference used in Case Study 2:

In CS2, dictionaries were the main material used as sources of reference to provide an account of the different senses of the polysemous lexeme AUFGEHEN (ger/v). Table 3.4, below, comprises a list of all the dictionaries used for that purpose:

<table>
<thead>
<tr>
<th>COL</th>
<th>Collins German-English Dictionary, 1991</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUDU</td>
<td>Duden: Deutsches Universalwörterbuch, 1996</td>
</tr>
<tr>
<td>OALD</td>
<td>Oxford Advanced Learner’s Dictionary, 1995</td>
</tr>
<tr>
<td>OXF</td>
<td>The Oxford English Dictionary, 1989</td>
</tr>
<tr>
<td>TS</td>
<td>Türkçe Sözlük, 1999</td>
</tr>
</tbody>
</table>

Table 3.4. Sources of reference used in the identification process of the senses of AUFGEHEN (ger/v) in CS2.
Detailed discussions on the role of each material used in CS2 and when it was consulted will take place in Chapter 5. The next section focuses on the nature of the texts used for CS2.

(ii) Texts used in Case Study 2:

Texts were collected with the help of the linguistic tool WebCorp (Section 3.2.2.2) and examples were extracted in form of concordances presented on a single results page with links to the sites from which they came (cf. Appendix 4). Table 5.6 in Chapter 5 provides a list of all the examples extracted from a wide range of on-line texts in German present across the Internet. When extracting examples, focus was placed on the keyword AUFGEBEN (ger/v) and its surrounding context in the different domains its senses occur. Thus, any collocational pattern which had the keyword AUFGEBEN (ger/v) at its centre was considered as a valid example worth investigating.

3.2.1.4. The Nature of the Corpus used for Case Study 3

In CS3, research involved the collection of lexicographic data as in CS2. Relevant examples, such as the different senses of the lexeme ÇALMAK (tur/v), and examples of the lexeme embedded phrases or sentences, were retrieved from hardcopy dictionaries (cf. Table 3.5). As in CS2, the linguistic tool WebCorp (Section 3.2.2.2) was used for the collection of examples reflecting syntagmatic structures.

(i) Sources of Reference used for Case Study 3:

Similar to CS2, CS3 involved the use of dictionaries as the main source of reference to provide an account of the different senses of the polysemous lexeme ÇALMAK (tur/v). Table 3.5 outlines the details of the two dictionaries used for the purpose of eliciting the senses of the lexeme under scrutiny:
Table 3.5. Sources of reference used in the identification process of the senses of ÇALMAK (tur/v) in CS3.

<table>
<thead>
<tr>
<th>RED</th>
<th>Redhouse İngilizce-Türkçe / Türkçe-İngilizce Sözlük, 1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS</td>
<td>Türkçe Sözlük, 1999</td>
</tr>
</tbody>
</table>

Detailed information on the reasons for the consultation of each dictionary will be provided in Chapter 6. Next, we will focus on the nature of the text(s) used for CS3.

(ii) Texts used in Case Study 3:

As mentioned earlier in Section 3.2.1.1, due to the fact that, at the time of consultation, electronic sources for the presentation of examples, in particular with regard to syntagmatic structures related to one of the senses of the keyword ÇALMAK (tur/v) were inadequate, heavy reliance was placed on a Turkish informant. The only relevant electronic text which could be elicited from the Internet, for one of the senses of the keyword, was on the Website [http://www.sivas.gov.tr/basin/arsiv/yazili/28haziran.htm](http://www.sivas.gov.tr/basin/arsiv/yazili/28haziran.htm), which shows a press release published on the official Website of the Sivas city council in Turkey. Other syntagmatic structures were obtained from the monolingual Turkish dictionary Türkçe Sözlük and after several telephone interviews with the Turkish informant Subject M.

3.2.2. Analysis Tools

The following will focus on the different linguistic tools used for the analysis of selected corpora.

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40 Cf. Section 3.2.3 for a discussion on face-to-face interviews and telephone interviews.
3.2.2.1. System Quirk

The terminology management tool System Quirk, which can be used for a variety of purposes including the elicitation, elaboration and dissemination of terminology, has been developed by the Department of Computing Science at the University of Surrey. Of the various tools System Quirk includes, the KonText tool proved itself to be the most relevant for the purpose of CS1 since it offers a text analysis device. This device allows for the extraction of words from a text corpus (Ahmad & Holmes-Higgin, 1995: 183-185) with indication of frequency of occurrence. This feature of the system makes it easier for the user to determine words which show potential for a thorough examination. However, the determination process requires human intervention, i.e. manual scanning. System Quirk also allows for the creation of concordances, the identification of collocations, and is also effective for statistical analysis. Hence, texts can be analysed by performing concordances, wordlists, indexes and collocations (Ahmad & Holmes-Higgin, 1995: 190).

A concordance is an alphabetically ordered list of words in a text which shows the quantity of occurrence of a particular word under a heading. Line numbers are indicated for each of the occurrences of that word with the different contexts surrounding it. Whereas a wordlist is only either an alphabetically ordered or a frequency ordered list of words, an index includes also line references to the word list. And finally, a collocation option produces "a list of co-occurrences of specified terms within certain boundaries" (Ahmad & Holmes-Higgin, 1995: 190).

Constraints, such as the survey of particular words or collocations and/or the exclusion of certain words, can be done easily on System Quirk. KonText includes also a Stats tool which compares the relative frequencies of word forms that occur in specialised texts with their relative frequencies in a general-language corpus. The Stats tool can be applied, especially, when the relative frequency of each word form, or the frequency of
occurrence of each word form in an analysed text needs to be obtained. It can also be used when the ratio of the relative frequency in the analysed text to the relative frequency of the same word in a general language corpus (LSP:LGP ratio) needs to be observed.

As manual scanning of such corpora and the acquisition of potential words is time-consuming and often inconsistent, it is undoubtedly the best way to extract them electronically, or to be more accurate semi-automatically.

3.2.2.2. WebCorp

WebCorp was created, and is operated and maintained by the Research and Development Unit for English Studies at the University of Liverpool. It consists of a complete set of tools which allows the user to view the World Wide Web as a corpus. The results format consists of relevant sections of text from multiple web pages collated on one page. WebCorp is used for information retrieval similarly for which standard search engines are mainly used. Its interface resembles the interfaces provided by standard search engines; you enter a word or a phrase, choose options from the menus provided and then click on the 'submit' button. WebCorp works 'on top of' the search engine of choice, taking the list of URLs returned by that search engine and extracting concordance lines from each of those pages. All of the concordance lines are presented on a single results page, with links to the sites from which they came (http://www.webcorp.org.uk/webcorp.html).

3.2.2.3. Google

A search engine such as Google, for instance, is designed to retrieve information from the World Wide Web. It uses complex techniques to index the Web and return the documents from their indices which are most relevant for the user's request. WebCorp, on the
other hand, is designed to retrieve linguistic data from the Web. Concordance lines showing the context in which the user's search term occurs. In response to a user query, standard search engines return a list of URLs, along with a description of or some text from each page to help the user decide which pages are most useful. To view the pages, the user must click on each of the links individually. WebCorp, however, visits each one of these pages, extracting concordance lines from them. Although some search engines, such as Google, do give 'keyword in context' style output for some of the URLs in the results list, this is not true for all of the URLs and not all instances of the search term on each page are given in these short extracts. It may be the case that the search term occurs many times on a given page, but a Google-user could not know this without clicking on each of the links manually. Google is an excellent search engine but it is not designed as a linguistics tool and is not ideal for this purpose. WebCorp offers options (e.g. customisable concordance span, output format etc.) specifically designed for linguistic research (ibid).

3.2.3. Interviews

Interviews, because of their flexibility, are a useful method of obtaining information and opinions from native speakers of a language and subject experts. Burns states that "an interview is a verbal interchange, often face to face, though the telephone may be used, in which an interviewer tries to elicit information, beliefs or opinions from another person" (2000:423).

Walliman and Baiche, state that there are two main methods of conducting interviews. Like Burns, they also distinguish between the face-to-face interview and the telephone interview:
"The use of interviews to question samples of people is a very flexible tool with a wide range of applications. There are two main methods of conducting interviews; face-to-face and telephone. Face-to-face interviews can be carried out in a variety of situations - in the home, at work, outdoors, on the move (e.g. while travelling) - and can be used to question members of the general public, experts or leaders, specific segments of society, [...], ethnic minorities, both singly and in groups. Interviews can be used for subjects both general or specific in nature and even, with the correct preparation, for very sensitive topics. They can be one-off or, for longitudinal studies, repeated several times over a period to track developments. [...] Telephone interviews avoid the necessity of travelling to the respondents, and all the time and problems associated with contacting people personally. [...] However, visual aids cannot be used to explain questions, and important visual clues between interviewer and interviewee, e.g. eye contact, smiling, puzzled looks, are absent."

(Walliman & Baiche, 2001:238)

A crude categorisation of the different forms of interviews consists of unstructured (open-ended or In-depth), semi-structured and structured (close-ended or standardised) Interviews. Walliman and Baiche comment on the different methods of interviewing as follows:

"The structuring of the interview depends on the type of information you wish to elicit. For very precise answers to very precise questions, used for quantitative and statistical analysis, a tightly structured interview is required with closed questions formulated in a method similar to a questionnaire. At the other extreme, if you need to explore a situation and wish to get information which you cannot predict, a very open and unstructured form of interview is appropriate. A semi-structured interview falls between the two, achieving defined answers to defined questions, while leaving time for further development of those answers, and including more open-ended questions."

(Walliman & Baiche, 2001:239-240)
According to Burns, the unstructured interview is a:

"[...] form of a conversation between informant and researcher. It focuses, in an unstructured way, on the informant's perception of themself, of their environment and of their experiences. There is no standardised list of questions. It is a free-flowing conversation, relying heavily on the quality of the social interaction between the investigator and informant, that can be subtly redirected by the interviewer if it should stray too far off the track of the research study. Thus, while it is made to be as natural as possible the direction of the conversation is always controlled somewhat minimally to ensure the focus stays relevant to the problem."

(Burns, 2000:425)

Burns (2000) also refers to Taylor and Bogdan (1984:77) who state that unstructured interviews are "repeated face-to-face encounters between the researcher and informants directed towards understanding informants' perspectives on their lives, experiences or situations as expressed in their own word". Burns states that unstructured interviews should be used to obtain an individual's subjective experiences when a life or oral history is being elicited and that the individual's subjective life experiences are reported in the individual's own language in a case study approach (2000:425). He also adds that the unstructured interview facilitates access to events and activities which cannot be directly observed by the researcher because they may have occurred in the past (2000:425-426).

The form of questioning best suited to unstructured interviewing is the recursive model. "This is the conversational approach, in that a natural flow between two persons occurs with a connection between the previous, current and next remark. The criticism of this recursive approach is that as it is directed by the conversation it is quite possible for the interchange to go completely off the topic. If this occurs, the interviewer must guide the attention of the informant back to the topic" (Burns, 2000:428).
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The semi-structured Interview is used either as part of a structured interview or an unstructured interview (Burns, 2000:424). In semi-structured interviews, a direction is given to the interview by the interviewer who, without fixed wording or fixed ordering of questions, makes sure that focus is placed on the important issues of the study. A semi-structured interview gives more flexibility to the flow of the interview compared to the structured interview in that it allows for more valid response from the informant's perception of reality (ibid).

The structured Interview is used mainly in surveys and opinion polls for quantitative analysis (Burns, 2000:424). In structured interviews informants receive "the same questions in the same specified order so that comparisons between defined groups can be made with statistical comparability being the main objective" (ibid). Due to the fact that specific questions receive specific answers a conversational approach cannot be maintained. This means, that all or almost all questions are structured, in that the informant is forced to select their answer from a limited variety of options which are predetermined by the interviewer. Thus, there is no flexibility for the interviewee or interviewer. This may constitute an advantage for the quantitative researcher, who is concerned about statistical analyses, because a structured interview allows for an easy and swift evaluation of results. As a result, qualitative researchers use the unstructured or semi-structured interviewing methods because of their flexibility (ibid).

As we have seen, interviews constitute one of the most important sources of information, in particular for qualitative research. The consultation of native speakers in the languages English, German and Turkish, and that of subject experts in the relevant domains, therefore, is vital for each case study. The unstructured interviewing method was primarily used for the consultation of subject experts in CS1 because it was considered to be the most relevant approach for the generation and validation of hierarchical structures. The semi-
structured interview was regarded as suitable for the consultation of native speakers involved in the lexical decomposition of polysemous lexemes in CS2 and CS3\textsuperscript{41}.

Questionnaire surveys were not considered suitable for any of the case studies as interviews with each informant, in other words, with each subject, required interaction and communication between the interviewer and interviewees. Walliman and Baiche think also that "questionnaires are not suitable for questions which require probing to obtain adequate information, because they should only contain simple, one-stage questions" (2001:238).

The consultation of each informant, be it for reasons of their language suitability or expert knowledge in a particular field, their roles and responses will be described thoroughly in each case study. However, Table 3.6 below outlines the profile of each subject who contributes to the three case studies:

Table 3.6. List of Informants.

<table>
<thead>
<tr>
<th>Informants</th>
<th>Native Language(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case Study 1</td>
<td></td>
</tr>
<tr>
<td>Subject A</td>
<td>Former officer in the Royal Marines, United Kingdom.</td>
</tr>
<tr>
<td>Subject B</td>
<td>Senior lecturer (specialised in the field of bridge construction) at the Department of Civil Engineering, University of Surrey, United Kingdom.</td>
</tr>
<tr>
<td>Subject C</td>
<td>Senior lecturer at the Department of Mechanical Engineering, University of Surrey, United Kingdom.</td>
</tr>
<tr>
<td>Subject D</td>
<td>Civil engineer, specialist in bridge construction.</td>
</tr>
</tbody>
</table>

\textsuperscript{41} Please note that the funneling approach was applied as a means of extracting information from the informants in CS2 and CS3. "In this approach, the interviewer gradually guides the direction of the interview by commencing with broad general questions and focusing progressively onto the topic with more specific questions" (Burns, 2000:429).
Table 3.6. (continued): List of Informants.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Case Study 2</th>
<th>Case Study 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject E</td>
<td>Senior Business Languages Co-ordinator and Teacher of German at the Language Teaching Centre, School of Arts, University of Surrey, United Kingdom.</td>
<td></td>
</tr>
<tr>
<td>Subject F</td>
<td>Lecturer at the Department of Linguistic, Cultural and International Studies, School of Arts, University of Surrey, United Kingdom.</td>
<td></td>
</tr>
<tr>
<td>Subject G</td>
<td>Lecturer in German at the Language Teaching Centre, University of Surrey, United Kingdom.</td>
<td></td>
</tr>
<tr>
<td>Subject H</td>
<td>Secretary to the Finnish Chiropractic Union.</td>
<td></td>
</tr>
<tr>
<td>Subject J</td>
<td>MSc student at the Department of Chiropractic, European Institute of Health and Medical Sciences, University of Surrey, United Kingdom.</td>
<td>English</td>
</tr>
<tr>
<td>Subject K</td>
<td>MSc student at the Department of Chiropractic, European Institute of Health and Medical Sciences, University of Surrey, United Kingdom.</td>
<td>English</td>
</tr>
<tr>
<td>Subject L</td>
<td>PhD student at the Department of Music, School of Arts, University of Surrey, United Kingdom.</td>
<td>English</td>
</tr>
<tr>
<td>Subject M</td>
<td>Retired teacher of Natural Sciences/Biology, Turkey.</td>
<td>Turkish</td>
</tr>
</tbody>
</table>

The interviews were mainly held face-to-face, apart from the ones with Subject M in CS3. Telephone interviews had to be held in order to avoid the necessity of travelling to the informant. No problems were encountered during the several stages of the informant's interview via the telephone, in particular with regard to the potential difficulty of obtaining visual aids, because the tasks the informant was involved in mainly concerned her command of the language and not that of a behavioural aspect.
The advantage of an interview compared to a questionnaire is also "that the respondent may ask questions when he or she does not understand something (Scholz & Tietje, 2002:159). Moreover, the tasks which each informant is required to fulfill in each case study, requires a long preparation period with thorough explanations, examples and conversations between the interviewer and interviewee. Walliman and Balche agree also on the advantage of conducting interviews in that respect: "The interviewer is in a good position to judge the quality of the responses of the subjects, to notice if a question has not been properly understood, and to reassure and encourage the respondent to be full in his/her answers. Visual signs, such as nods, smiles etc., are valuable tools in promoting complete responses" (2001:239).

Chapter 3 outlined a detailed description of the research questions and hypotheses. It also provided a brief overview of each case study and described the methodology to be applied. The methodology section included information on the selection process and the nature of corpora, the several analysis tools used and an account of the informants consulted in each case study.

The following chapters will be dealing with CS1, CS2 and CS3 describing each analysis procedure, with comments on the several tables, charts, and hierarchical structures produced.
4.1. ANALYSIS and DISCUSSION of RESULTS

In Case Study 1 (CS1), we will be analysing and discussing data and results based on the linguistic theories described in Chapter 2. The study involves the structural description of the polysemous lexeme BRIDGE (eng/n) at the paradigmatic level. We will be looking specifically into paradigmatic sense relations of identity and inclusion, i.e. vertical relations, (Section 2.4.1.1) since we assume the following:
vertical relations follow the hierarchical structuring principles, which are amongst the most important in natural languages,

- hierarchical structures are linked to cognitive theories,
- hierarchical structures achieve an ideal balance between internal similarity of concepts and their external distinctiveness,
- hierarchical structures reveal how we organise categories, thus indirectly reflect the semantic and/or lexical field a lexeme belongs to,

Assuming the above, it should be possible:

- to observe what potential communication problems a polysemous lexeme can give rise to. Therefore, we will study subject experts' responses carefully concerning the paradigmatic structures of the lexeme BRIDGE (eng/n) in different domains.
- to investigate as to whether a polysemous lexeme in a given language has exact corresponding senses in other languages. Hence, we will discuss the different senses of the lexeme BRIDGE (eng/n) by comparison of the two languages German and Turkish thereby contrasting some of the hierarchical structures which will be construed based on texts.

Before discussing the lexeme BRIDGE (eng/n) and the results gained from the study of vertical relations, we will initially describe each analysis phase in detail.

4.1.1. ANALYSIS PHASES of CASE STUDY 1 (CS1)

The following provides an outline of each step taken in the analysis process of Case Study 1 (CS1). Each stage contains a brief description of the target set, the method applied and the results achieved. It also provides short remarks in order to enlighten the reader about hidden aspects on the issue.
CHAPTER 4: Analysis of the Lexeme BRIDGE (eng/n)

CASE STUDY 1

CS1 - Analysis Phase 1

Target: Collecting texts in electronic format for the purpose of eliciting words on System Quirk.

Method: Using the Internet,
Converting http files into txt format,
Storing the converted files on floppy disks.

Results: Unformatted txt version of electronically stored http files extracted from web-sites on the Internet.

Notes: The raw text in txt format had to be reformatted.

CS1 - Analysis Phase 2

Target: Extracting single words from the collected electronic texts.

Method: Using the System Quirk Kontext tool, specifically the Wordlist and Ferret options, by excluding closed-class words.

Results: A number of lists have been produced showing words from the source documents along with their frequency of occurrence (cf. Appendix 2).

Notes: Several keywords have been identified by manual scanning of the produced lists. The lexeme BRIDGE (eng/n) has been selected for analysis with Subject A. The selected word is a polysemous lexeme which promises interesting results to be achieved.
CHAPTER 4: Analysis of the Lexeme BRIDGE (eng/n)

CASE STUDY 1

CS1 - Analysis Phase 3/1

Target: Identifying the different senses of the lexeme BRIDGE (eng/n) in the three languages English, German and Turkish.

Method: Using on-line and hardcopy dictionaries and encyclopaedias in the three languages as outlined previously in Table 3.2.

Results: Field Diagram 4.1, provides definitions of the lexeme BRIDGE (eng/n) and indicates the different domains the lexeme appears in.

Table 4.1, shows the different domains in which the senses of the lexeme BRIDGE (eng/n) occur, indicating overlaps and gaps in the three languages.

Table 4.2, a summary of Table 4.1.

Notes: As we know, different dictionaries give information on the definitions either according to alphabetic ordering, or frequency of use by speakers, or based on historical development of the sense(s) of the word. Field Diagram 4.1 has been produced according to frequency in dictionary entries as are Diagram 4.1, Diagram 4.2, Diagram 4.3 and Table 4.1 and Table 4.2.

CS1 - Analysis Phase 3/2

Target: Generating hierarchical structures in the three languages which represent the different senses of the lexeme BRIDGE (eng/n).

Method: Based on Field Diagram 4.1.

Results: Hierarchical structures, which picture the different senses of the lexeme BRIDGE (eng/n) according to the frequency of dictionary entries.
CHAPTER 4: Analysis of the Lexeme BRIDGE (eng/n)

Notes: The immediate forking of the lexeme into two main branches in the diagram with the English term BRIDGE (eng/n) represents the polysemy and homonymy relations of the different senses of the lexeme.

The hierarchical structures in German and Turkish do not represent any homonymy relations, hence the lexeme is divided up into the several domains showing only polysemy relations.

CS1 - Analysis Phase 3/3

Target: Producing hierarchical structures in English and German which represent paradigmatic relations within the lexeme BRIDGE (eng/n).

Method: Using search engines on the Internet, such as Google, AltaVista, Yahoo, Lycos, Fireball, Infoseek and Dogpile in order to collect electronic texts on the different domains of the lexeme BRIDGE (eng/n).

By typing in the term BRIDGE (eng/n) as the lexeme to be searched for in the search engine.

Manual scanning of electronic texts in order to retrieve knowledge on the domains.

Results: Hierarchical structures which represent paradigmatic relations in the domains of Civil engineering, Naval architecture and Science fiction.

Notes: ---

The above was a detailed account of each analysis phase in CS1. We will now explain how the lexeme was identified as suitable for the study and discuss its senses.
4.1.2. The LEXEME BRIDGE (eng/n)

Having retrieved several Class C parallel texts (Section 3.2.1.2) from the Internet, the initial stage for determining a polysemous lexeme in English was through electronic scanning of the collected texts (cf. Appendix 1 for the Corpus List). After using the Wordlist option on System Quirk (Section 3.2.2.1) a list was produced with words which were potential candidates for the purpose of our study. Out of this list (cf. Appendix 2 for an extract of the Wordlist), the lexeme BRIDGE (eng/n) has been selected with the help of Subject A. Reason for the selection of the lexeme BRIDGE (eng/n) was also the availability of experts (Subjects A, B, C and D).

The lexeme BRIDGE (eng/n) is undoubtedly an ideal candidate for studying lexical ambiguity in language. It has been selected from the Wordlist for analysis because it is polysemous, has one homonymous sense (OXF, 1989), and therefore has an element of lexical ambiguity. As it manifests itself as an equivocal lexeme, it may give rise to problems in verbal and/or written communication. Therefore, we should investigate the similarities and the differences between its senses, by scrutinising its correspondence to its senses in German and Turkish. In German we find the lexeme BRÜCKE (ger/n) for BRIDGE (eng/n), and in Turkish KÖPRÜ (tur/n). In both languages these corresponding lexemes appear to have polysemous senses; there seems no homonymous sense present (DUDU, 1996 & TS, 1999). However, before moving on to contrast each sense of the lexeme BRIDGE (eng/n) with its corresponding lexemes in German and Turkish, we would like to investigate its meaning.

4.1.2.1. The Senses of the Lexeme BRIDGE (eng/n)

The initial task in investigating the lexeme BRIDGE (eng/n), which we can observe as a term in several different special languages, was to look into dictionaries and encyclopaedias in order to determine its senses, and to retrieve the definitions for each of the senses. As can be seen from Diagram 4.1 below, the lexeme BRIDGE (eng/n) forks into two main branches each of them showing polysemy and homonymy relations of each domain to the lexeme. In
this diagram, we can see that the most frequent sense of BRIDGE (eng/n) occurs in Civil engineering followed by its figurative meaning. The third most frequent sense, which is in Dentistry, is followed by the domain of Cue games etc. In Cue games, for instance, the term BRIDGE (eng/n) is practised in the sense of a device used in cue games, and meaning a support formed by the hand of the person who plays a cue game.

We know that traditional terminology rejects any overlaps within one subject field, as shown in the above example. (Section 2.3). However, overlaps of this kind have been observed to exist across many scientific fields. As a result, it should be emphasised that, besides in LGP, ambiguity within certain domains of LSPs is a commonplace. It is quite natural that LSPs borrow words out of LGP (Section 2.1.2.2). This does not happen only because our mental lexicon has limited capacity, but also there is a tendency present in the human mind towards "figurative usage based on resemblance" (Section 2.3.1.2) and associating concepts (Section 2.1.2.2, Table 2.1). In Diagram 4.1 intersections within one domain can be observed in the domains of Music, Electrical engineering, Communications and Petroleum engineering. The diagram represents the danger that in LSPs certain terms within one domain can overlap at the form level. As this situation can easily cause a problem in communication, the desire to eradicate ambiguity in expert communication for precision reasons is natural.

In Anatomy, the lexeme BRIDGE (eng/n) is used as in bridge of the nose. Hence, we added nose under the domain of anatomy in order to specify the part of the body in which the lexeme is used (Diagram 4.1). Further below in the diagram a similar incident can be detected in the domain of Communications. In this subject field, the term BRIDGE (eng/n) is used to name a device in a network and also a particular structure in signalling systems.

Please follow the arrows in Diagrams 4.1, 4.2 and 4.3 for direction of frequency.
BRIDGE (eng/n) - Domains

Diagram 4.1. The different domains in the lexeme BRIDGE (eng/n).
In Diagram 4.2, we are dealing with the lexeme BRücke (ger/n) which is the German 'equivalent' for the lexeme BRIDGE (eng/n). In this diagram we can clearly see that the lexeme is a polysemous term; it has no homonymous senses. An interesting feature of the diagram is where the lexeme BRücke (ger/n) denotes the sense kleiner schmaler Teppich. At first sight, it may look as if the sense represents a homonymous relationship to our lexeme, however, taking the example Zwischen Wohnzimmer und Ecke lieg eine Brücke we are able to arrive at the conclusion that the concept of a carpet in the eyes of a German speaker bears close resemblance to the concept of a bridge, as it is 'long' and 'narrow', and 'one can walk on it to arrive from one point to another'. Hence, we come to the conclusion that BRücke (ger/n), which denotes carpet, is in fact a metaphor. Therefore, it is not placed under homonymy but polysemy (Section 2.3.1.2).

Furthermore, the domains which the lexeme BRücke (ger/n) covers are less in quantity than in BRIDGE (eng/n). This should not be interpreted as a case for lexical or conceptual gap. It means, that the concept may exist in the other language, yet it may be labelled with a form other than BRücke (ger/n). For instance, the card game BRIDGE (eng/n) when translated into German does not occur as BRücke (ger/n), therefore we can say that the concept of a card game exists in German, however under the name of BRIDGE and not BRücke.
BRÜCKE (ger/n) - Domains

Diagram 4.2. The different domains in the lexeme BRÜCKE (ger/n).
Diagram 4.3 attempts to show the domains related to KÖPRÜ (tur/n) which is the Turkish equivalent to BRIDGE (eng/n). When compared with the Diagrams 4.1 and 4.2, we recognise that the Turkish term covers less domains. Also, its first definition, which was entered in the monolingual Turkish dictionary Türkçe Sözlük (TS) by Püskülüoğlu as the most frequent sense, was in Civil engineering, as was the case in BRIDGE (eng/n) and BRÜCKE (ger/n).

So far we have discussed Diagrams 4.1, 4.2 and 4.3. Each diagram illustrated the different domains in which the senses of the lexemes BRIDGE (eng/n), BRÜCKE (ger/n) and KÖPRÜ (tur/n) are present. Next we will make a comparison between each lexeme's senses. For this reason, we created a Field Diagram 4.1 which shows each of the senses in relation.
Diagram 4.3. The different domains in the lexeme KÖPRÜ (tur/n).
Field Diagram 4.1 is divided into the three languages English, German and Turkish. On the left-hand side of the diagram the different domains are abbreviated (cf. Key to Abbreviations) in which the lexeme has definitions. In the following sections of the table there are boxes filled with the sign \( \varnothing \). This sign indicates that in the several dictionaries and encyclopaedias\(^{43}\) consulted there were no definitions for our lexeme(s) in the corresponding domain(s). Hence, we may assume that either the concept in the other languages does not exist, or the concept exists, however has a corresponding different linguistic label which is unrelated to the lexeme BRIDGE (eng/n) on the form side. We should also not exclude the possibility that the lexeme BRIDGE (eng/n) which represents one or the other concept may not have occurred in the search results, thus the field diagram may be regarded as somewhat fragmental.

It is worth pointing out the patterned boxes in Field Diagram 4.1 where definitions are entered. These definitions are gained from a technical dictionary and serve in some cases as an alternative to the definitions provided from general dictionaries, on-line dictionaries and encyclopaedias. In cases where there are definitions contained in these patterned boxes only, other sources consulted did not offer any entry.

\(^{43}\) The choice of dictionaries and encyclopaedias was made based on the availability of sources and the reliability of such. Out of the eleven sources consulted seven were hardcopy dictionaries for the usage of general language, one was a hardcopy of a scientific and technical dictionary, and the remaining three were specialised electronic on-line dictionaries.
**Field Diagram 4.1.**
Senses of BRIDGE (eng/n) in contrast with its senses in German and Turkish.

<table>
<thead>
<tr>
<th></th>
<th>English</th>
<th>German</th>
<th>Turkish</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>civ en</strong></td>
<td>• A structure carrying a road, path, railway, etc., across a river, ravine, road, railway, or other obstacle. <em>(OXF, 1989)</em></td>
<td>• Bauwerk, das einen Verkehrswege o.A. über ein natürliches od. künstliches Hindernis führt. <em>(DUDU, 1996)</em></td>
<td>• Aralardında su, çukur yer, yol gibi herhangi bir engel bulunan iki yakayı birbirine bağlayarak yolu bir yandan ötekine erişermint için yapılan ahşap, kâğir, beton ya da demir yap. <em>(TS, 1999)</em></td>
</tr>
<tr>
<td><strong>figr</strong></td>
<td>• Something which makes a physical connection between two other things. <em>(OXF, 1989)</em></td>
<td>• alle -n hinter sich abbrechen (alle Verbindungen lösen); <em>jmdm. goldene -n bauen</em> <em>(jmdm. die Verständigung, Versöhnung erleichtern).</em> <em>(BWDW, 1980-84)</em></td>
<td>• İki şey arasında ilişkiye, bağlanmayı sağlayan şey. <em>(TS, 1999)</em></td>
</tr>
<tr>
<td></td>
<td>• Something which is intended to reconcile or form a connection between two seemingly incompatible things. <em>(OXF, 1989)</em></td>
<td>• Über die - möchte ich nicht gehen (das glaube ich nicht); Antwort auf eine offenkundige Lüge viell. nach einer Fabel Gellerts, in der ein heimgekehrter Sohn durch eine vom Vater erfundene Brücke, auf der sich angeblich jeder Lügner ein Bein bräche, als Aufschneider entlarvt wird. <em>(DUD6, 1976)</em></td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>English</td>
<td>German</td>
<td>Turkish</td>
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<tr>
<td>-------</td>
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<td>---------</td>
</tr>
<tr>
<td>dent</td>
<td>A partial denture supported by natural teeth on either side. See also BRIDGEWORK. (OXF, 1989)</td>
<td>An noch vorhandenen Zähnen fest verankerter Zahnersatz, der eine Lücke im Gebiss ausfüllt. (DUDU, 1996)</td>
<td>Takma dişleri ağzıda bulunan sağlam dişlere tutturun diş protezi. (TS, 1999)</td>
</tr>
<tr>
<td>cue</td>
<td>The support for the tip of a billiard cue formed by the hand. (OXF, 1989)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mus</td>
<td>An upright piece of wood on a stringed instrument over which the strings are stretched. (OXF, 1989)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>geogr</td>
<td>A bridge passage or middle eight. (OXF, 1989)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>arch</td>
<td>An elevated structure extending across or over the weather deck of a vessel, containing stations for control and visual communications. (DSTT, 1994)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Field Diagram 4.1. (continued): Senses of BRIDGE (eng/n) in contrast with its senses in German and Turkish.

<table>
<thead>
<tr>
<th>English</th>
<th>German</th>
<th>Turkish</th>
</tr>
</thead>
<tbody>
<tr>
<td>opht</td>
<td><strong>The central part of a pair of glasses, fitting over this.</strong> (OXF, 1989)</td>
<td></td>
</tr>
<tr>
<td>electr eng</td>
<td><strong>An electric circuit with two branches across which a detector or load is connected. These circuits are used to measure resistance or other property by equalising the potential across the two ends of a detector, or to rectify an alternating voltage or current.</strong> (OXF, 1989)</td>
<td></td>
</tr>
<tr>
<td>sp</td>
<td><strong>An electrical instrument having four or more branches, by means of which one or more of the electrical constants of an unknown component may be measured.</strong> (DSIT, 1994)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>An electrical shunt path. (DSIT, 1994)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Übung, bei der der Rumpf so weit nach hinten gebeugt wird, daß die Hände den Boden berühren.</strong> (DUDU, 1996)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Verteidigungsstellung beim Ringen.</strong> (BWDW, 1980-84)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Verteidigungsstellung, bei der der schwächere Ringer mit Kopf und Fußsohlen die Matte berührt.</strong> (DUD6, 1976)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Vücdun, sırt yere döñtik olarak el, baş ya da diz yere dayanarak yav bççimi aldçç durum.</strong> (TS, 1999)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elleri arkadan yere dayayip ayak uçlarına basarak vççudu yav gibi germek.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Güççç sporunda, hasçççın bastרrmasна karşнn omuzları yere dççgдrmemek ççin, ayakları ve alı n yere dayayıp beli yukarı kalдрrarak alınan durum.</strong> (TS, 1999)</td>
<td></td>
</tr>
</tbody>
</table>
Field Diagram 4.1. (continued):
Senses of BRIDGE (eng/n) in contrast with its senses in German and Turkish.

<table>
<thead>
<tr>
<th></th>
<th>English</th>
<th>German</th>
<th>Turkish</th>
</tr>
</thead>
<tbody>
<tr>
<td>weav</td>
<td>• A device that joins two networks of the same type. (DSTT, 1994)</td>
<td>• Kleiner, meist wertvoller Teppich. (DUDU, 1996)</td>
<td>• Kleiner, schmaler Teppich; Zwischen Wohnzimmer u. Eßecke liegt eine Brücke.</td>
</tr>
<tr>
<td>commun</td>
<td>• A device that joins two networks of the same type. (DSTT, 1994)</td>
<td>• GANTRY (EncBrit) An overhead structure with a platform supporting a travelling crane, or railway or road signals. (OED, 1991)</td>
<td>• GANTRY (EncBrit) An overhead structure with a platform supporting a travelling crane, or railway or road signals. (OED, 1991)</td>
</tr>
<tr>
<td>math</td>
<td>• A line whose removal disconnects a component of a graph. Also known as isthmus. (DSTT, 1994)</td>
<td>• A line whose removal disconnects a component of a graph. Also known as isthmus. (DSTT, 1994)</td>
<td>• A line whose removal disconnects a component of a graph. Also known as isthmus. (DSTT, 1994)</td>
</tr>
<tr>
<td>min eng</td>
<td>• A piece of timber held above the cap of a set by blocks and used to facilitate the driving of spiling in soft or running ground. (DSTT, 1994)</td>
<td>• A piece of timber held above the cap of a set by blocks and used to facilitate the driving of spiling in soft or running ground. (DSTT, 1994)</td>
<td>• A piece of timber held above the cap of a set by blocks and used to facilitate the driving of spiling in soft or running ground. (DSTT, 1994)</td>
</tr>
<tr>
<td>org chem</td>
<td>• A connection between two different parts of a molecule consisting of a valence bond, an atom, or an unbranched chain of atoms. (DSTT, 1994)</td>
<td>• A connection between two different parts of a molecule consisting of a valence bond, an atom, or an unbranched chain of atoms. (DSTT, 1994)</td>
<td>• A connection between two different parts of a molecule consisting of a valence bond, an atom, or an unbranched chain of atoms. (DSTT, 1994)</td>
</tr>
<tr>
<td>petro eng</td>
<td>• An obstruction in a borehole resulting from the wall caving or the presence of a large boulder. (DSTT, 1994)</td>
<td>• An obstruction in a borehole resulting from the wall caving or the presence of a large boulder. (DSTT, 1994)</td>
<td>• A device installed in a borehole either permanently or temporarily to retain cement or other material. (DSTT, 1994)</td>
</tr>
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</tr>
</tbody>
</table>
### Field Diagram 4.1. (continued):
Senses of `BRIDGE` (eng/n) in contrast with its senses in German and Turkish.

<table>
<thead>
<tr>
<th>art</th>
<th>English</th>
<th>German</th>
<th>Turkish</th>
</tr>
</thead>
<tbody>
<tr>
<td>1905 in Dresden</td>
<td>gegründete Vereinigung expressionistischer Maler. (BWDW, 1980-84)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>group of German</td>
<td>expressionist artists, founded in Dresden in 1905, whose work marked</td>
<td></td>
<td></td>
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<tr>
<td>expressionist artists</td>
<td>the beginning of modern art in Germany. The principal members were the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>founded in Dresden</td>
<td>architectural student Ernst Ludwig Kirchner, in whose studio they</td>
<td></td>
<td></td>
</tr>
<tr>
<td>in 1905, whose</td>
<td>regularly gathered, and his friends Erich Heckel, Fritz Bleyl,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>work marked</td>
<td>Karl Schmidt-Rottluff, and later, Emil Nolde and Max Pechstein.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>the beginning of</td>
<td>Rejecting academic tradition, realism, and impressionism, they drew</td>
<td></td>
<td></td>
</tr>
<tr>
<td>modern art in</td>
<td>inspiration from German medieval and Renaissance art, art nouveau,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Germany. The principal</td>
<td>primitive art, and the French postimpressionists van Gogh, Gauguin,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>members were the</td>
<td>and the fauvies. Their name symbolized their bridge of common interests</td>
<td></td>
<td></td>
</tr>
<tr>
<td>architectural student</td>
<td>and their link to the future. Most of Die Brücke were untrained in art,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>in whose studio they</td>
<td>but the harsh colors and distorted shapes in their work successfully</td>
<td></td>
<td></td>
</tr>
<tr>
<td>regularly gathered,</td>
<td>expressed their strong feelings and vivid imaginations. The dramatic</td>
<td></td>
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<tr>
<td>and his friends</td>
<td>contrasts of black and white in their woodcuts, a medium they revived,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Erich Heckel, Fritz</td>
<td>were especially effective. The group moved to Berlin in 1910 and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bleyl, Karl Schmidt-</td>
<td>disbanded in controversy in 1913. (Encarta On-line)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rottluff, and, later,</td>
<td>Emil Nolde and Max Pechstein. Rejecting academic tradition, realism,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emil Nolde and Max</td>
<td>and impressionism, they drew inspiration from German medieval and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pechstein.</td>
<td>Renaissance art, art nouveau, primitive art, and the French</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| The principal        | postimpressionists van Gogh, Gauguin, and the fauvies. Their name symbolized their bridge of common interests and their link to the future. Most of Die Brücke were untrained in art, but the harsh colors and distorted shapes in their work successfully expressed their strong feelings and vivid imaginations. The dramatic contrasts of black and white in their woodcuts, a medium they revived, were especially effective. The group moved to Berlin in 1910 and disbanded in controversy in 1913. (Encarta On-line)

### sci fi

<table>
<thead>
<tr>
<th>English</th>
<th>German</th>
<th>Turkish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main command and control center on Galaxy class starships. (StarLib)</td>
<td>&quot;Kommandostruktur auf der Brücke eines Föderationsschiffes. ...&quot;. (SDCE)</td>
<td>Uzay gemilerinde komuta yeri. (TS, 1999)</td>
</tr>
</tbody>
</table>
Field Diagram 4.1. (continued):
Senses of BRIDGE (eng/n) in contrast with its senses in German and Turkish.

<table>
<thead>
<tr>
<th>Comp</th>
<th>English</th>
<th>German</th>
<th>Turkish</th>
</tr>
</thead>
<tbody>
<tr>
<td>• A device which forwards traffic between network segments based on data link layer information. These segments would have a common network layer address. See also gateway, layer. (FOLDOC)</td>
<td>☒</td>
<td>☒</td>
<td></td>
</tr>
</tbody>
</table>

Field Diagram 4.1 has been produced according to frequency in dictionary entries as are Diagram 4.1, Diagram 4.2, Diagram 4.3 and Table 4.1 and Table 4.2. This is due to the fact that in the dictionaries consulted the definitions for each entry were established according to frequency of use. Hence, the reason for following this tradition when preparing the tables and diagrams is also for consistency reasons. This, at the same time, makes it easier to spot semantic overlaps in the diagrams and tables produced.

As we have seen from the Field Diagram 4.1, some senses of the lexemes BRIDGE (eng/n), BRÜCKE (ger/n) and KÖPRÜ (tur/n) have a one to one correspondence relationship, specifically in their Figurative sense and in the domains Dentistry, Naval architecture, and Sports. This is unusual in terms of lexemes having several exact corresponding senses in different languages, considering the fact that each language dissect reality in different ways (Section 2.2). Hence, we come to the conclusion that the senses in each of the aforementioned domains of BRIDGE (eng/n), BRÜCKE (ger/n) and KÖPRÜ (tur/n) must be well-developed and universal to the three languages English, German and Turkish. This may be due to the domain specific characteristics of the lexemes.
The following Table 4.1 provides an overall view of the different domains in which the senses of the lexeme BRIDGE (eng/n), BRÜCKE (ger/n) and KÖPRÜ (tur/n) occur. It also enables the reader to view the overlaps and 'gaps' in each subject field. The ☞ has the same function as in Field Diagram 4.1, which demonstrates a potential conceptual or lexical gap. We must bear in mind that any of the senses of BRIDGE (eng/n) may well be in existence in German and/or in Turkish under the linguistic forms BRÜCKE (ger/n) and KÖPRÜ (tur/n) respectively, however their corresponding senses may not be labelled with the according linguistic form relevant to the language.
Table 4.1. The lexeme BRIDGE (eng/n) and the overlapping of its senses in German and Turkish.

<table>
<thead>
<tr>
<th>Polysemy</th>
<th>English</th>
<th>German</th>
<th>Turkish</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Civil engineering</td>
<td>Civil engineering</td>
<td>Civil engineering</td>
</tr>
<tr>
<td>Figurative speech</td>
<td>Figurative speech</td>
<td>Figurative speech</td>
<td>Figurative speech</td>
</tr>
<tr>
<td>Dentistry</td>
<td>Dentistry</td>
<td>Dentistry</td>
<td>Dentistry</td>
</tr>
<tr>
<td>Cue games</td>
<td>• Device</td>
<td>🎨</td>
<td>🎨</td>
</tr>
<tr>
<td></td>
<td>• Support</td>
<td>🎨</td>
<td>🎨</td>
</tr>
<tr>
<td>Music</td>
<td>• Composition</td>
<td>🎨</td>
<td>🎨</td>
</tr>
<tr>
<td></td>
<td>• Instrument</td>
<td>🎨</td>
<td>🎨</td>
</tr>
<tr>
<td>Geography</td>
<td>🎨</td>
<td>🎨</td>
<td>🎨</td>
</tr>
<tr>
<td>Naval architecture</td>
<td>• Naval technology</td>
<td>Naval architecture</td>
<td>• Construction</td>
</tr>
<tr>
<td></td>
<td>• Naval technology</td>
<td>• Naval technology</td>
<td>• Naval technology</td>
</tr>
<tr>
<td>Anatomy</td>
<td>• Nose</td>
<td>🎨</td>
<td>🎨</td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>🎨</td>
<td>🎨</td>
<td>🎨</td>
</tr>
<tr>
<td>Electrical engineering</td>
<td>• Instrument</td>
<td>🎨</td>
<td>🎨</td>
</tr>
<tr>
<td></td>
<td>• Circuit</td>
<td>🎨</td>
<td>🎨</td>
</tr>
</tbody>
</table>
Table 4.1. (continued): The lexeme BRIDGE (eng/n) and the overlapping of its senses in German and Turkish.

<table>
<thead>
<tr>
<th>English</th>
<th>German</th>
<th>Turkish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polysemy</td>
<td>Sports</td>
<td>Sports</td>
</tr>
<tr>
<td></td>
<td>• Gymnastics</td>
<td>• Gymnastics</td>
</tr>
<tr>
<td></td>
<td>• Wrestling</td>
<td>• Wrestling</td>
</tr>
<tr>
<td></td>
<td>Weaving</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Communications</td>
<td>Communications</td>
</tr>
<tr>
<td></td>
<td>• Network</td>
<td>• Network</td>
</tr>
<tr>
<td></td>
<td>• Signalling systems</td>
<td>• Signalling systems</td>
</tr>
<tr>
<td></td>
<td>Mathematics</td>
<td>Mathematics</td>
</tr>
<tr>
<td></td>
<td>Mining engineering</td>
<td>Mining engineering</td>
</tr>
<tr>
<td></td>
<td>Chemistry</td>
<td>Chemistry</td>
</tr>
<tr>
<td></td>
<td>• Organic Chemistry</td>
<td>• Organic Chemistry</td>
</tr>
<tr>
<td></td>
<td>Petroleum engineering</td>
<td>Petroleum engineering</td>
</tr>
<tr>
<td></td>
<td>• Obstruction</td>
<td>• Obstruction</td>
</tr>
<tr>
<td></td>
<td>• Device</td>
<td>• Device</td>
</tr>
<tr>
<td></td>
<td>Art</td>
<td>Art</td>
</tr>
<tr>
<td></td>
<td>Science Fiction</td>
<td>Science Fiction</td>
</tr>
<tr>
<td></td>
<td>Computing</td>
<td>Computing</td>
</tr>
<tr>
<td></td>
<td>Card game</td>
<td>Card game</td>
</tr>
</tbody>
</table>
CHAPTER 4: Analysis of the Lexeme BRIDGE (eng/n)

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Next Table 4.2 acts as a summary of Table 4.1. It has been created in order to show the overlapping of the senses of the term BRIDGE (eng/n), BRÜCKE (ger/n) and KÖPRÜ (tur/n) at a glance. As can be seen from the first column to the left, the overlapping senses in all the three languages are in Civil engineering, Figurative speech, Dentistry, Naval architecture and Science Fiction. It is this column that we would like to concentrate on, since most of the overlaps occur in this section. Next, we will describe the paradigmatic structures of the lexemes BRIDGE (eng/n) and BRÜCKE (ger/n).
<table>
<thead>
<tr>
<th>Polysemy</th>
<th>English-German-Turkish</th>
<th>English-German</th>
<th>English-Turkish</th>
<th>German-Turkish</th>
<th>English only</th>
<th>German only</th>
<th>Turkish only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Engineering</td>
<td>Anatomy</td>
<td></td>
<td></td>
<td>Sports</td>
<td>Cue games</td>
<td></td>
<td>Weaving</td>
</tr>
<tr>
<td>Figurative Speech</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Music</td>
<td></td>
<td>Art</td>
</tr>
<tr>
<td>Dentistry</td>
<td></td>
<td></td>
<td></td>
<td>Geography</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naval Architecture</td>
<td></td>
<td></td>
<td></td>
<td>Ophtalmology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science Fiction</td>
<td></td>
<td></td>
<td></td>
<td>Electrical engineering</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Communications</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mathematics</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mining Engineering</td>
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<td></td>
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<td></td>
<td></td>
<td>Organic chemistry</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td>Petroleum Engineering</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Computing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homonymy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Card game</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.1.2.2. Paradigmatic Sense Relations of Identity and Inclusion (Vertical Relations) with Focus on the Lexeme BRIDGE (eng/n)

Moving on from the discussion on the different domains and senses of the lexeme BRIDGE (eng/n) compared with the lexemes of BRÜCKE (ger/n) and KÖPRÜ (tur/n), the following will concentrate on the paradigmatic sense relations of identity and inclusion, i.e. vertical relations, with focus on the lexeme BRIDGE (eng/n) and BRÜCKE (ger/n). Electronic texts have been collected from the Internet, and on-line and hardcopy dictionaries have also been used, in order to generate the hierarchical structures which reflect the vertical relations of the lexemes BRIDGE (eng/n) and BRÜCKE (ger/n).

Due to difficulties in information retrieval and insufficiency in sources, it was not possible to produce hierarchical structures of the lexeme KÖPRÜ (tur/n). Hence, the following sections will look into the comparison of BRIDGE (eng/n) and BRÜCKE (ger/n) in terms of taxonomic and meronymic hierarchies.

(i) Taxonomic Hierarchies:

Taxonomic hierarchies are classificatory systems which reflect the way speakers of a language categorise their experiences of the world (Section 2.4.1.1). Diagrams 4.4a and 4.4b set a valuable example in this respect.

Diagram 4.4a shows the six main bridge types under the aspect A=‘Bridge types in civil engineering’ according to their structural designs44. The names denoting the six different bridge types are the hyponyms related directly to the hyperonym BRIDGE (eng/n), each of which represent the nodes (branching points) in the hierarchical structure. In hierarchies we

44 Based on the text Bridge Types by Matsuo Bridge Co. (cf. Appendix 3).
can observe how speakers of a language categorise their experiences of the world since they are at the same time classificatory systems. We will begin discussing each node at the basic level where the richest set of characteristic properties are displayed. The analysis and discussion of Diagram 4.4a will also contain information on bridges in civil engineering terms, since we need to gain some background knowledge on the topic in order to arrive at a sensible conclusion of how the hierarchical structure was constructed.

Bridge types depend largely on the required dimensions for the bridge and the type of traffic to be carried. The different sizes and shapes of bridges encountered today reflect thousands of years of progress in engineering, technology, and building materials. We would like to commence our discussion with the girder bridge, which is the first category in the hierarchical structure. Girder bridges are the most common and most basic bridge type. The way they are built nowadays shows us that I-beam girders and box-girders are the two most common amongst other type of girder bridges. The name I-beam, as one can guess, suggests that the cross section of the girder takes the shape of the capital letter I; hence the term I-beam girder describes a specific type of girder. A box-girder is much the same as an I-beam girder, except that the girders take the shape of a box. The same naming principle applies to the remaining two girder bridge types, i.e. the T-shaped girder and the Pi-shaped girder. This naming process tells us that much of the names given to bridges is through associating the shape of the designed structure with a most suitable linguistic form. Naming newly evolved concepts (or in linguistic terms: neologisms) is more or less in the hands of scientists. The process can occur in any scientific field since inventions, discoveries or innovations need to be named so that communication can succeed.
Diagram 4.4a. Lexeme BRIDGE (eng/n): Bridge types (1) in civil engineering (Taxonomic relations).
The truss is the second element in the hierarchical structure, which is basically a simple skeletal structure whose individual members are only subject to tension and compression forces, and not bending forces. This is an interesting feature which distinguishes trusses from the remaining bridge types. From the hierarchical structure we can see that trusses, either simple or continuous, can be Warren, Pratt or Howe according to the basic design used. Mentioning the fact that trusses can either be simple or continuous, this additional information has been inserted into the hierarchy as both mass nouns are abstract and have the role of indicating the grouping only; hence the dotted boxes.

Rigid frame bridges, also known as Rahmen bridges\textsuperscript{45}, have their piers and girders as one solid structure in contrast to standard girder bridges, where the girder and the piers are separate structures. Though there are many possible shapes for a rigid frame, the styles used almost exclusively these days are the batter post frame, the Pi-shaped frame, and the V-shaped frame, hence there are no other hyponyms displayed in the hierarchical structure. It is perhaps crucial at this point to emphasise that such hierarchical structures, as the one being discussed, are only a fragment of reality\textsuperscript{46}.

Looking at cable-stayed bridge, or also known as cable-braced bridge, it needs to be pointed out that there are no distinct classifications for this type of bridge. They come under the heading of cable-stayed bridge and can only be distinguished by the number of spans, towers, cables, and girder type etc. There are many variations in the number and type of towers, as well as the number and arrangement of cables. Typical towers used are, as outlined in the hierarchical structure, single, double, portal, or A-shaped towers. Cable

\textsuperscript{45} According to the surname of the German inventor of rigid frame structures; Rahmen bridge is in this context a synonymous expression for Rigid frame bridge as it constitutes the very same concept. Labelling newly evolved concepts after the name of its inventor is a conventional naming method.

\textsuperscript{46} In line with recent theories of the mind, we can recall that cognitive categories combine to build networks called cognitive models, similar to the hierarchical structure being discussed, which can be open-ended (cf. Section 2.4 and Section 2.2.2).
arrangements also vary greatly. Some typical varieties, based on the information in the electronic texts collected, are mono, harp, fan, and star arrangements. When Subject B was consulted, he stated that he had never heard of the variant cable-braced bridge, and that he knew only about cable-stayed bridge which describes that particular type of bridge. Also, he acknowledged that cable-stayed bridges can be of various kinds with no particular linguistic forms. The basic principle is that a typical cable-stayed bridge is a continuous girder with one or more towers erected above piers in the middle of the span. It is structured so that from these towers cables stretch down diagonally (usually to both sides) and support the girder.

It is interesting to know how communication is achieved amongst civil engineers or even specialists in related fields who are actually keen on holding conversation where the language is ideally specific and economic. Subject B explained that, when experts in the field communicate about a particular type of cable-stayed bridge, they refer to the distinct features of the bridge. In linguistic terms, the existence of a concept with no form represents a perfect example for lexical gaps; hence the dotted boxes in the diagram. Also, due to the fact that cable-stayed bridges are a form of continuous girders the hierarchical structure in Diagram 4.4a has been reorganised (cf. Diagram 4.4b); girder, being one of the main bridge types has been divided into two: simple girder and continuous girder, and cable-stayed bridge has been placed under the node continuous girder as its hyponym.

Suspension bridges and cable-stayed bridges may look similar, however they are quite different; a typical suspension bridge is a continuous girder with one or more towers erected above piers in the middle of the span. The girder itself is usually a truss or box girder though in shorter spans, plate girders are not uncommon. At both ends of the bridge large anchors or counter weights are placed to hold the ends of the cables. In the light of this information, the node for Suspension bridge was placed under Continuous girder (Diagram 4.4b).
BRIDGE (eng/n) - Types 2 (civ en)

Diagram 4.4b. Lexeme BRIDGE (eng/n): Bridge types (2) in civil engineering (Taxonomic hierarchies)
When Subject D was consulted, he suggested that a seventh element, i.e. the Bow string bridge, could be added to the hierarchical structure in Diagram 4.4a. He also mentioned that there is a very old and conventional bridge type which is the hybrid of a Suspension bridge and a Bow string bridge. He included that the reason for its existence not being mentioned in the many sources referred to, may be due to the fact that it is becoming extinct as it is costly and difficult to construct. Subject D also did not agree with the structure of the second hierarchy as in Diagram 4.4b which was structured so as to reflect the ambiguity problem present in the text on bridge types (cf. Appendix 3: Text on “Bridge Types”). This text, in which information on the structuring principles of bridges is contained, is suggestive of both hierarchical structures. Diagrams 4.4a and 4.4b are the summary of the two possible versions of the same text. The danger lies in that readers gain twofold information because the text leaves room for interpretation. We may conclude that even in the ‘exact sciences’ different interpretations of a concept are possible.

Subject D stated that the structuring must have been made on the basis of appearance of the main bridge types, that however an engineer’s mind classifies the bridges according to the first hierarchy as it sees the stress points, load transferring mechanisms, supporting principles, aerodynamic stability and the general arrangement when looking at a bridge. Although, for instance, the text Bridge Types may suggest that a “suspension bridge is a continuous girder” or that a “cable-stayed bridge is a continuous girder”, the terms suspension bridge and cable-stayed bridge can still not be placed under the node girder or continuous girder, as factors, such as the stress points etc., which cannot be identified with

47 When a well-established concept, such as a hybrid, developed out of two or more concepts together, has no distinct linguistic form, it cannot be placed in the hierarchical structure. This is not only because the concept has no specific linguistic form, but also due to the fact that branches would intersect because the boundaries of the concept are not clear enough. As a result, lexical gaps may occur quite frequently, especially in levels higher than the basic level, in particular in real-life taxonomies (Section 2.4.1.1 (l)).

48 These statements have been underlined in the relevant sections of the text consulted (cf. Appendix 3: Text on “Bridge Types” sections under the headings Suspension and Cable Stayed).
the naked eye, have the role in determining how the hierarchy in reality should be organised. Subject D added that, by comparing the two hierarchies, he could see from the second hierarchy the reasons for why many of the communication problems occur which are frequently experienced between structuring civil engineers and architects, namely that many architects cannot see civil engineering concepts with the eye of a civil engineer.

From a linguistic point of view, the reason for the above problem can be explained as follows: the psychologically focal categories between civil engineers and architects are not an exact match (i.e. there is no exact overlap) since the architect has somewhat a different knowledge of the distinctive componential features of a concept. Hence, we acknowledge the fact that, amongst laypersons or between layperson and expert, what is psychologically focal is not always analytically crucial, in other words, the distinctive features of a concept may be arranged differently in the minds of speakers of a language. What is important is that speakers of a language agree on basic common features which are psychologically prominent but not essentially truthful to reality. However, problems arise in expert communication. As we have seen from the two hierarchies in Diagram 4.4a and 4.4b, analytical distinctions enable far greater insight into the details of a given concept (Nida, 1975:21-22); and such distinctions, therefore, need to be existing parallel to each other and in strict correspondence in the mental lexicons of expert speakers to achieve unambiguous communication. The way we experience reality in our surrounding world determines the way we see the truth (psychological validity of components of meaning). Nevertheless, just as we should not classify a whale as being a type of fish because it swims in the sea (analytical validity), we should also not claim for lexemes to belong to a particular domain without having studied their actual senses to a full extent. On the other hand, we cannot expect laypersons to be aware of the componential features which combine to make up the meanings of lexical units - of these diagnostic elements, which are determinate for behaviour, laypersons need not be consciously aware (Nida, 1975:205).
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Having discussed all the significant elements in the hierarchical structures (in Diagrams 4.4a and 4.4b), we can say that, looking back at the principles which govern paradigmatic sense relations of identity and inclusion (vertical relations) both the hierarchical structures have followed all the established rules. In each hierarchical structure the beginner, i.e. the hyperonym, was the highest and also the only starting point in the hierarchical structure. All elements in the structure were in relation with the beginner, and there were no upward divisions. We could also see clearly that subordinate terms had inherited characteristics of their superordinates; consequently, each subordinate term was more specific intensionally than their superordinates. Moreover, each category was ascribed to certain features which were shared by other members in the hierarchical structure. And last but not least, relations between descending nodes were transitive (Section 2.4.1.1).

The next hierarchical structures to be discussed are based on the lexeme BRIDGE (eng/n) in German. The first hierarchical structure shows the paradigmatic relationships between the main types of bridges with the aspect of static system. The second shows the paradigmatic relationships between bridge types sorted according to the categories of movable or non-movable bridges.

In the hierarchical structure in Diagram 4.5, as can be seen, the hyperonym BRÜCKE (ger/n) has seven hyponyms which represent the basic level of the hierarchical structure. From the several sources consulted, the information on the different types of bridges was not sufficient to complete the hierarchy, hence it is fragmental. Also, when compared with the English versions of hierarchical structures, such as Diagram 4.4a and Diagram 4.4b, dealing with the lexeme BRIDGE (eng/n), we notice that the basic levels in these contain six and four elements respectively. There can only be two reasons for the lack of elements at the basic level: either there is somewhere a conceptual or lexical gap, which, in a well-established scientific field like civil engineering, is highly unlikely as the basic principles of construction are
global, and there have been not so many changes in the past on the principles of bridge
designs (Subject B), or the collected German texts failed to deliver the expected result in that
they did not cover as much information as the English texts; the latter offers a more likely
reason.
BRÜCKE (ger/n) - Types (civ en)

Diagram 4.5. Lexeme BRÜCKE (ger/n): Bridge types in civil engineering (Taxonomic hierarchies)
Another interesting feature of BRIDGE (eng/n) would be to look at its relation of inclusion under the aspect of A='Design according to purpose of construction'. In this hierarchy we can see that the beginner has two abstract nouns as hyponyms, such as Natural bridges and Artificial bridges. The latter is divided into two other abstract nouns, i.e. Temporary bridges and Permanent bridges. As we already know, abstract nouns have the function of describing the group to which a concrete noun belongs. They act more as made-up abstract names whose objects are not observable in nature (Section 2.4). Concepts in boxes with dotted lines have been added to the hierarchy following the suggestion of Subject D. These indicate a factual addition to the structure which were not found in the sources consulted.

**BRIDGE (eng/n) - Design (civ en)**

![Diagram 4.6. Lexeme BRIDGE (eng/n): Bridge designs in civil engineering according to purpose of construction (Taxonomic hierarchies)](image-url)
The hierarchical structure in Diagram 4.7 pictures the lexeme BRÜCKE (ger/n) under the aspect of $A$='Design according to purpose of construction'. It has been generated by following the same principles when establishing the hierarchical structure in Diagram 4.6 except that some of the nodes have been translated from English into German in order to complete the structure as some of the crucial nodes which denote abstract nouns (such as Temporäre Brücken and Permanente Brücken) were not mentioned in the texts which the information was retrieved from. The translation of these nouns has been achieved by examining the presence of their linguistic forms and senses. However, nodes whose equivalents could not be found in German (e.g. hyponyms to pontoon bridges, such as pneumatic rubber pontoon, concrete pontoon etc. or hyponyms to folding bridges, such as scissors assault bridge) have been left out from the structure. As a result, the German version of the taxonomic structure is leaner than its English version.

**BRÜCKE (ger/n) - Design (civ en)**

![Diagram 4.7. Lexeme BRÜCKE (ger/n): Bridge designs in civil engineering according to purpose of construction (Taxonomic hierarchies)](image-url)
(ii) Meronymic Hierarchies:

Meronymic hierarchies reflect the partonomy, i.e. part-whole, relationships of a given concept and are concerned with relations of dominance (Section 2.4.1.1. (ii)). They divide up objects into smaller units and can name each unit in every language with differences, although these differences may be minor. The following vertical relations are interesting examples.

The hierarchical structure in Diagram 4.8 shows the meronomy relations of a bridge on a naval vessel under the aspect A='Electronic systems in a naval vessel's bridge'. It pictures the lexical reflex of the 'parts' of a ship's bridge in relation to its 'whole', specifically, the electronic equipment used in the Command station and Radio rooms in relation to the bridge. Starting with the word Island which is an alternative word used for Superstructure, it needs mentioning that Island is a metaphoric expression for superstructure on an aircraft carrier. It resembles an 'island' surrounded by the sea, which in fact is the elevated part of a vessel where the bridge is situated.

The Engine room has been included into the structure and has been placed in a box with dotted lines as it can be seen as an extension of a ship's bridge since all commands coming from the ship's bridge have an effect on the engines and machinery used. For instance, if the captain wanted the anchor to be lifted or the lifeboats to be lowered he would have to contact an engineer in the engine room ordering him to activate the winding gears. Communication between bridge and the engine room is achieved mainly by telephone, however a communication panel with flashing lights is another alternative. Hence, we need to consider an Engine room as being part of a ship's bridge, although there is no direct relation between the two.

The hierarchical structure in Diagram 4.8 was generated based on texts in Graham (1993), Hawkes (1999), Humble (1993), Jacobs (1987), and Sauvain (1989) (cf. Bibliography, section Other Sources Consulted).
Diagram 4.8. Lexeme BRIDGE (eng/n): The electronic systems in a naval vessel's bridge (Meronymic hierarchies)
The Command station is divided up into two main parts, i.e. the Navigational equipment and Weather analysis instruments, which include important equipment for navigation as well as weather forecast. The Command station is the heart of the bridge where important decisions are made which affect the course of the ship. When Subject C was consulted on the correctness of the hierarchy he mentioned that ships' bridges have also a second Command station in case the main Command station fails, however this is unique to military vessels. When looking at what comprises Navigational equipment, it needs mentioning that there is frequent use of acronyms and abbreviations. For example, GPS which is an acronym and stands for Global Positioning System is also a synonym for Satellite Navigator (or briefly SatNav), or the SINS Gyroscope which stands for Ship's Internal Navigation System and the LSR meaning Live Situation Report are all acronyms which enable economic communication between crew members. Examples for abbreviations are the terms Autopilot (short for Automatic pilot) and SatNav (Satellite Navigator).

The Radio room, which constitutes another crucial part of a ship's bridge, embraces several important equipment for communication with the outside world. In this part of the bridge, for instance, the Depth Sounder has three synonyms, such as the Echo sounder, Sonar (Sound Navigation And Ranging) equipment and Digital depth display. In the several sources consulted all these terms denoted the same equipment. However, note that in the hierarchical structure generated this equipment contains only Active sonar as part of its function; it does not include Passive sonar. This is due to the fact that Active sonar is used by ships, and Passive sonar by submarines. In order to determine whether all these four terms are in fact synonyms we need to look into what really comprises the concept of an Echo sounder. For this reason, we need to compare the senses of Active sonar and Passive sonar. "Active sonar works by sending out bursts of sound and picking up any echoes that bounce back from objects in the sound waves' path. The sonar sounds are so high that they are far beyond the highest notes we can hear with our ears" (Graham, 1993:30). Ships use active sonar in order to track submarines and other ships. "Passive sonar system does not send out
sound waves, it just listens to them. Passive sonar system is used by vessels like submarines which want to keep their position a secret. If active sonar was used, the sound waves would be picked up by the sonar systems of nearby ships" (ibid). From the above information, we come to the conclusion that all these four terms, i.e. Depth sounder, Echo sounder, Sonar equipment and Digital depth display, are only near synonyms as they behave in a way that the meanings they denote do not exactly overlap. For a ship a depth sounder is a sonar system which uses active sonar waves, for a submarine however it is a system which uses passive sonars, hence the partial overlap in meaning.

In the following hierarchical structure in Diagram 4.9 the sections of a ship's bridge under the aspect A='Naval architecture/Naval vessel' are represented. Here, besides paronymy relations we can also see an example for linear polysemy (Section 2.3.1.3). Focusing on the term FLYING BRIDGE, which represents a case for co-hyponymy, it can be observed that one of the hyponyms carries the same lexical label as the hyperonym FLYING BRIDGE. There can be two reasons for that: either the superordinate term has compensated by shifting downward or the subordinate term has shifted upward and has created the term FLYING BRIDGE. The on-line dictionary consulted includes dates on which the term first appeared; for FLYING BRIDGE it indicated 1909 and for FLYBRIDGE 1965. Based on this information we may assume that there was a downward shift since the hyponym FLYBRIDGE was introduced at a later date. However, in majority of cases it is difficult to trace back which shift actually took place to fill a lexical gap, sometimes it is even impossible to find out.

50 Based on definitions provided by Meriam-Webster's Collegiate Dictionary in yourdictionary.com.
BRIDGE (eng/n) - Sections (nav arch)

Diagram 4.9. Lexeme BRIDGE (eng/n):
Sections of a bridge in a naval vessel (Meronymic hierarchies)

Diagram 4.10 reflects a meronymic hierarchy which will enable us to make a comparison with the previous meronymic hierarchy in Diagram 4.9. It describes the structure of the German lexeme BRÜCKE (ger/n) under the aspect A='Naval architecture/Naval vessel'. The structure has been generated based on definitions found in on-line glossaries and dictionaries, such as Kleines Seemannslexikon (http://mitglied.tripod.de/WKernchen/index.html), Maritimes Lexikon (http://www.nsnet.com/) and based on definitions obtained from Duden, Deutsches Universal Wörterbuch (1996).

Lexemes used in the structuring of the hierarchy are listed below, some of which are encircled. Circles with the same pattern represent same senses. The arrows show the relationship between BRÜCKE, KOMMANDOBRÜCKE and SCHIFFSBRÜCKE. Starting with the first arrow, we arrive at the information that BRÜCKE stands for KOMMANDOBRÜCKE. Looking up the definition of KOMMANDOBRÜCKE the dictionary tells us that it is a "Schiffsbrücke für den Kapitän" etc. And when the lexicon is consulted again, this time we
observe that for a definition of the lexeme SCHIFFSBRÜCKE we arrive back at KOMMANDOBRÜCKE. It seems that meanings in this lexicon are 'defined' merely by means of substitutable words, rather than by listing of their distinctive features (Nida, 1975:172). This results in the formation of circularity (Goddard, 1998:28-30), which does not meet the desired effect of a dictionary.

We should not be misled by the information provided above. The lexeme BRÜCKE (ger/n) is not used merely in the sense of Kommandobrücke; at the same time, it includes the senses of Schiffsbrücke and Steuerbrücke as well as components, such as Brückennock and Brückendeck etc.\(^{52}\), in its meaning. As a result, BRÜCKE (ger/n) is a lexeme used not only in a narrower sense but also in an extensive way. This may be a case for linear polysemy, where the superordinate term occurs also as its own subordinate (Section 2.3.1.3). Whether this is really the case can be explained as follows: In Diagram 4.10, the hierarchical structure has Schiffsbrücke as its beginner which has two subordinates, i.e. Anlegebrücke and Kommandobrücke. This part of the hierarchy is actually not a reflection of a partonymy relation; it pictures the two possible senses of Schiffsbrücke. We will be focusing only on

---

\(^{51}\) Cf. Diagram 4.8.
Kommandobrücke since Anlegebrücke is a lexeme which can be placed under the aspect of A='Civil engineering' as it is defined as a Landesteg or Landungsbrücke für Schiffe (Duden). The term Kommandobrücke has two subordinates, such as Brückennock and Brückendeck. This part of the hierarchy reflects the partonymy relations of the term. As can be seen from the definitions provided earlier, all five terms are in relation to each other in that some of which create an effect of linear polysemy. However, by looking at the data collected, we come to the conclusion that the paradigmatic relations between the lexemes BRÜCKE (ger/n), KOMMANDOBRÜCKE, BRÜCKENNOCK and BRÜCKENDECK in fact do not mirror linear polysemy.

BRÜCKE (ger/n) - Sections (nav arch)

![Diagram 4.10. Lexeme BRÜCKE (ger/n): Sections of a bridge in a naval vessel (Meronymic hierarchies)](image)

52 We need to take into consideration that the hierarchy in Diagram 4.10, which shows the above listed lexemes in relation, is only a fragment.
Moving on to the paronymy relation in Diagram 4.11, we can see that there are the elements *Main bridge* and *Battle bridge* under the aspect of A = 'Science Fiction/Spaceship'.

The definitions for each of the two elements are provided below:

(Main) bridge
Main command and control center on Galaxy class starships.

Battle bridge
Secondary command and control center on Galaxy class starships. The battle bridge is located atop the stardrive section of the ship, and is normally used in battle situations when the stardrive section has separated from the saucer section and is operating independently.

Source: Startrek Library

Based on the above definitions the relationship between *Main bridge* and *Battle bridge* looks as follows:

**BRIDGE (eng/n) - Sections (sci fi)**

![Diagram 4.11. Lexeme BRIDGE (eng/n): Sections of a spaceship's bridge (Meronymic hierarchies)](image)
Therefore, we can speak of the relation \(<\text{Main bridge}, \text{Battle bridge}, \text{Science Fiction-}\text{en}/\text{Spaceship}>\) \(\in\) PART as being true.

In the German partonymy relation in Diagram 4.12 we have two synonyms for Kommandobrücke, such as Kommandozentrale and Hauptbrücke. These terms have been extracted from texts collected on the Internet\(^5\). Manual scanning of the texts has shown that the three lexemes were used to refer to the same concept, hence \(<\text{Kommandobrücke, Kommandozentrale, Hauptbrücke }\text{Science Fiction-ger/Raumschiff}>\) \(\in\) SYN. Also, we can say that the relation \(<\text{Kommandobrücke }/\text{Kommandozentrale }/\text{Hauptbrücke, Kampfbrücke}\text{ Science Fiction-ger/Raumschiff}>\) \(\in\) PART.

**BRÜCKE (ger/n) - Sections (sci fi)**

\[
\text{BRÜCKE (ger/n)}
\]

\[
\begin{array}{c}
\text{Kommandobrücke} \\
\text{Kommandozentrale} \\
\text{Hauptbrücke} \\
\end{array}
\]

\[
\text{Kampfbrücke}
\]

Diagram 4.12. Lexeme BRÜCKE (ger/n):

Sections of a spaceship's bridge (Meronymic hierarchies)

---

\(^5\) Cf. Appendix 1, Table AP1.6.
Having discussed the paradigmatic sense relations of identity and inclusion (vertical relations) of the lexemes BRIDGE (eng/n) and BRÜCKE (ger/n), we will now make a few concluding remarks.

4.2. CONCLUSION

In this chapter we have studied the paradigmatic sense relations of identity and inclusion (vertical relations) with focus on the polysemous lexeme BRIDGE (eng/n). Preliminary findings suggest that cognition, which determines our understanding of certain concepts, has a great impact on communication; in particular, studies with Subject D confirm this. The way our mental lexicon is built has its foundations on the perception, cognition and the early inputs we gain in childhood and throughout our lives on the particular issues of what is surrounding our extra-linguistic world.

In CS1, we could also observe that paradigmatic structures reflect the semantic choices possible at a particular point in a structure, and that they involve lexical units which belong to the same syntactic category. Taxonomic hierarchies, which are based on paradigmatic relations, are classificatory systems which reflect the way speakers of a language categorise their experiences of the world (Section 2.4.1.1). Hierarchical structures in Diagrams 4.4a, 4.4b, 4.5, 4.6, and 4.7 are examples of this. Meronymic hierarchies, also based on paradigmatic relations, are mainly concerned with relations of dominance (Section 2.4.1.1). Diagrams 4.8, 4.9, 4.10, 4.11, 4.12 are relevant examples of such relations. Both types of hierarchical structures have reflected the internal similarities of the lexemes BRIDGE (eng/n) and BRÜCKE (ger/n) to other related concepts and forms, and their distinctiveness from each other. Hence, hierarchical structures indirectly reflect the semantic and/or lexical
fields a lexeme belongs to; if we were not aware of such internal similarities and distinctivenesses the organisation of hierarchies would have been impossible.

Having discussed what concerns the paradigmatic structures of the lexeme BRIDGE (eng/n), we will now proceed to Case Study 2 (CS2) where we will place the lexeme AUFGEBEN (ger/v) under scrutiny.
CHAPTER 5

CASE STUDY 2

ANALYSIS of the LEXEME AUFGEBEN (ger/v)

5.1. ANALYSIS and DISCUSSION of RESULTS

Sense opposition, seen as a specific form of polysemy, first appeared with Carl Abel and his studies on Egyptian hieroglyphs in 1884. This phenomenon went almost unnoticed for the next hundred years or so, until further investigations were undertaken about its linguistic nature by Lutzeier. In this chapter, we will be providing an outline for each phase of the analysis procedures, and will be analysing and discussing data and results based on
CHAPTER 5: Analysis of the Lexeme AUFGEBEN (ger/v)

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linguistic theories with regard to paradigmatic sense relations of exclusion and opposition (horizontal relations), and syntagmatic sense relations. The study involves the structural description of the polysemous lexeme AUFGEBEN, a verb from German.

In our study a componential analysis of the lexeme AUFGEBEN (ger/v) will be carried out which will reveal that opposition occurs in its underlying senses to initiate and to terminate. Comparison will be made between the three languages German, English and Turkish so as to reveal how the concept behaves in contrast.

The final step of the study then concentrates on some syntagmatic structures with the lexeme AUFGEBEN (ger/v) as the keyword. A map will show us some of the common collocation patterns.

5.1.1. ANALYSIS PHASES of CASE STUDY 2 (CS2)

This section outlines the several processes of analysis of Case Study 2 (CS2). Each stage contains a brief description on the target set, the method applied and the results achieved. The outline also provides short remarks in order to enlighten the reader on hidden aspects of the issue.

CS2 - Analysis Phase 1

Target: Finding a polysemous keyword in German which sets out an example for the phenomenon of sense opposition, i.e. Gegensinn.

CHAPTER 5: Analysis of the Lexeme AUFGEBEN (ger/v)

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Results: The lexeme AUFGEBEN (ger/v), a polysemous verb in German, was identified as potentially having sense opposing characteristics.

Notes: ---

CS2 - Analysis Phase 2.1

Target: Providing the English equivalent for each of the senses of AUFGEBEN (ger/v) in order to assist English-speaking audience.

Method: Looking up English equivalents of the lexeme AUFGEBEN (ger/v) from the bilingual Collins German-English Dictionary.

Results: An outline of the corresponding senses of the entry in English as in Table 5.1 with some examples.

Notes: Each sense has been labelled with the code S, followed by an abbreviation indicating source retrieved and a number (e.g. SCOL1). Senses where there is a potential for sense opposition are typed in bold font.

CS2 - Analysis Phase 2.2

Target: Outlining each sense of the lexeme AUFGEBEN (ger/v) in German as in Table 5.2 with some examples.

Method: Extracting relevant entry from the monolingual German dictionary Duden: Deutsches Universalwörterbuch.

Results: Table 5.2 outlines each sense of the entry AUFGEBEN (ger/v). Representing relevant examples for each sense of the lexeme AUFGEBEN (ger/v).
CHAPTER 5: Analysis of the Lexeme AUFGEBEN (ger/v)

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Notes: Each sense has been labelled with the code S, followed by an abbreviation indicating source retrieved and a number (e.g. S_DUDU_1). Senses where there is a potential for sense opposition are typed in bold font.

CS2 - Analysis Phase 2.3

Target: Comparing senses of the lexeme AUFGEBEN (ger/v) as entered in the monolingual and bilingual dictionaries in order to locate gaps and/or overlaps.

Method: Creating two-way comparative tables (Table 5.3a and 5.3b).

Results: The monolingual dictionary has the sense 'übergeben' as its foremost entry whereas the bilingual dictionary treats 'als Schularbeit auftragen' as its initial entry. There is no exact overlap of the senses covered between the two dictionaries.

Notes: The fact that there is no exact overlap between the two dictionaries consulted has no negative impact on the case study. The study continues to base its focus on the entry from the monolingual dictionary.

CS2 - Analysis Phase 3

Target: Outlining the senses of the keyword AUFGEBEN (ger/v) (Field Diagram 5.1). Comparing the keyword AUFGEBEN (ger/v) with its corresponding senses in English and Turkish.

Method: Manual scanning of monolingual dictionaries in the relevant languages.

Results: Findings have shown that the keyword AUFGEBEN (ger/v) represents a case for sense opposition of incompatible kind.
Also, each of the senses of AUFGBEBN (ger/v) corresponds to one or more entries in the target languages English and Turkish.

Notes: The fact that each of the senses of AUFGBEBN (ger/v) has more than one equivalent in the target languages English and Turkish indicates incompatibility in collocational patterns across languages.

For the Turkish senses, the monolingual Turkish dictionary Türkçe Sözlük was consulted.

Senses for the entries in Turkish have been represented with the code S for Sense, followed by the abbreviation TS which stands for Türkçe Sözlük and the number of the entry (e.g. STS1).

CS2 - Analysis Phase 4

Target: Creating a sense identification map (as in Table 5.4) in order to identify each sense component of the lexeme, so as to validate the hypothesis of it representing a case for the phenomenon of sense opposition.

Method: Consulting the monolingual German dictionary Duden: Deutsches Universalwörterbuch.

Results: A table with an overview of the semantic markers of the lexeme AUFGBEBN (ger/v).

Notes: Senses S_DUDU7a-e have shared common features, but at the same time characteristics which distinguish them from each other; reason for why S_DUDU7 is divided into sub-categories, unlike S_DUDU1.
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CS2 - Analysis Phase 5
Target: A componential analysis of the lexeme AUFGEBEN (ger/v).

Method: Decomposing each sense of the lexeme into its semantic components (as in Table 5.5).
Validating the suggested componential analysis whereby consulting three informants.

Results: Lexical decomposition of each sense of the lexeme AUFGEBEN (ger/v).
Use of informants.
Verifying sense opposition.

Notes: Consulting Subject E has proven that collocational patterns across languages can in some instances be incompatible, i.e. there is no exact equivalence with regard to collocations when contrasting two or more languages.

CS2 - Analysis Phase 6
Target: Analysis of some syntagmatic structures with focus on the lexeme AUFGEBEN (ger/v) as a keyword.

Method: Collecting electronic data from the internet by using the search engine Google.
Manual scanning of the data collected.

Results: A collocation chart has been created which reflects the possible combination of certain lexemes and their interrelation with the keyword AUFGEBEN (ger/v).
Suggestions have been made on the possible disambiguation processes.

Notes: ---

The above provided a detailed description of each analysis phase of CS2. The next section will discuss the nature of the lexeme AUFGEBEN (ger/v).
5.1.2. The LEXEME AUFGEBEN (ger/v)

The lexeme AUFGEBEN (ger/v) is a verb from German which is of polysemous character (Section 2.3.1 and Section 2.4.1.2.1, cf. Lutzeier, 2001:75). In the investigation of its nature with regard to sense opposition, as an initial task, we would like to identify its corresponding senses in English so as to introduce speakers who do not possess the required competence in German for them to gain some insight into the meaning of its different senses. Hence, Collins German-English Dictionary (1991) was consulted for this purpose. Each sense (S = Sense) has been given a code such as SCOL indicating the source consulted (COL = Collins German-English Dictionary) and a number suggesting the order of appearance of its senses, e.g. SCOL1. Below is an extract which provides an overview of the lexeme’s senses in English as presented in the entry:

<table>
<thead>
<tr>
<th>SCOL1.</th>
<th>Hausaufgaben to give, to set; schwierige Frage, Problem to pose (jmd. for sb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCOL2.</td>
<td>(übergeben, abgeben) Koffer, Gepäck to register; Luftgepäck to check in; Brief to post; Anzeige to put in, to place; Bestellung to place.</td>
</tr>
<tr>
<td>SCOL3.</td>
<td>Kampf, Hoffnung, Arbeitsstelle, Freund etc. to give up</td>
</tr>
<tr>
<td>SCOL4.</td>
<td>(verloren geben) Patienten to give up; (fig) Sohn, Schüler to give up (with or on)</td>
</tr>
<tr>
<td>SCOL5.</td>
<td>(inf) Essen to serve</td>
</tr>
<tr>
<td>SCOL6.</td>
<td>(sich geschlagen geben) to give up or in</td>
</tr>
<tr>
<td>SCOL7.</td>
<td>(inf: bei Tisch) to serve (jmd sb)</td>
</tr>
</tbody>
</table>

(Collins German-English Dictionary, 1991)

Table 5.1. Senses of AUFGEBEN (ger/v) in English.
The entry in Collins German-English Dictionary offers seven different senses for the lexeme. For precise definitions of each of the senses of the lexeme AUFGEBEN (ger/v), however, we need to consult a monolingual dictionary in German. When we look at the entry in the monolingual German dictionary Duden: Deutsches Universalwörterbuch, for instance, we can clearly see that the lexeme has also seven senses, some of which are subdivided, e.g. S_{DUDU}^{2a} or S_{DUDU}^{7a}. Lexicographers take such action when several senses have common features. Below is an extract from the monolingual German dictionary Duden: Deutsches Universalwörterbuch:
### CASE STUDY 2

**AUFGEBEN (ger/v)**

<table>
<thead>
<tr>
<th>Sense</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>S\textsubscript{DUDU1}.</strong></td>
<td>zur Weiterleitung, Beförderung, Bearbeitung übergeben: Pakete a.; ein Telegramm am Schalter, bei/auf der Post a.; eine Annonce a. (in die Zeitung setzen); der Gast gab beim Ober seine Bestellung auf.</td>
</tr>
</tbody>
</table>
| **S\textsubscript{DUDU2}.** | a) als Schularbeit aufraten: der Lehrer gab ihnen eine Nacherzählung, ein Gedicht auf; er hat uns viel aufgegeben;  
| | b) als Aufgabe stellen, zur Auflösung vorlegen: die Sphinx, die jedem Vorübergehenden ein Rätsel aufgab;  
| | c) (geh.) auferlegen; auftragen, etw. zu tun: zu Neujahr, so war uns aufgegeben worden, hatten wir das Anwesen zu räumen; sie glaubte es sei ihr aufgegeben (vom Schicksal bestimmt), schweigend zu dulden. |
| **S\textsubscript{DUDU3}.** | (landsch.) auffüllen (3). |
| **S\textsubscript{DUDU4}.** | (Technik) zu verarbeitendes Gut auf ein Fördergerät geben [u. an eine Maschine o.Ä. übergeben]: Schotter a.; man hatte nicht genug Koks aufgegeben (in den [Hoch]ofen geschüttet). |
| **S\textsubscript{DUDU5}.** | (Kaufmannsspr.) angeben (1a): der Auftraggeber verpflichtet sich, richtige Maße aufzugeben. |
| **S\textsubscript{DUDU6}.** | (Ballspiele) aufschlagen (4). |
| **S\textsubscript{DUDU7}.** | a) mit einer Sache aufhören: das Rauchen a.; seinen Widerstand a.; ich habe es aufgegeben, darüber nachzudenken; gib's auf! (ugs.; bemühe dich nicht, es ist doch zwecklos); den Kampf, ein Rennen a. (Sport; abbrechen, vorzeitig beenden);  
| | b) sich von etw. trennen; auf etw. verzichten: wegen finanzieller Schwierigkeiten sein Geschäft a. (schließen); wir mussten unsere Zweitwohnung a.; seinetwegen hat sie ihren Beruf aufgegeben (nicht weiter ausgeübt); ein Amt a. (niederlegen); Ansprüche, Gewohnheiten a.; die, alle Hoffnung a.;  
| | c) als verloren od. tot ansehen, keine Hoffnung mehr auf jmdn. setzen: die Ärzte hatten den Patienten schon aufgegeben (hatten mit seinem Tod gerechnet); sie hatten ihren missratenen Sohn längst aufgegeben; du darfst dich nicht a.;  
| | d) nicht weitermachen; aufhören: trotz aller Schwierigkeiten nicht a.; er gibt nicht so leicht auf (lässt sich nicht entmutigen);  
| | e) (Sport) ein Spiel, einen Wettkampf vorzeitig abbrechen: der Europameister musste in der 7. Runde a.; der vorjährige Schachjungendmeister gab auf. |

(Duden: Deutsches Universal Wörterbuch, 1996)

---

**Table 5.2. Senses of AUFGEBEN (ger/v) in German.**
CHAPTER 5: Analysis of the Lexeme AUFGEBEN (ger/v)

CASE STUDY 2

Compared to the order of the senses in the Collins German-English Dictionary (1991), the monolingual German Dictionary Duden: Deutsches Universal Wörterbuch (1996) has a different frequency preference; it starts with the sense ‘übergeben’, whereas the Collins German-English Dictionary begins with ‘als Schularbeit auftragen’. Below is a two-way comparison (cf. Table 5.3a and Table 5.3b) on how both dictionaries treated the order of appearance for each of the senses and sub-senses of the lexeme AUFGEBEN (ger/v). Note that three dashes, e.g. ---, are an indicator for senses not covered by the dictionary.

<table>
<thead>
<tr>
<th>Collins</th>
<th>Duden</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCOL1</td>
<td>S_DUDU2a,b</td>
</tr>
<tr>
<td>SCOL2</td>
<td>S_DUDU1</td>
</tr>
<tr>
<td>SCOL3</td>
<td>S_DUDU7b</td>
</tr>
<tr>
<td>SCOL4</td>
<td>S_DUDU7c</td>
</tr>
<tr>
<td>SCOL5</td>
<td>---</td>
</tr>
<tr>
<td>SCOL6</td>
<td>S_DUDU7a,d,e</td>
</tr>
<tr>
<td>SCOL7</td>
<td>---</td>
</tr>
<tr>
<td>---</td>
<td>S_DUDU3</td>
</tr>
<tr>
<td>---</td>
<td>S_DUDU4</td>
</tr>
<tr>
<td>---</td>
<td>S_DUDU5</td>
</tr>
<tr>
<td>---</td>
<td>S_DUDU6</td>
</tr>
<tr>
<td>---</td>
<td>S_DUDU2c</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Duden</th>
<th>Collins</th>
</tr>
</thead>
<tbody>
<tr>
<td>S_DUDU1</td>
<td>SCOL2</td>
</tr>
<tr>
<td>S_DUDU2a</td>
<td>SCOL1</td>
</tr>
<tr>
<td>S_DUDU2b</td>
<td>SCOL1</td>
</tr>
<tr>
<td>S_DUDU2c</td>
<td>---</td>
</tr>
<tr>
<td>S_DUDU3</td>
<td>---</td>
</tr>
<tr>
<td>S_DUDU4</td>
<td>---</td>
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<tr>
<td>S_DUDU5</td>
<td>---</td>
</tr>
<tr>
<td>S_DUDU6</td>
<td>---</td>
</tr>
<tr>
<td>S_DUDU7a</td>
<td>SCOL6</td>
</tr>
<tr>
<td>S_DUDU7b</td>
<td>SCOL3</td>
</tr>
<tr>
<td>S_DUDU7c</td>
<td>SCOL4</td>
</tr>
<tr>
<td>S_DUDU7d</td>
<td>SCOL4</td>
</tr>
<tr>
<td>S_DUDU7e</td>
<td>SCOL6</td>
</tr>
<tr>
<td>---</td>
<td>SCOL5</td>
</tr>
</tbody>
</table>

Table 5.3a Table 5.3b
Two-way comparison of the English and German senses of lexeme AUFGEBEN (ger/n)
CHAPTER 5: Analysis of the Lexeme AUFGEBEN (ger/v)

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The fact that there is no exact overlap of the senses covered between the two dictionaries is mostly because the monolingual dictionary adopts a more refined attitude towards the treatment of the senses entered compared to the bilingual dictionary which is rather lax on this point. However, it is surprising to note that there are some gaps present in the monolingual dictionary, nevertheless minimal.

The entry of the lexeme AUFGEBEN (ger/v) has been treated more thoroughly in the monolingual German Dictionary Duden: Deutsches Universalwörterbuch than in the bilingual dictionary Collins German-English Dictionary. Therefore, we would like to continue our study with the definitions provided in the monolingual German Dictionary Duden: Deutsches Universalwörterbuch.

Our next step involves a comparison between the senses of AUFGEBEN (ger/v) in German and the corresponding senses in English and Turkish.

5.1.2.1. Sense Identification of the Lexeme AUFGEBEN (ger/v)

This part of the study covers the sense identification process of the keyword AUFGEBEN (ger/v), and will provide an overall view of the two groups of senses opposing each other. In relation to the sense identification process, a comparison of the polysemous lexeme AUFGEBEN (ger/v) in German with its corresponding senses in English and Turkish will be presented.

For the process of comparing AUFGEBEN (ger/v) with its English and Turkish senses, monolingual dictionaries in each language were used as primary source for the retrieval of the senses of each relevant entry; for German: Duden: Deutsches Universalwörterbuch
CHAPTER 5: Analysis of the Lexeme AUFGEBEN (ger/v)

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(DUDU), for Turkish: Türkçe Sözlük (TS) by Püsküllüoğlu, and for English: the Oxford Advanced Learner's Dictionary (OALD). The findings have been presented in a field diagram with entries in each of the languages German, English and Turkish. Our focus will be on the senses S_DUDU1, and S_DUDU7a,b,c,d,e of the lexeme AUFGEBEN (ger/v). Each of these senses correspond to one or more entries in the target languages English and Turkish. For S_DUDU1, for instance, there is more than one alternative in the English language (e.g. 'to give sth up to sb', 'hand sth in (to sb)', 'send sth/sb (to sb/sth)' and 'to place (an order)'), and several others in the Turkish language (e.g. 'teslim etmek', 'vermek', 'mektup/paket göndermek', 'telgraf çekmek', 'ilan vermek', 'ilan etmek', 'sipariş etmek/vermek'). In order to show which senses correspond to each other, relevant cells in the field diagram have been broken down into several parts (e.g. AUFGEBEN corresponds to 'to give sth up to sb' in English which corresponds to 'teslim etmek' and 'vermek' in Turkish) as in Field Diagram 5.1 provided on the following pages:
### Field Diagram 5.1.
Senses of AUFGEBEN (ger/v) in contrast with its senses in English and Turkish.

<table>
<thead>
<tr>
<th>German</th>
<th>English</th>
<th>Turkish</th>
</tr>
</thead>
</table>
| **OS1**       | **AUFGE**
**BEN**

S**B**EDE
zur Weiterleitung, Beförderung, Bearbeitung übergeben: Pakete
a.;
ein Telegramm am Schalter, bei/auf der Post a.; eine
Annonce a. (in die Zeitung setzen); der Gast gab beim
Ober seine Bestellung auf.

<table>
<thead>
<tr>
<th>German</th>
<th>English</th>
<th>Turkish</th>
</tr>
</thead>
</table>
| **OS2**       | **hand** sth in (to sb)
S**O****h**
**a**
to give a piece of work, a
document, etc to a person in
authority: She handed in her
resignation. o A petition
containing 50 000 signatures
was handed in at the mayor’s
office. o Luckily, somebody
found my keys and handed them
in to the police.

<table>
<thead>
<tr>
<th>German</th>
<th>English</th>
<th>Turkish</th>
</tr>
</thead>
</table>
| **OS3**       | **send** sth/sb (to sb/sth)
S**O****m**
**a**
to make sth/sb go or to be taken
somewhere without going or
taking them oneself: send a
letter/telegram/message [Vnpr]
send
goods / documents / information
by courier. o
I’ve sent the children to bed. o
His mother sent him to the
bakery to get some bread.
[Vnp] Send out the invitations
to the party. o
I’ll send somebody round to
collect it. [Vnn, Vnpr] We sent
him a letter/We sent a letter to
him. [Vnn] My parents send you
their love/best wishes. [Vn,thar]
She sent word that she wouldn’t
be able to come.

<table>
<thead>
<tr>
<th>German</th>
<th>English</th>
<th>Turkish</th>
</tr>
</thead>
</table>
| **OS6**       | **to place** (an order)
S**O**6
to issue an instruction or
request, esp to order goods or
make a bet: [Vnpr] They have
placed an order with us for
three new aircraft. o I’d like to
place an advertisement in your
newspaper. [Vn] Place your
bets now!
Field Diagram 5.1. (continued):
Senses of AUFGEBEN (ger/v) in contrast with its senses in English and Turkish.

<table>
<thead>
<tr>
<th>German</th>
<th>English</th>
<th>Turkish</th>
</tr>
</thead>
</table>
| **OS2**  
S₇DUU7ₐ  
mit einer Sache aufhören: das Rauchen a.; seinen Widerstand a.; ich habe es aufgegeben, darüber nachzudenken; gibst auf!  
(ugs.; bemühe dich nicht, es ist doch zwecklos); den Kampf ein Rennen a. (Sport; abbrechen, vorzeitig beenden);  
terke etmek  
S₇₅₄₂  
(bir şeyi) bırakmak, yapmamak.  
ör. Sigarayı terk etmek kolay mı?  
s₇₅₄₁₃  
(bir alışkanlıktan) bırakmak.  
ör. Kumari bırakmak için çaba harcamıyorum.  
terk etmek  
S₇₅₄₂  
(bir şeyi) bırakmak, yapmamak.  
ör. Sigarayı terk etmek kolay mı?  
s₇₅₄₁₃  
(bir alışkanlıktan) bırakmak.  
ör. Kumari bırakmak için çaba harcamıyorum. | to give sth up  
to stop doing or having sth: You ought to give up smoking. o She didn't give up her job when she got married.  
to give up  
to abandon an attempt to do sth: They gave up without a fight. o She doesn't give up easily. o I give up - tell me what the answer is.  
to give up  
to abandon an attempt to do sth: They gave up without a fight. o She doesn't give up easily. o I give up - tell me what the answer is.  
to give up  
to abandon an attempt to do sth: They gave up without a fight. o She doesn't give up easily. o I give up - tell me what the answer is. | to give up  
to abandon an attempt to do sth: They gave up without a fight. o She doesn't give up easily. o I give up - tell me what the answer is.  
vazgeçmek  
S₇₅₆₂  
alışkı durumuna getirdiği bağlımdığı bir şeyi bırakmak ya da artık yapmaz olmak.  
ör. Sigaradan vazgeçmek kolay olmamıştı.  
vazgeçmek  
S₇₅₆₂  
alışkı durumuna getirdiği bağlımdığı bir şeyi bırakmak ya da artık yapmaz olmak.  
ör. Sigaradan vazgeçmek kolay olmamıştı.  
vazgeçmek  
S₇₅₆₂  
alışkı durumuna getirdiği bağlımdığı bir şeyi bırakmak ya da artık yapmaz olmak.  
ör. Sigaradan vazgeçmek kolay olmamıştı.  
vazgeçmek  
S₇₅₆₂  
alışkı durumuna getirdiği bağlımdığı bir şeyi bırakmak ya da artık yapmaz olmak.  
ör. Sigaradan vazgeçmek kolay olmamıştı.  
vazgeçmek  
S₇₅₆₂  
alışkı durumuna getirdiği bağlımdığı bir şeyi bırakmak ya da artık yapmaz olmak.  
ör. Sigaradan vazgeçmek kolay olmamıştı. | to give up on sb (infml)  
to stop trying to support or help sb.  
ö. The doctors had given her up but she made a remarkable recovery.  
ö. The doctors had given her up but she made a remarkable recovery.  
ö. The doctors had given her up but she made a remarkable recovery.  
ö. The doctors had given her up but she made a remarkable recovery.  
ö. The doctors had given her up but she made a remarkable recovery.  
ö. The doctors had given her up but she made a remarkable recovery. |
Field Diagram 5.1. (continued):
Senses of AUFGEBEN (ger/v) in contrast with its senses in English and Turkish.

<table>
<thead>
<tr>
<th>German</th>
<th>English</th>
<th>Turkish</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS2 SDUDu7d</td>
<td>to give up</td>
<td>nicht weitermachen; aufhören: trotz aller Schwierigkeiten nicht a.; er gibt nicht so leicht auf (lässt sich entmutigen);</td>
</tr>
<tr>
<td>OS2 SDUDu7e</td>
<td>to give up</td>
<td>(Sport) ein Spiel, einen Wettkampf vorzeitig abbrechen: der Europameister musste in der 7. Runde a.; der vorjährige Schachjugendmeister gab auf.</td>
</tr>
</tbody>
</table>

In Field Diagram 5.1 we can see that SDUDU1 embraces in English the corresponding senses ‘to give sth. up to sb.’, ‘to hand in a letter/parcel’, ‘to send a telegram’, ‘to place (an order)’, and ‘to give an order (to sb.)’. These have been regarded as semantic markers and are marked with a + sign in Table 5.4. In German, associations such as letter, parcel and telegram involving postal services or ordering of food are often connected with the verb AUFGEBEN (ger/v), whereas in English these require different verbs; we do not place a letter/parcel but we hand in a letter/parcel, neither do we give an advertisement up in a newspaper but we place an advertisement in a newspaper. Likewise, in Turkish, we do not say mektup çekmek but we say mektup göndermek, nor do we say ilan teslim etmek but we say ilan vermek.

Such examples can be extended to SDUDU7a, SDUDU7b, SDUDU7c, SDUDU7d and SDUDU7e: SDUDU7a in English corresponds to ‘to give (sth) up’. It involves the ‘termination of an event or action’, such as smoking, running, a fight etc. In SDUDU7b the fundamental idea involves the ‘giving up of a possession, profession, habit or hope’. SDUDU7c embraces the meaning of ‘losing hope for somebody’ or ‘regarding someone as dead’. SDUDU7d implies the ‘abandonment of an attempt or the termination of an on-going process’. And finally, SDUDU7e indicates the ‘withdrawal from an action’ or the ‘abandonment of an event’, especially ‘before it is finished’.
Senses of the lexeme AUFGEBEN (ger/v) which seem to be in opposition have the codes OS for Opposite Sense followed by numbers (e.g. OS1 and OS2). For OS1 we can say that it concerns the initiation of something, therefore: OS1 = 'to initiate an event and to maintain its existence', and for OS2 we can tell that it involves the termination of something, hence: OS2 = 'to terminate an event'. From the above information we can gather that AUFGEBEN (ger/v) is a lexeme of incompatible oppositeness (Section 2.4.1.2.1. (i)); a componential analysis will demonstrate our assumption:

In Table 5.4 below, concepts to give sth to sb, to hand in sth, to send sth, to place, to give an order, to give sth up, to give up, to give sb up, and to give up on sb have been placed under the column ACTION which is divided into two sections, i.e. OS1 and OS2. The vertical and horizontal bold lines indicate the clashing point between these sections. Note that, where there is a + (plus) sign in OS1 there will predominantly be a - (minus) in OS2 and vice versa. These indicate an opposition at the intensional level. It is interesting to see that in the section for OS2, senses SDUDU7a-e have + (plus) as well as - (minus) signs as markers, although our expectation might have been only + (plus) signs throughout as is the case for SOUTUL in OS1. This is clearly not the case, as senses SDUDU7a-e have shared common features, but at the same time characteristics which distinguish them from each other. This is another reason why lexicographers have felt the need to divide SDUDU7 into sub-categories, unlike SDUDU1.

If we look carefully at the rows for SDUDU7d and SDUDU7e as in Table 5.4, we will recognise the same semantic pattern for both concepts as both have the same semantic marker marked with a + sign. This is to indicate that the concepts in SDUDU7d and SDUDU7e have shared common features. The reason for these senses having been represented under a separate label in the monolingual German dictionary Duden: Deutsches Universalwörterbuch is that the lexicographers have decided to classify the use of the concept separately, i.e. under the language for general use and the language for sports respectively.
As we have seen, there are differences in terms of associations made with the use of the lexeme AUFGEBEN (ger/v), which certainly have an effect on collocational preferences. The fact that in German numerous associations exist for AUFGEBEN (ger/v), has also an impact on the diverse collocational patterns in the other two languages English and Turkish. In these languages, depending on the context the linguistic label for the lexeme changes and is determined by the collocational pattern it takes on. This, however, will be dealt with in more detail when studying syntagmatic structures (cf. Section 5.1.1.4).
Table 5.4. Sense identification map of the lexeme AUFGEHEN (ger/v).

<table>
<thead>
<tr>
<th></th>
<th>OS1</th>
<th>OS2</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUFGEHEN (ger/v)</td>
<td>to give sth up to sb</td>
<td>to hand in sth</td>
<td>to send sth</td>
</tr>
<tr>
<td>OS1</td>
<td>$S_{DUDU1}$</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>OS2</td>
<td>$S_{DUDU7a}$</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>$S_{DUDU7b}$</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>$S_{DUDU7c}$</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>$S_{DUDU7d}$</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>$S_{DUDU7e}$</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
5.1.2.2. Paradigmatic Sense Relations of Opposition and Exclusion (Horizontal Relations) with Focus on the Lexeme AUFGEBEN (gerIV)

In the previous section we discussed and identified the different senses of the lexeme AUFGEBEN (gerIV). Now, we will move on to its analysis with regard to paradigmatic sense relations of exclusion and opposition; in other words, horizontal relations. The best way to observe how the intensions of a lexeme connect is by breaking down the lexeme into sense components (atomic concepts). Relations between units of sense components can reflect intensional opposition, i.e. contrastive relations at the micro level. Since our objective is to reveal that the lexeme AUFGEBEN (gerIV) is subject to sense opposition, we need to begin with a lexical decomposition.

A commonly adopted approach to lexical decomposition seeks to deal with equating the composition of components to that of words in sentences. The description of the meaning of words and phrases rests upon the thesis that the sense of every lexeme can be analysed in terms of a set of more general sense components (or basic/atomic concepts as we will call them in our study) (Section 2.5.3). According to Weinreich (Section 2.5.3), lexemes have an internal structure which mirrors the syntactic structure of sentences and phrases. In our study we will decompose the lexeme AUFGEBEN (gerIV) into its sense components thereby creating a sentence-like structure. Note that, however, different languages will not necessarily lexicalise the same sense components, that they will not necessarily combine them in the same way. In Table 5.5, we have a number of sense components corresponding to each of the senses which the lexeme AUFGEBEN (gerIV) embraces. As in our previous study, we describe each component in English, as this is our meta-language.
Informants were needed in order to test the validity of the lexical decomposition proposed and to investigate the semantic nature of the lexeme AUFGEBEN (ger/v). Initially, it was intended to use native speakers of English who have a good command of German, since the lexical decomposition was carried out in English. However, after consulting the first informant it became obvious that German native speakers with a knowledge of English were more suitable for the required task. Hence, one native speaker of English (Subject E) and three native speakers of German (Subject F, G, and H) were used for the study. All subjects were provided with a table outlining a list of sense components for the senses S\textsubscript{DUDU}1, and S\textsubscript{DUDU} 7a,b,c,d,e. The first list of sense components for S\textsubscript{DUDU}1 was produced based on the definition of AUFGEBEN (ger/v) as in Duden: Deutsches Universalwörterbuch.

Subject E was provided with a list of sense components which reflect the senses of S\textsubscript{DUDU}1 and S\textsubscript{DUDU} 7a,b,c,d,e for AUFGEBEN (ger/v) as can be seen in Table 5.5, and was given the task to work out the linguistic label for each of the senses. Her responses revealed that S\textsubscript{DUDU}1 has several different corresponding linguistic labels in English depending on the collocation it takes on; in German we say Pakete aufgeben; ein Telegramm am Schalter, bei/auf der Post aufgeben; eine Annonce aufgeben; der Gast gab beim Ober seine Bestellung auf. However, English requires a different verb for each noun: to post a parcel/to hand in a parcel at the post office; to send a telegram; to give an order to the waiter. The study showed that the background of Subject E as a native speaker of English had an impact on the decision-making as to what S\textsubscript{DUDU}1 may comprise in German as a linguistic label.

As a next step, three native speakers of German who speak fluent English were selected for the study. The informants were asked in isolation which concept came first to mind when shown each list of components. The list of sense components were altered and rearranged until the three informants arrived independently at the same concept.
Table 5.5. Lexical Decomposition of the lexeme AUFGEHEN (ger/v).

OS1 = 'to initiate an event and to maintain its existence'

\[ S_{DUDU}^{1} = \langle ACTION \rangle [GIVE] [LETTER/PARCEL/TELEGRAM] [UP] [TO] [PERSON/AUTHORITY] \]

-------------------

OS2 = to terminate an event'

\[ S_{DUDU}^{7a.d.e.} = \langle ACTION \rangle [STOP] [INTENDED ACTION / HABIT] \]

\[ S_{DUDU}^{7b.} = \langle ACTION \rangle [STOP] [PROFESSION / HOPE / HABIT] \]

\[ S_{DUDU}^{7c.} = \langle ACTION \rangle [STOP] [HAVING] [HOPE] [FOR] [A(N)] [(FATALY) (ILL)] [PERSON] \]
The intensions of the lexeme AUFGEBEN (ger/ν), for S₁DU₁, are the atomic concepts ([ACTION]) [GIVE] [LETTER/PARCEL/TELEGRAM] [UP] [TO] [PERSON/AUTHORITY], which are held to belong to a set of universal atomic concepts which may or may not be lexicalised in particular languages. The sense component [LETTER/PARCEL/TELEGRAM] was a vital piece of information which helped all three informants understand that the concept involves the sense AUFGEBEN (ger/ν) rather than anything else. Subject E who was presented with the features ([ACTION]) [GIVE] [SOMEONE] [SOMETHING] [SO] [THEY] [DO] [SOMETHING] [WITH] [OBJECT] suggested senses such as ‘to make someone able to receive’, ‘to facilitate’, ‘to command’. Note that the defining vocabulary this informant was presented with was simpler than the one suggested to the three native speakers of German. [SOMETHING] is a primitive which has been proven to be universal by Wierzbicka (Section 2.5.2). It obviously is more general than [LETTER/PARCEL/TELEGRAM] since it is a primitive, and therefore can imply any object. I believe that a reductive analysis of word meaning, i.e. reducing complex meanings to combinations of simpler ones, has actually the disadvantage of not allowing the informant to recognise existing collocation pattern(s). Simply, because in a puzzle like lexical decomposition our mental lexicon relies on clues, i.e. features which are nodes at the technical level of a hierarchy, in order to arrive at a valid conclusion.

For instance, if we imagine a hierarchical structure with the beginner [SOMETHING] dominating the nodes [LETTER], [PARCEL] and [TELEGRAM] at a technical level, we can easily recognise that this level in a hierarchy is richer since elements have more distinct properties unique to themselves, which allow us to distinguish them from each other (Section 2.4.1.1). As a result, it is easier to associate such features with the most suitable collocation, another reason why informants F, G and H were able to recognise the concept AUFGEBEN (ger/ν) with more ease.
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Features such as ([ACTION]) [STOP] [HABIT / INTENDED ACTION] combine to yield as their product (or aspect) the sense of the verb AUFGEBEN (ger/v) as in SDUDU7a, SDUDU7d, and SDUDU7e. When Subject F was being consulted it was interesting to observe how she arrived at the concept AUFGEBEN (ger/v). She considered verbs such as ABGEWÖHNEN and AUFHÖREN as potentially suitable. Her decision that the most appropriate verb should be AUFGEBEN relies on the fact that it can be used for both HABIT and INTENDED ACTION. Her reasoning was that ABGEWÖHNEN goes with HABIT, and AUFHÖREN goes with INTENDED ACTION, however, AUFGEBEN covers both. Subject F applied a similar search method for SDU7b and SUDU7c, and eventually decided on AUFGEBEN (ger/v). Similar search patterns were observed in Subjects G and H.

This study has demonstrated that the matrices employed in the lists of sense components, i.e. the way in which the sense components were combined, and the specification of certain features, supplied the subjects with the most sufficient information. Enough has been said on the sense identification process of the lexeme AUFGEBEN (ger/v). We will now move on to the discussion as to which elements in the lexical decomposition of the lexeme play an important role in determining sense opposition. In the following, we will also identify what type of sense opposition the lexeme can be ascribed to.

54 Cf. Lyons, 1977:261-2, Collocationally restricted lexemes or Collocational restrictions and Lexicalisation of syntagmatic modifying components, i.e. Encapsulation.
5.1.2.3. The Lexeme AUFGEBEN (ger/v) and Sense Opposition

As we already know, a lexical unit represents a case for Incompatibility, if it has two senses within one aspect which contradict each other (Section 2.4.1.2.1.(i).). To be more precise, the lexeme AUFGEBEN under the aspect A = ACTION has the elements SDUDU1, SDUDU7a, SDUDU7b, SDUDU7c, SDUDU7d and SDUDU7e. SDUDU1 is incompatible with SDUDU7a, SDUDU7b, SDUDU7c, SDUDU7d and/or SDUDU7e since from the existence of SDUDU1 the non-existence of SDUDU7a, SDUDU7b, SDUDU7c, SDUDU7d and/or SDUDU7e can be concluded and vice versa (Section 2.4.1.2.(i)). Because, with SDUDU1 we initiate an event or a series of events and to maintain its/their existence, whereas with SDUDU7a-e we terminate an event; hence, OS1 = 'to initiate an event or a series of events and to maintain its/their existence' and OS2 = 'to terminate an event'.

Diagram 5.1. The phenomenon of sense opposition in AUFGEBEN (ger/v).
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When observed synchronically, as in Diagram 5.1, AUFGEBEN (gerlv) is the concept with the atomic concepts $S_{DUDU1}, S_{DUDU7a}, S_{DUDU7b}, S_{DUDU7c}, S_{DUDU7d}$ and $S_{DUDU7e}$ grouped under OS1 and OS2 accordingly. To indicate that there is sense opposition at the micro-level, we have placed an arrow pointing out to two opposite directions towards OS1 and OS2.

So far, we have discussed the keyword AUFGEBEN (gerlv) with regard to horizontal relations. The next section will deal with syntagmatic sense relations.

5.1.2.4. Syntagmatic Sense Relations with Focus on the Lexeme AUFGEBEN (gerlv)

In the early 20th century, linguists such as Trier and Porzig came to accept that it is inevitable that syntagmatic structures are analysed without incorporating the impact of co-existing paradigmatic relations on the investigation of semantic fields (Section 2.4.2 (iv)). In other words, the structure of the language system depends on the complementary principles of selection from the paradigmatic and syntagmatic structures and the combination of such (cf. Lyons, 1977:241). Hence, we identify paradigmatically related units "by virtue of their potentiality of occurrence in certain syntagms; and the selection of one element rather than another produces a different resultant syntagm" (ibid). According to Lyons, to describe a language-system is to specify both the membership of the paradigmatic sets and the possibilities of combination of one set with another in well-formed syntagms (ibid). If we imagine the language being a two-dimensional structure, we can say that each unit has its coordinations in one or more points across the axes (depending on whether a unit is of monosemous or of polysemous character). Units of meanings do not exist in isolation, however, but are syntagmatically related. At the minimal level, the combination of units can be bipartite, and at the maximum level, they can be even an entire text.
In this section, we are going to discuss typical collocational patterns of the keyword AUFGEBEN (ger/v), paying particular attention to essential meaning relations and collocational restrictions (Section 2.4.2 (iv)). In order to provide examples for our study, some syntagmatic structures were extracted from the Internet and collected from relevant dictionaries. A collocation chart will show us some of the common collocation patterns for the lexeme AUFGEBEN (ger/v). Finally, we will provide a summary for each of the analysis phases.

As we already know, senses of lexemes change depending on the lexemes present in their immediate surroundings. In fact, many concepts in isolation have vague contours (cf. Section 2.3.1.2 refer to the separate sections for Vagueness, Laxness, Ill-definedness and Generality) until their bordering lines become sharper and clearer when observed in conjunction with another concept. Such relations of concept holding between pairs of syntagmatically connected lexemes is referred to as collocations (Section 2.4.2).

Our keyword AUFGEBEN (ger/v) is undoubtedly of polysemous character; previously, we demonstrated that it is a polysemous word of incompatible oppositeness. When observed in isolation, AUFGEBEN (ger/v) basically means 'to give up, to surrender', however, it changes its meaning dramatically, for instance, when combined with Bestellung; hence Bestellung aufgeben = to order. Previously, we mentioned that constraints on co-occurrence between lexical items usually have directional properties. There are two aspects of directionality in syntagmatic constraints; one of them concerns which is the selector (lexical

---

item which does the selecting in a given co-occurrence pattern), and the **selectee** (lexical item which gets selected in a given co-occurrence pattern) (**Section 2.4.2. (iv)**). The direction in which selection operates is correlated with grammar. The general idea is that adjectives select their head nouns and verbs select their complements; nouns almost always are selectees (**Section 2.4.2. (iv)**). In our example, the lexeme **AUFgeben (ger/v)** has been the selector when the preceding element in the collocational pattern was a noun, in other words: nouns have been the selectee and the verb **AUFgeben (ger/v)** has been the selector. Hence:

<table>
<thead>
<tr>
<th>Selectee</th>
<th>Selector</th>
<th>Collocation Chart</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bestellung</strong></td>
<td>aufgeben</td>
<td>Diagram 5.2</td>
</tr>
<tr>
<td>selectee</td>
<td>selector</td>
<td></td>
</tr>
</tbody>
</table>

So, for instance, in the above collocation the verb **aufgeben** is disambiguated by the co-occurrence with the noun **Bestellung**. The possibilities for similar philonymous selector-selectee combinations with the verb **aufgeben** can be extracted from the Collocation Chart as in Diagram 5.2 below.

The Collocation Chart (**Diagram 5.2**) reflects the combination of certain lexemes and the interrelation of them with the keyword **AUFgeben (ger/v)** at the focal point. There are two axes; the vertical axis shows the preceding lexemes (up to two) which accompany the keyword vs. the lexemes in post-position (also up to two). The horizontal axis indicates a clash between the senses of the keyword. So, for instance, "...Telegramm **AUFgeben wollen wegen...**, or "...Annonce nicht **AUFgeben können wegen...**" vs. "...Rauchen **AUFgeben sollen...** etc. are some of the possible combinations of infinitives as reflected in the collocation chart below. These combinations have been collected with the Internet tools Google and WebCorp (**Section 3.2.2.2**). The collocations are colour coded as follows: blue (pink) (red) **BLACK** (green) (gray), with blue usually indicating a noun (apart from the reflexive pronoun "sich"), red indicating an adjective, pink indicating an adverb, black indicating a VERB, green
indicating a modal verb and gray indicating a preposition, hence the collocational pattern for AUFGBEBN (ger/v) looks as follows:

\[
\text{noun adverb adjective VERB modal verb preposition}
\]

So far, we have discussed the different aspects of paradigmatic sense relations of exclusion and opposition (horizontal relations) and syntagmatic sense relations. The reasons for investigating such aspects include identifying polysemy in natural language, creating effective disambiguation processes, and the compilation of dictionaries specialised in sense opposition (as already discussed in 2.4.1.2.1).

The following Table 5.6 includes an overview of the findings related to the keyword. English acts here as the meta-language in the representation of the entry. The contents of the format suggested by Lutzeier (2002a, as discussed in 2.4.1.2.1) consists of information with regard to the lexeme, language, part of speech or wordclass, type of oppositeness, domain classification, aspect, specification of the opposite senses (OS1 and OS2), outline of the individual senses, instantiation\(^{56}\) (e.g. Anzeige aufgeben, Inserat aufgeben, etc.), and finally some authentic examples relevant to each instantiation.

\[^{56}\text{Note that instantiations in Table 5.6, on which also the Collection Chart in Diagram 5.2 is based, have been collected with the linguistic tool WebCorp (Section 3.2.2.2). Please refer to Appendix 4 for a raw extract of the data collected.}\]
<table>
<thead>
<tr>
<th>Lexeme</th>
<th>AUFGEHOBEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>German</td>
</tr>
<tr>
<td>Wordclass</td>
<td>Verb</td>
</tr>
<tr>
<td>Type of Gegensinn</td>
<td>Lexeme of incompatible oppositeness</td>
</tr>
<tr>
<td>Domain Classification</td>
<td>Intradomain</td>
</tr>
<tr>
<td>Aspect (A)</td>
<td>A = 'Action'</td>
</tr>
<tr>
<td>Opposite Senses (OS1/OS2)</td>
<td>OS1 = 'to initiate an event and to maintain its existence'</td>
</tr>
<tr>
<td></td>
<td>OS2 = 'to terminate an event'</td>
</tr>
<tr>
<td>Senses (SDUDU1, SDUDU7a,b,c,d,e)</td>
<td>OS1 SDUDU1 = 'zur Weiterleitung Beförderung, Bearbeitung übergeben'</td>
</tr>
<tr>
<td></td>
<td>OS2 SDUDU7a = 'mit einer Sache aufhören'</td>
</tr>
<tr>
<td></td>
<td>OS2 SDUDU7b = 'sich von etw. trennen, auf etw. verzichten'</td>
</tr>
<tr>
<td></td>
<td>OS2 SDUDU7c = 'als verloren od. tot ansehen, keine Hoffnung mehr auf jmdn. setzen'</td>
</tr>
<tr>
<td></td>
<td>OS2 SDUDU7d = 'nicht weitermachen; aufhören'</td>
</tr>
<tr>
<td></td>
<td>OS2 SDUDU7e = (Sport) 'ein Spiel, einen Wettkampf vorzeitig abbrechen'</td>
</tr>
</tbody>
</table>

### Examples

**German**

#### OS1

*Anzeige aufgeben*

- "Sie wollen eine Anzeige aufgeben? - Dann sind Sie hier genau richtig!"
- "Hier können Sie Ihre Kleinanzeige online aufgeben."
  [http://www.revier-aktiv.de/aufeinÃ¼ssel.asp](http://www.revier-aktiv.de/aufeinÃ¼ssel.asp)

#### OS1

*Inserat aufgeben*

- "Bitte wählen Sie den Bereich, für den Sie ein Inserat aufgeben wollen: ..."
  [http://www.gotoeast.de/inserat.html](http://www.gotoeast.de/inserat.html)
### Table 5.6. Findings of the entry AUFGEHEN (ger/v).

<table>
<thead>
<tr>
<th>OS1</th>
<th>Angebot aufgeben</th>
</tr>
</thead>
<tbody>
<tr>
<td>·</td>
<td>&quot;Hier können Sie zur Veröffentlichung in der Journalismus-Börse ein Angebot aufgeben oder auch eine Suchanzeige veröffentlichen.&quot;</td>
</tr>
<tr>
<td></td>
<td>[<a href="http://www.journalismustipps.de/j-bieten.shtml">http://www.journalismustipps.de/j-bieten.shtml</a>]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OS1</th>
<th>Bestellung aufgeben</th>
</tr>
</thead>
<tbody>
<tr>
<td>·</td>
<td>&quot;Füllen Sie erst den Warenkorb, bevor Sie eine Bestellung aufgeben.&quot;</td>
</tr>
<tr>
<td></td>
<td>[<a href="http://www.nagel-hammers.de/scripts/shop/kunden.cfm">http://www.nagel-hammers.de/scripts/shop/kunden.cfm</a>]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OS1</th>
<th>Stellengesuch aufgeben</th>
</tr>
</thead>
<tbody>
<tr>
<td>·</td>
<td>&quot;Bei taljobs können Sie Ihr Stellengesuch kostenlos aufgeben.&quot;</td>
</tr>
<tr>
<td></td>
<td>[<a href="http://www.taljobs.de/taljobs/gesucheaufgeben.htm">http://www.taljobs.de/taljobs/gesucheaufgeben.htm</a>]</td>
</tr>
<tr>
<td></td>
<td>&quot;Sie müssen eingeloggt sein, um Stellengesuche aufgeben zu können.&quot;</td>
</tr>
<tr>
<td>Frankfurt Online:</td>
<td>[<a href="http://www">http://www</a> frankfurt-online.de/index.php?jobs=edit]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OS1</th>
<th>Annonce aufgeben</th>
</tr>
</thead>
<tbody>
<tr>
<td>·</td>
<td>&quot;Hier können Sie eine private Annonce aufgeben. Einfach ausfüllen und abschicken!&quot;</td>
</tr>
<tr>
<td></td>
<td>[<a href="http://www.schmidt-online.de/elmquist/anno.htm">http://www.schmidt-online.de/elmquist/anno.htm</a>]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OS2</th>
<th>Rauchen aufgeben</th>
</tr>
</thead>
<tbody>
<tr>
<td>·</td>
<td>&quot;Du weißt, daß du dringend das Rauchen aufgeben solltest, wenn wenn du auf Feten immer in den Kamin gesetzt wirst, einmal, um die Bude schön warm zu halten, und zweitens, damit der Rauch gleich direkt nach oben abziehen kann.&quot;</td>
</tr>
<tr>
<td></td>
<td>[<a href="http://schueler.freepage.de/cgi-bin/feets/freepage_ext/41030x030A/rewrite/maverrick/wrauch.htm">http://schueler.freepage.de/cgi-bin/feets/freepage_ext/41030x030A/rewrite/maverrick/wrauch.htm</a>]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OS2</th>
<th>Unabhängigkeit aufgeben</th>
</tr>
</thead>
<tbody>
<tr>
<td>·</td>
<td>&quot;Jiang Zemin hat verlangt, dass der Dalai Lama nicht nur die tibetische Unabhängigkeit aufgeben soll, sondern dass er sich auch von dem bloßen Gedanken verabschieden soll, dass ein freies Tibet in der Vergangenheit je existiert habe.&quot;</td>
</tr>
<tr>
<td></td>
<td>[<a href="http://www.rangzen.net/deu/charta/teil_1.html">http://www.rangzen.net/deu/charta/teil_1.html</a>]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OS2</th>
<th>Kontakt aufgeben</th>
</tr>
</thead>
<tbody>
<tr>
<td>·</td>
<td>&quot;Scheidungskinder - Väter möchten Kontakt nicht aufgeben.&quot;</td>
</tr>
<tr>
<td></td>
<td>[<a href="http://www.vaeter-aktuell.de/Gesellschaft0001">http://www.vaeter-aktuell.de/Gesellschaft0001</a> 18. htm]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OS1</th>
<th>Bank-Mandat aufgeben</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank-Mandat = Bankauftrag</td>
<td></td>
</tr>
<tr>
<td><strong>Bankauftrag, der: Auftrag an eine Bank (1a), ein Geldgeschäft durchzuführen;</strong></td>
<td></td>
</tr>
</tbody>
</table>
Table 5.6. Findings of the entry AUFGEHEN (ger/v).

OS2

**Mandat aufgeben**

- "Letzte Meldungen vor Redaktionsschluß dieser MAGAZIN -Ausgabe besagen, daß mehrere Ratsmitglieder inzwischen ihr Mandat aufgeben mußten."
  [http://www.andreac.de/aktuell/aktuell.html]

  [http://www.schweizer-demokratok.ch/Kantone/BL/landrat_archiv.htm]

OS2

**Amt aufgeben**

- "Katrin Molkentin will ihr Amt aufgeben wegen "persönlicher Motive"."

Der Tagesspiegel Online, 14/01/2001:

OS2

**Den Geist aufgeben** (metaph.)

- "Lebensdauer Elsteinstrahler – Abgeschickt von Urs am 08 Mai, 2000 um 08:13:34 - Hallo
Ich habe vor genau einem Jahr einen 250W Dunkelstrahler (ohne sichtbares Licht) gekauft und betreibe diesen nun über einen Thermostaten.
2 Fragen:
1. Ist es normal, dass diese schon nach einem Jahr den Geist aufgeben ??
2. Ist es normal, dass diese, wenn sie den Geist aufgeben, ihre Metallfassung "anbruzeln" ? – Die Messingfassung/Gewinde hat 2 ca. 1cm2 grosse Löcher drin. Besten Dank für Eure Antworten
Urs"
  [http://www.terrarientechnikforum.de/archiv/messages/56.html]

- "Meine Tankuhr macht mir ein wenig Sorgen. lm Stand zeigt sie recht brav den Füllstand des Tanks an. Aber während der Fahrt zappelt der Zeiger meiner Tankuhr wie verrückt zwischen Leer und voll (ausser es wurde gerade vollgetankt, dann bleibt er einigermaßen ruhig auf voll) Ich mache mir ein wenig Sorgen wegen den wilden Bewegungen und fürchte, daß die Tankuhr irgendwann deshalb den Geist aufgeben könnte. ..."

- "Da ich noch einige 22cm Leerspulen für mein TG1000 hatte und meine original Braun Bänder so langsam den Geist aufgeben, habe ich mich für Ampex 456 Grandmaster entschieden. ..."
  [http://www.radiodesign.de/forum/messages1_2001/96.html]
Table 5.6. Findings of the entry AUFGEHEN (ger/v).

OS2  

etwas aufgeben

- “Trotzdem denke ich, dass Japan den Walfang aufgeben muss und wundere mich, wer möchte, dass Japan mit dem Walfang fortfährt.”
  [http://users.yoobay.com/stopit/fenv_1.htm]


- “Barak wird existentielle Sicherheitsinteressen Israels nicht aufgeben.”
  Wortschatzlexikon:
  [http://wortschatz.informatik.uni-leipzig.de/index_js.html]

OS2  

(etwas) aufgeben

- “Ein Wissenschaftler darf nicht einfach aufgeben.” (Quelle: Welt 1999)
  Wortschatzlexikon:
  [http://wortschatz.informatik.uni-leipzig.de/index_js.html]

OS2  

die Rolle aufgeben

- “Was ist, wenn die Israeli ihre Rolle als böse Besatzer aufgeben?” (Quelle: Welt 1999)
  Wortschatz Lexikon:
  [http://wortschatz.informatik.uni-leipzig.de/index_js.html]

OS2  

die Suche aufgeben

- “Frustriert waren die Retter aber vor allem, weil sie die Suche nach einem zwölfjährigen Mädchen, unter Trümmern verschüttet, am letzten Tag ohne Erfolg hatten aufgeben müssen.”
  Wortschatzlexikon:
  [http://wortschatz.informatik.uni-leipzig.de/index_js.html]

OS2  

den Beruf aufgeben

- “Sie muss es wissen: Als sie ihren Beruf nach der Geburt ihrer beiden Kinder aufgeben musste, gründete sie kurzerhand die eigene Agentur "EUR-Au-pair".” (Quelle: Welt 1999)
  Wortschatzlexikon:
  [http://wortschatz.informatik.uni-leipzig.de/index_js.html]
### Table 5.6. Findings of the entry AUFGEBEN (ger/v).

<table>
<thead>
<tr>
<th>OS2</th>
<th>Findings of the entry AUFGEBEN (ger/v)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(eine geographische/geopolitische Lage) aufgeben</td>
</tr>
<tr>
<td></td>
<td>Wortschatzlexikon: <a href="http://wortschatz.informatik.uni-leipzig.de/index.js.html">http://wortschatz.informatik.uni-leipzig.de/index.js.html</a></td>
</tr>
<tr>
<td>OS2</td>
<td>den Traum aufgeben</td>
</tr>
<tr>
<td></td>
<td>“Der Entdecker des Kometen Shoemaker-Levy-9 wollte immer zum Mond fliegen, musste seinen Traum aber wegen Untauglichkeit aufgeben.” (Quelle: Welt 1999)</td>
</tr>
<tr>
<td></td>
<td>Wortschatzlexikon: <a href="http://wortschatz.informatik.uni-leipzig.de/index.js.html">http://wortschatz.informatik.uni-leipzig.de/index.js.html</a></td>
</tr>
<tr>
<td>OS2</td>
<td>die eigenen Werte aufgeben</td>
</tr>
<tr>
<td></td>
<td>“Die eigenen Werte nicht aufgeben, den Gesprächspartner nicht in den Ruf bringen, westlicher Dominanz nachzugeben - so lautet die Strategie.”</td>
</tr>
<tr>
<td></td>
<td>Wortschatzlexikon: <a href="http://wortschatz.informatik.uni-leipzig.de/index.js.html">http://wortschatz.informatik.uni-leipzig.de/index.js.html</a></td>
</tr>
</tbody>
</table>

### 5.2. CONCLUSION

In CS2, we analysed and discussed data and results with focus on the lexeme AUFGEBEN (ger/v). Paradigmatic sense relations of exclusion and opposition (horizontal relations) were studied with particular attention to the phenomenon of sense opposition. In this part of the study, we have seen how theories on horizontal relations were applied in identifying Gegensinn. Also, Weinreich’s ‘mode of configuration’ as a system of lexical decomposition proved itself as suitable; studies with four informants (Subjects E, F, G and H) confirm this.

We also studied syntagmatic sense relations with the lexeme AUFGEBEN (ger/v) at the focal point. Examples in this part of the study show that context and/or collocational restrictions (especially directionality in co-occurrence patterns) are vital in the determination process of the meaning of a polysemous lexeme.
CS2 ended with some comments on the possible format contents of the lexeme as a dictionary entry. Our next study involves the exploration of a lexeme in Turkish with a similar approach as in this case study.
CHAPTER 6

CASE STUDY 3

ANALYSIS of the LEXEME ÇALMAK (tur/v)

6.1. ANALYSIS and DISCUSSION of RESULTS

In this chapter, we will be analysing and discussing data and results based on the linguistic theories with regard to paradigmatic sense relations of opposition and exclusion (horizontal relations), and syntagmatic sense relations. The study involves the structural description of the polysemous lexeme ÇALMAK, a verb from Turkish.
The first stage of the analysis of the lexeme ÇALMAK (tur/v) gives insight into the problem of polysemy with specific focus on the phenomenon of Gegensinn, i.e. sense opposition. When observed synchronically, we will discover that the lexeme is a polysemous lexical unit whose senses represent oppositeness towards each other; a componential analysis will reveal that opposition occurs in the underlying senses 'adding' and 'removing' of the concept. Hence, the lexeme sets out a perfect example for sense opposition.

The second stage of the analysis concentrates on the syntagmatic structures of the lexeme. Here, we will not only be dealing with context, collocations and associations, but also with grammatical constructions, and will eventually identify possible solutions for a disambiguation process.

Before we set out to discuss data and results, we would like to outline each analysis phase for Case Study 3 (CS3).

6.1.1. ANALYSIS PHASES of CASE STUDY 3 (CS3)

The following provides an outline of each step taken in the analysis processes of Case Study 3 (CS3). Each stage contains a brief description on the target set, the method applied and the results achieved. It also provides short remarks in order to enlighten the reader about hidden aspects on the issue.

CS3 - Analysis Phase 1

Target: Finding a polysemous keyword in Turkish which sets out an example for the phenomenon of sense opposition, i.e. Gegensinn.


Results: The lexeme ÇALMAK (tur/v), a polysemous verb in Turkish, was identified as a
CHAPTER 6: Analysis of the Lexeme ÇALMAK (tur/v)

potentially sense opposing lexical unit.

Notes: ---

CS3 - Analysis Phase 2.1

Target: Providing the English equivalent for each of the sense of ÇALMAK (tur/v).

Method: Looking up English equivalents of the lexeme ÇALMAK (tur/v) from a bilingual dictionary.

Results: An outline of the corresponding senses of the entry in English in Table 6.1 and Table 6.2 with some examples.

Notes: Each sense has been labelled with the code S, followed by an abbreviation indicating source retrieved and a number (e.g. SRed1).

Senses where there is a potential for sense opposition are typed in bold font.

CS3 - Analysis Phase 2.2

Target: Outlining each sense of the lexeme ÇALMAK (tur/v) in Turkish with examples.

Method: Extracting relevant entry from the monolingual Turkish dictionary consulted.

Results: Table 6.2 outlines each sense of the entry ÇALMAK (tur/v).

Relevant examples for each sense of the lexeme ÇALMAK (tur/v).

Notes: Each sense has been labelled with the code S, followed by an abbreviation indicating source retrieved and a number (e.g. TS1).

Senses where there is a potential for sense opposition are typed in bold font.
CHAPTER 6: Analysis of the Lexeme ÇALMAK (tur/v)

CASE STUDY 3

CS3 - Analysis Phase 3

Target: Creating a sense identification map in order to identify each sense component of the lexeme, so as to validate the hypothesis of it representing a case for the phenomenon of sense opposition.

Method: Comparing senses of the lexeme ÇALMAK (tur/v) as presented in the monolingual Turkish dictionary and bilingual Turkish-English dictionary.

Results: A table (cf. Table 6.4) with an overview to the semantic markers of the lexeme ÇALMAK (tur/v).

Notes: Senses which are subject to study have new codification system: the Greek alphabet has been used to label senses which deserve mention when demonstrating sense opposition (cf. Table 6.3).

CS3 - Analysis Phase 4

Target: A componential analysis of the lexeme ÇALMAK (tur/v).

Method: Decomposing each sense of the lexeme into its semantic components. Validating the suggested componential analysis by consulting three informants (Subjects J, K, L).

Results: Lexical decomposition of the lexeme ÇALMAK (tur/v) (cf. Table 6.5). Identification of the opposite senses (cf. Table 6.5).

Notes: Three native speakers of English (Subjects J, K, L) were used to confirm the validity of the componential analysis carried out in English in order to investigate whether there are any conceptual gaps between English and Turkish, and to bring some comments on the issue of atomic concepts.
CHAPTER 6: Analysis of the Lexeme ÇALMAK (tur/v)

CS3 - Analysis Phase 5

Target: Analysis of some syntagmatic structures with focus on the lexeme ÇALMAK (tur/v) as a keyword.

Method: Collecting electronic data from the Internet by using the search engine Google. Manual scanning of the data collected. Considerations on lexical/grammatical ambiguity, directionality of syntagmatic constraints, the role of context, extra-linguistic factors, and collocational affinity. Validating achieved results by consulting a Turkish native speaker (Subject M).

Results: Investigations into some syntagmatic structures with ÇALMAK (tu/v) as the keyword have shown that case endings are a key factor in Turkish in determining the sense a keyword in context embraces. Some analysis on how the mental lexicon may be working when determining the sense of a polysemous lexeme in context.

Notes: Suggestions have been made on the possible disambiguation processes.

This section outlined each analysis phase of CS3. Next we will discuss the nature of the lexeme ÇALMAK (tur/v).

6.1.2. The LEXEME ÇALMAK (tur/v)

In this section, we will give brief information on how the selection process of the keyword ÇALMAK (tur/v) took place, and shortly discuss its characteristics.

The starting point for selecting a keyword was to focus on polysemous lexical units. The manual scanning of monolingual dictionaries in the Turkish language demonstrated that some entries were potential candidates as they appeared to have two senses in opposition at the minimum. The verb ÇALMAK in Turkish (tur/v) became subject to semantic analysis.
As an initial task, it was necessary to identify each corresponding sense in English of the keyword ÇALMAK (tur/v). Please note that the left column contains a numbering system indicating the source of origin preceding each sense with the abbreviation $S_{\text{Red}}$, which corresponds to Sense$_{\text{Redhouse}}$. Below is an extract taken from the Redhouse Turkish-English dictionary:

<table>
<thead>
<tr>
<th>$S_{\text{Red}}$</th>
<th>Sense in English</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>to hit, strike</td>
</tr>
<tr>
<td>2.</td>
<td>to add, mix in</td>
</tr>
<tr>
<td>3.</td>
<td>to make (yoghurt)</td>
</tr>
<tr>
<td>4.</td>
<td>to spread (honey, butter)</td>
</tr>
<tr>
<td>5.</td>
<td>to steal</td>
</tr>
<tr>
<td>6.</td>
<td>to spoil, taint</td>
</tr>
<tr>
<td>7.</td>
<td>to play (a musical instrument)</td>
</tr>
<tr>
<td>8.</td>
<td>to cut on the bias</td>
</tr>
<tr>
<td>9.</td>
<td>to chase, engrave (a design on a metal surface)</td>
</tr>
<tr>
<td>10.</td>
<td>to sweep hard</td>
</tr>
<tr>
<td>11.</td>
<td>to taste of, have a flavour of, tend to resemble</td>
</tr>
<tr>
<td>12.</td>
<td>to strike, ring (clock, bell), play (radio, record)</td>
</tr>
<tr>
<td>13.</td>
<td>to strike (the hour)</td>
</tr>
<tr>
<td>14.</td>
<td>to knock (at a door)</td>
</tr>
</tbody>
</table>

(Redhouse, 1992:731)

Table 6.1. Senses of ÇALMAK (tur/v) in English.

We now have an idea of what the different senses of the keyword ÇALMAK (tur/v) correspond to in English. Senses which appear to be in opposition are represented in bold font. However, in order to organise the two groups of senses opposing each other (OS1 and OS2), we will need a sense identification map (Table 6.4). On this map we can observe in detail how and why the opposition occurs, and hence easily identify what type of sense opposition we are dealing with.
6.1.2.1. Sense Identification of the Lexeme ÇALMAK (tur/v)

Before we move on to discuss the sense identification map where we have an overall view of the two groups of senses opposing each other, we should first take a look at Table 6.2 which outlines the different senses of the lexeme ÇALMAK (tur/v) in Turkish compared with the senses in English.

Senses SRed2, SRed3, SRed4, SRed5, SRed8 and STS1, STS8, STS9, STS11, STS13 are all represented in bold font; these are the senses we would like to give focus as they appear to be opposing each other. Senses SRed2, SRed3, SRed4 and STS8, STS9 constitute the adding of an element; they should correspond to the first group of the opposite sense OS1 = ‘to add an element (in)to a substance/on to an object’. Senses SRed5, SRed8 and STS1, STS11, STS13 embrace fundamentally the meaning of removal, and these will take place under the second group of the opposite sense OS2 = ‘to remove an element from an object / person / authority’.

If we were to present the distribution of the senses according to each aspect it would look as follows:

57 Red = Redhouse İngilizce-Türkçe/Türkçe-İngilizce Sözlük
[Redhouse English-Turkish/Turkish-English Dictionary]
TS = Türkçe Sözlük [monolingual Turkish Dictionary] by Püsküllüoğlu
58 Senses \{SRed1/STS3\}, \{SRed4/STS9\}, \{SRed7/STS5\}, \{SRed9\}, \{SRed10\}, \{SRed12/STS7\}, \{SRed13\}, \{SRed14/STS2\}, (cf. Table 6.2 and Table 6.3.), comprise a third group of senses which denote the aspect A=‘hit an object with another object’. As our main focus will be put on Gegensinn, i.e. sense opposition, this group of senses will not be included in our study.
<table>
<thead>
<tr>
<th>English</th>
<th>Turkish</th>
<th>CASE STUDY 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SRed5.</strong> to steal</td>
<td>Sö başkasının malmını gizlice almak.</td>
<td>STS1.</td>
</tr>
<tr>
<td><strong>SRed14.</strong> to knock <strong>(at a door)</strong></td>
<td>(kapi, zil için) tiklatarak ya da tokmağıyla vurarak ya da düğmesine basarak ses çıkarmasını sağlamak, Ör. Zili çaldım, kapı açılmış.</td>
<td>STS2.</td>
</tr>
<tr>
<td><strong>SRed1.</strong> to hit, strike</td>
<td>çarpmak, atmak, kaldırıp yere vurmak. Ör. Elindeki çantayı yere çaldı.</td>
<td>STS3.</td>
</tr>
<tr>
<td><strong>SRed12.</strong> to strike, ring <strong>(clock, bell)</strong>, play <strong>(radio, record)</strong></td>
<td>(nsz) (zil, çan, boru vb.) ses çıkarmak, ses vermek. Ör. İçerde bir radyo çalıyordu.</td>
<td>STS4.</td>
</tr>
<tr>
<td><strong>SRed7.</strong> to play <strong>(a musical instrument)</strong></td>
<td>(-i) bir müzik araçını, müzik kurallarına uygun, uyumlu sesler çıkartacak birini kullanmak. Ör. O, gitar çalar.</td>
<td>STS5.</td>
</tr>
<tr>
<td><strong>SRed12.</strong> to strike, ring <strong>(clock, bell)</strong>, play <strong>(radio, record)</strong></td>
<td>müzik dinlemeyi sağlayan bir aygıt çalıştırın. Ör. Biraz Pıkap çalın istiyor mus.</td>
<td>STS7.</td>
</tr>
<tr>
<td><strong>SRed3.</strong> to make <strong>(yoghurt)</strong></td>
<td>Sβ süte maya katıp karıştırmak. Ör. Bir tencere yoğurt çaldı.</td>
<td>STS8.</td>
</tr>
<tr>
<td><strong>SRed4.</strong> to spread <strong>(honey, butter)</strong></td>
<td>Sγ üzerine birşey sürmek. Ör. Yaraya merhem çaldılar.</td>
<td>STS9.</td>
</tr>
<tr>
<td><strong>SRed9.</strong> to spoil, taint</td>
<td>(-i) zarar vermek, dokunmak, bozmak. Ör. Sebzeyi kırqa çalışmış.</td>
<td>STS10.</td>
</tr>
<tr>
<td><strong>SRed8.</strong> to cut on the bias</td>
<td>Se dikişte, kumaşın biraz fazla gelen yerini kesmek. Ör. Eninden biraz çalın başka bir kumaş.</td>
<td>STS11.</td>
</tr>
<tr>
<td><strong>SRed11.</strong> to taste of, have a flavour of, tend to resemble</td>
<td>(-e) herhangi bir yöntende yaklaştırmak, andırmak, benzemek. Ör. Rengi sarsya çalışırdı.</td>
<td>STS12.</td>
</tr>
<tr>
<td><strong>SRed2.</strong> to add, mix in</td>
<td>Sα mec. (zaman için) birinin zamanını almak, boşa harcatmak. Ör. Bir kaç dakikazı çalışacağını.</td>
<td>STS13.</td>
</tr>
<tr>
<td><strong>SRed9.</strong> to chase, engrave <strong>(a design on a metal surface)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SRed10.</strong> to sweep hard</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SRed13.</strong> to strike <strong>(the hour)</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 6.2.** Senses of the lexeme ÇALMAK (tur/v) in contrast with its senses in English.
### Table 6.3. Comparing senses of the lexeme ÇALMAK (tur/v) based on the dictionaries Redhouse and Türkçe Sözlük.

<table>
<thead>
<tr>
<th>ASPECT</th>
<th>Sense in Red</th>
<th>Sense in TS</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS1 'to add an element (in)to a substance / (on)to an object'</td>
<td>$S_{\text{Red}}2$</td>
<td>$S_{\alpha}$</td>
</tr>
<tr>
<td></td>
<td>$S_{\text{Red}}3$</td>
<td>$S_{TS}8$</td>
</tr>
<tr>
<td></td>
<td>$S_{\text{Red}}4$</td>
<td>$S_{TS}9$</td>
</tr>
<tr>
<td>OS2 'to remove an element from an object / person / authority'</td>
<td>$S_{\text{Red}}5$</td>
<td>$S_{TS}1$</td>
</tr>
<tr>
<td></td>
<td>$S_{\text{Red}}8$</td>
<td>$S_{TS}11$</td>
</tr>
<tr>
<td></td>
<td>$S_{TS}13$</td>
<td>$S_{\zeta}$</td>
</tr>
<tr>
<td>'to hit an object with another object'</td>
<td>$S_{\text{Red}}1$</td>
<td>$S_{TS}3$</td>
</tr>
<tr>
<td></td>
<td>$S_{\text{Red}}7$</td>
<td>$S_{TS}5$</td>
</tr>
<tr>
<td></td>
<td>$S_{\text{Red}}9$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$S_{\text{Red}}10$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$S_{\text{Red}}12$</td>
<td>$S_{TS}7$</td>
</tr>
<tr>
<td></td>
<td>$S_{\text{Red}}13$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$S_{\text{Red}}14$</td>
<td>$S_{TS}2$</td>
</tr>
</tbody>
</table>
In the sense identification map of the lexeme ÇALMAK (tur/v) (cf. Table 6.4) senses from both sources Redhouse İngilizce-Türkçe/Türkçe-İngilizce Sözlük (Redhouse English-Turkish/Turkish-English Dictionary) and Türkçe Sözlük (monolingual Turkish Dictionary by Püsküllüoğlu) which have been selected for analysis are denoted by Greek alphabetic symbols (e.g. Sa, Sβ, ... Sζ). Basic concepts add, mix, apply, spread, take and cut have been placed under the column of Aspect A = ACTION and correspond to each of the different senses of the lexeme. These can be regarded as implications at basic level. The column of ACTION, where these basic concepts are listed, is divided into two main groups by a line indicating sense opposition. This line of sense opposition is the focal point of the entire map as it clearly shows the bordering line of senses opposing each other.

We have described the sense identification map in a fairly superficial way. The map needs a closer look and deserves an analysis in greater detail. In the group of OS1 we have, for instance, the concepts Sa (= SRe2) and Sβ (= SRe3, STS8) where we can observe a seemingly exact overlap. Both columns for add and mix have been marked with a + sign which shows that both senses embrace the basic conceptual elements of adding and/or mixing in of a substance to another. However, Sa is more general than Sβ; Sa only indicates the adding and mixing in of an 'unknown' element to an 'unknown' substance, which means that there are no restrictions or limitations with regard to the elements and substances one can add in and mix together. Hence, we can say that Sa (= SRe2) takes place under aspect Aa = 'to put something together with something else so as to increase the size, number, amount etc.'. On the other hand, we have Sβ (= SRe3, STS8) which takes place under aspect Aβ = 'dairy product'. Here, SRe3 corresponds to to make yoghurt, and STS8 has somewhat a more elaborate definition which reads the adding of an element into milk so as to induce fermentation in order to produce yoghurt. Hence, STS8 is clearly more specific than SRe2, and which is more specific than SRe3 due to the fact that we are provided with the extra
information: one puts yoghurt (fermenting agent) into milk and mixes them together in order to make yoghurt. Therefore, we can say that \( \{S_{Red2}\} > \{S_{Red3} > S_{TS8}\} = S_a > S_B \).

Moving on to the group of OS2, \( S_\xi \{= S_{TS13}\} \) under the aspect \( A_\xi = \text{`time'} \) denotes ‘to take someone’s time’, e.g. birkaç dakikanızı çalacağım = I am going to take/steal a few of your minutes (when translated literally). Both words take and steal in this context pragmatically imply that the person who is demanding someone’s time feels that they are actually not entitled to it, but feel the need to pursue their request with determination in form of a full sentence and not a question, in order to ensure consent.

\( S_\delta \{= S_{TS1}, S_{Red5}\} \) associated with aspect \( A_\delta = \text{`law'} \) denotes ‘to take something that belongs to another person/authority/institution without permission or legal right and usually secretly’, i.e. ‘to steal’. Notice that the difference between the aforementioned example in \( S_\xi \) and \( S_\delta \) is that in \( S_\xi \) the person in action is seeking indirectly for the consent of the person they are going to take their time, whereas in \( S_\delta \) the action of taking what belongs to someone else involves no permission on their part. For instance, in the following sentence “Kaçak elektrik kullanımı, idari para cezası dışında aynı zamanda ‘Devlet malını çalmak’ yani hırsızlık suçu fiileni taşıdığından Türk ceza kanununa göre cezalandırıldığının da bilinmesi gerekmektedir.” [T.C. Sivas Valiliği: http://www.sivas.gov.tr/basin/arsiv/yazili/28haziran.htm], Devlet malını çalmak = to steal government property entails the unauthorised use of property/possession of a governmental institution, here: a government monopoly supplying electricity for one’s own benefit. Such an illegal act (i.e., hırsızlık suçu = theft crime) is performed without the institution’s permission and without their awareness. Here, the elements of non-awareness and secrecy involving the act of stealing give clear emphasis to the difference between the senses of \( S_\delta \) and \( S_\xi \).
In Se $\{= \text{StS11, SReo8}\}$ under aspect $A_e \equiv \text{‘tailoring’}$ lexeme ÇALMAK involves the action of cutting, e.g. 

"Eninden biraz çalma kaldık düzeldir bu kumaş = by cutting/taking/removing some of the edge diagonally, the fabric will be alright. Similar to Se we take something that belongs to someone or is part of something else. This action, nevertheless, does not entail the elements of secrecy or awareness as is the case in S6. Due to the fact that the lexeme ÇALMAK (tur/v) is in context with kumaş = fabric, cloth the immediate interpretation on the meaning of the lexeme is placed under 'the action of removing an element from an object with a sharp tool', i.e. cutting."

So far, we have scrutinised the sense identification map with regard to its layout and contents, thereby discussing each concept's semantic value and aspect. In the next section we will investigate the lexeme ÇALMAK (tur/v) with regard to paradigmatic sense relations of exclusion and opposition, i.e. horizontal relations.
Table 6.4. Sense identification map of the lexeme ÇALMAK (tur/v).

<table>
<thead>
<tr>
<th></th>
<th>ÇALMAK (tur/v)</th>
<th>OS1</th>
<th>OS2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>add</td>
<td>mix</td>
</tr>
<tr>
<td>OS1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S₂₉₀₂</td>
<td>Sα</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>S₂₉₀₃</td>
<td>Sβ</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>S₂₉₀₄</td>
<td>Sγ</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>OS2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S₂₉₀₅</td>
<td>Sδ</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>S₂₉₁</td>
<td>Sε</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>S₂₉₁</td>
<td>Sζ</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
6.1.2.2. Paradigmatic Sense Relations of Opposition and Exclusion (Horizontal Relations) with Focus on the Lexeme ÇALMAK (tur/v)

Having identified what each of the senses of the lexeme ÇALMAK (tur/v) embrace, we will now move on to the discussion of its componential analysis (cf. Table 6.5). In Section 2.5.3 we argued that most systems of lexical decomposition combine sense components to form larger units of meaning. We will follow Weinreich’s methodology and adopt the approach of combining modes of composition for features, i.e. sense components, which are identical to those of words in sentences. Out of the two basic modes, we will apply the mode of ‘configuration’ (Section 2.5.3).

Initially, we need to break down the lexeme ÇALMAK (tur/v) into smaller semantic units, which in Wierzbicka’s terms are referred to as semantic components,59 to combine them into one meaningful unit. The Oxford Advanced Learner’s Dictionary (OALD) provides a valuable source for the retrieval of basic components, since the defining vocabulary for each entry is limited to 3,500 words.

Wierzbicka believes that “the set of semantic components in terms of which meanings are to be expressed are part of our innate cognitive/linguistic capacity, and should therefore be adequate for the description of any natural human language” (Cruse, 2000:256). Hence, it was essential to consult informants on the validity of the suggested lexical decomposition of the lexeme ÇALMAK (tur/v). Three native speakers of English (Subjects J, K and L), two of whom were British (male) and one of whom was Canadian (female), were provided with Table 6.5 outlining a list of sense components for each of the senses of the lexeme ÇALMAK (tur/v).

59 In the lexical decomposition, semantic components which make up the definition of the keyword ÇALMAK (tur/v) will, at times, be referred to as atomic concepts, or basic concepts.
The informants were asked in isolation which concept came first to mind when shown each list of components (corresponding to Sa, Sβ, Sy, ... Sγ). The list of sense components were altered and rearranged until the three informants arrived independently at the same concept. This study demonstrated that the selected sense components were acceptable for the description of each concept, since all three informants' responses were based on mutual cognitive agreement, i.e. the results reflected the informants' innate semantic capacity based on their judgements of the sense components' plausibility. This means, that each label (or as some linguists like to call it seme) representing a sense component, be it in English or any other language, when combined together conveys the essential atomic elements of a concept.

However, if we made the attempt to configure each concept, say in Turkish (i.e. if we were to use Turkish as the meta-language in the lexical decomposition of the Turkish keyword ÇALMAK (tur/v)), the combined structure would look different than the one presented in English. This is due to the fact that Turkish typologically belongs to the group of agglutinative languages, whereas English belongs more to isolating and inflecting languages (partly also to agglutinative languages). Turkish does not possess prepositions such as IN(TO), ON(TO), OF and FROM, although, conceptually they are existent; these would appear as suffixes indicating case (suffixes -e/-a for accusative corresponding to IN(TO) or ON(TO), and suffixes -den/-dan for dative corresponding to OF or FROM). At this point we must question whether certain atomic concepts in one language are more obvious than in others. Thus, what appears to be an atomic concept in English may not necessarily be considered as a basic concept in Turkish due to the structural 'complexity' of its nature with regard to the non-existence of prepositions. Hence, in spite of the fact that a particular atomic concept may exist across several languages, it is likely to appear as a more elaborate form in some languages. Thus certain atomic concepts in a given language could still be regarded as basic concepts in another language despite their occurrence in combined forms, i.e. as structurally complex semantic components, and the actual problem lies in what form to present these.
Table 6.5. Lexical Decomposition of the lexeme ÇALMAK (lur/v).

\[
\begin{align*}
\text{OS1} &= \text{‘to add an element (in)to a substance / (on)to an object’} \\
S\alpha &= \langle \text{ACTION}\rangle \ [\text{PUT}] \ [\text{ELEMENT}] \ [\text{IN}(\text{TO})] \ [\text{SUBSTANCE}] \\
S\beta &= \langle \text{ACTION}\rangle \ [\text{PUT}] \ [\text{YOGHURT}] \ [\text{IN}(\text{TO})] \ [\text{MILK}] \\
S\gamma &= \langle \text{ACTION}\rangle \ [\text{PUT}] \ [\text{SUBSTANCE}] \ [\text{ON}(\text{TO})] \ [\text{SURFACE}] \ [\text{MOVE}] \ [\text{SUBSTANCE}] \ [\text{FORM}] \ [\text{LAYER}] \\
\hline
\text{OS2} &= \text{‘to remove an element from an object / person / authority’} \\
S\delta &= \langle \text{ACTION}\rangle \ [\text{TAKE}] \ [\text{OBJECT}] \ [\text{FROM}] \ [\text{PERSON}]/[\text{PLACE}] \ [\text{WITHOUT}] \ [\text{YES}] \ [\text{FROM}] \ [\text{PERSON}] \ [\text{NOT}] \ ([\text{RETURN}] \ [\text{OBJECT}] \\
S\varepsilon &= \langle \text{ACTION}\rangle \ [\text{TAKE}] \ [\text{OBJECT}] \ [\text{FROM}] \ [\text{MORE}] \ [\text{BIG}] \ [\text{OBJECT}] \ [\text{WITH}] \ [\text{SHARP}] \ [\text{OBJECT}] \\
S\zeta &= \langle \text{ACTION}\rangle \ [\text{USE}] \ [\text{MUCH}] \ [\text{TIME}] \ [\text{OF}] \ [\text{SOMEONE}] \ [\text{FOR}] \ [\text{ONESELF}] 
\end{align*}
\]


Going back to the three informants responses, it was interesting to observe one aspect of the experiment with regard to extra-linguistic knowledge (Section 2.2.3): when the list of sense components was presented, the female Subject L understood that in $S\beta = \langle[ACTION]\rangle [PUT] [YOGHURT] [IN(TO)] [MILK]$ the concept $S\beta$ involved a fermentation process. The remaining two male Subjects J and K could not arrive at the conclusion which the female Subject L had identified. Both the two male Subjects J and K understood that the action conveyed the 'adding of yoghurt into milk', however could not make sense as to why one would intend to do so. This is an interesting example with regard to the debate on the 'distinction' of linguistic/semantic knowledge vs. encyclopaedic knowledge (Section 2.2.3); if we remember, in the past, linguists such as Gauger, Langacker and Lutzeier, have contributed to this debate. Gauger in his book *Wort und Sprache* (Section 2.2.3), for instance, talks about *Inhaltsverdichtung des Wortes*, which is concerned with the efforts made by speakers in gaining knowledge of the intensional value(s) of a concept. It is, so to speak, "the process of refining the content boundaries of a vaguely contoured concept in the mental lexicon by virtue of experience of the world with trial and error attempts of the mind":

"Der Inhalt des Wortes ist eine bewußteinsmäßigische Vorstellung des durch das Wort intendierten Dings. [...] Sie konstituiert sich, wie ausgeführt, kraft des ersten bennenden Zeigaktes in einem ersten, zumeist unzureichenden Ansatz. Im Gefolge weiterer Zeigakte festigt sich dieser Ansatz im Sinne einer fortschreitenden, von Korrekturen begleiteten, sich weithin allein im Vorbewußten abspielen <Verdichtung). Der Inhalt ist fertig im dem Augenblick, wo die individuelle Dingvorstellung mit der idealtypischen zusammenfällt: wenn also das Individuum unter »Haus« die Gesamtheit der Züge begreift, die konstitutiv an einem Ding sein müssen, damit es, entsprechend dem idealtypischen deutschen Sprachbesitz, durch das Wort *Haus* bezeichnet werden kann."

(Gauger, 1970:65)

Gauger suggests three ways of "Inhaltsverdichtung": the first way is through situational and contextual context, the second involves the acquisition of knowledge
through the experience with the world, and hence the determination of what a word is supposed to cover at the content level leading to the correction and enrichment of the content of concepts, and finally a third way of Inhaltsverdichtung where the content boundaries of words identify each other’s conceptual borders. It is the second case which is similar to the one we observed in the three informants’ responses. The fact that the two male Subjects J and K could not reach a conclusion when presented with a list of atomic concepts describing the concept of FERMENT, yet were capable of comprehending what the action involved, is significant to the debate in question; in communication, for precision and accuracy reasons, the level of extra-linguistic knowledge is vital. As for the question on the existence of a purely linguistic definition of content, it is perhaps more realistic to imagine a subtle gradation between the two extremes ranging from the linguistic to the extra-linguistic; thus the task of identifying where the border line between these two extremes lies becomes virtually impossible. It depends on an individual’s personal experience of the world what the meaning of a concept embraces; this in turn determines the location of a concept in the linguistic net and hence reflects our mind sets.

The discussion so far has sought to illustrate the sense identification process of the lexeme ÇALMAK (tur/v). It is, however, crucial to analyse which elements in the lexical decomposition play an important role in determining sense opposition. In the following Section 6.1.2.3 we will reveal what type of sense opposition the lexeme ÇALMAK (tur/v) can be assigned to.
6.1.2.3. The Lexeme ÇALMAK (tur/v) and Sense Opposition

When we observe the lexeme ÇALMAK (tur/v) as in Diagram 6.1 below, it is worth noting that the presented structure clearly covers what has been mentioned so far: concepts $S_a$, $S_b$, $S_y$, ... $S_z$ are placed under the lexeme ÇALMAK (tur/v) to indicate its polysemous character. However, the concepts are gathered beneath groups $OS_1$ and $OS_2$, as they represent an oppositeness with regard to content; hence the arrow between $OS_1$ and $OS_2$.

This is similar to Lutzeier's example of the lexeme FERRE (lat/v), where one sense of the lexeme means 'zahlen, etw. weggeben' and the other sense denotes 'etwas erhalten'. Both senses are represented with an arrow between them, pointing to either sides, in order to indicate sense opposition (Section 2.4.1.2.1). Nevertheless, the structure in Diagram 6.1 is somewhat more elaborate compared to Lutzeier's example, as it partially reflects a hierarchical structure. Note that the concept $S_b$ is lower ranking than $S_a$. This is due to the fact that, if we confine our attention to the list of lexical decomposition of the lexeme ÇALMAK (tur/v), the properties of the sense components [YOGURT] and [MILK] in $S_b$ are more specific than the ones of [ELEMENT] and [SUBSTANCE] in $S_a$. Hence, the concept $S_b$ is in subordinance to $S_a$.

$S_a = (\{\text{ACTION}\}) [\text{PUT}] [\text{ELEMENT}] [\text{IN} (\text{TO})] [\text{SUBSTANCE}]$

$S_b = (\{\text{ACTION}\}) [\text{PUT}] [\text{YOGURT}] [\text{IN} (\text{TO})] [\text{MILK}]$

Thus, it can be argued that the structure resembles a taxonomic hierarchy where the concept ÇALMAK (tur/v) acts as the beginner, and $OS_1$ and $OS_2$ represent the two nodes at level 1 of the hierarchy, followed by $S_a$ at level 2. It then follows the different concepts $S_b$, $S_y$, ... $S_z$ displaying the richest set of characteristic properties at the basic level, or what some anthropological linguists call the generic level (Section 2.4.3.a)(i)).
CHAPTER 6: Analysis of the Lexeme ÇALMAK (tur/v)

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Diagram 6.1. The phenomenon of sense opposition in ÇALMAK (tur/v).

In Diagram 6.1, groups OS1 and OS2, which represent sense opposition, are in a reversivity relationship. Reversivity is found only in verbs and occurs when senses denote movement, or more generally change, in opposite directions between two terminal states (cf. Section 2.4.1.2.(iv)). Thus, the senses $S_\alpha$, $S_\beta$, and $S_\gamma$ which fall under the group OS1 denote the fundamental idea of 'adding an element into a substance / (on)to an object' compared to the second group OS2 where senses $S_\delta$, $S_\varepsilon$, and $S_\zeta$ denote the idea of 'removing an element from an object / person / authority'. Besides fulfilling the conditions of incompatibility, which is a basic requirement of opposition, these two principle ideas gathered under OS1 and OS2 respectively, have the characteristics of initiating a movement in contrast to ending it, and vice versa. ÇALMAK (tur/v), like many other lexemes, may not represent as obvious an example as Lutzeier's with the verb AUFROLLEN (ger/v) as in S1 = 'to wind / roll up', e.g. der film muss erst aufgerollt werden, and as in S2 = 'to unroll', e.g. der rote teppich ist für den staatsbesuch aufgerollt (Lutzeier, 2002a), however the principle idea which it shares makes it into a lexeme of reversible nature.
In this section we have discussed the lexeme ÇALMAK (tur/v) with regard to paradigmatic sense relations of exclusion and opposition. The next section will deal with syntagmatic sense relations.

6.1.2.4. Syntagmatic Sense Relations with Focus on the Lexeme ÇALMAK (tur/v)

It is natural in language that some words merge to create better combinations than others. We frequently see, in monolingual as well as in bilingual dictionaries, entries with additional information on suitable collocations. We may wonder why a given word W prefers A over B. The notion of (collocational) affinity, as Cruse points out (Section 2.4.2), refers to the ratio between the actual co-occurrence of two words, and their predicted co-occurrence on the basis of their individual frequencies in the language. One reason for W's preference for A over B may be due to a semantic clash between W and B, and the absence of such clash between W and A. The other reason may involve cases where there is no such clash between W and B, and yet W has greater affinity for A.

As for the keyword ÇALMAK (tur/v) there is great affinity towards nouns such as: zîl = bell, kâpi = door, radyo = radio, any musical instrument (e.g. gîtar = guitar), yoğurt = yoghurt, kîrağî = frost, merhem = ointment, any colour (e.g. sari = yellow), zaman = time (infact any unit of time) (TS/Pûsküllûoğlu, 1999).

Since, typologically, Turkish belongs to the group of agglutinative languages, the above listed nouns will carry different suffixes. Nevertheless, essentially, they all precede our keyword ÇALMAK (tur/v) as they have the greatest collocational affinity forming an ideal co-occurrence pattern.
CHAPTER 6: Analysis of the Lexeme ÇALMAK (tur/v)

CASE STUDY 3

In light of the above, we will investigate in this section the semantic relations between lexical units in the same syntactic structure with focus on the keyword ÇALMAK (tur/v), and identify possible disambiguation processes. Subject M who is a native speaker of Turkish will act as an informant in the validation of suggested examples and the results achieved.

To start off with, take a collocational pattern such as yoğurt çaldım, which can be regarded as a grammatically correct sentence. However, it is both lexically and grammatically ambiguous. To this sentence, more than one meaning can be assigned, corresponding to the alternative interpretations:

(a) I made yoghurt by adding a type of bacteria into milk so as to ferment it,
(b) I stole yoghurt, or
(c) I applied/spread yoghurt (on a surface).

On the level of lexical description, whether çaldık refers to either:

(i) produced by fermentation, or
(ii) stole, or
(iii) applied/spread (on a surface)

is open to debate.

As we already know, there are certain systematic connections between syntagmatic and paradigmatic sense relations. In cases of lexically or grammatically ambiguous structures, the ambiguity can in general be 'cured' by substituting one of the elements which gives rise to the problem by a hyponym or hyponymous expression, or by a hyperonym (Section 2.3.1.1). Consider the following:
(1) Yogurt caldim.  
    = I made / stole / spread / applied yoghurt.

(2) Yogurt yaptim.  
    = I made yoghurt.

What the successful substitution yaptim in (2) achieves, is to restore clarity. It acts as a hyperonym of caldim as in (1). Another explanation for the cure of ambiguity in the philonym (Section 2.4.2) yøgurt yaptim would be that yaptim is a word from standard formal Turkish as opposed to caldim which is more of a colloquialism and belongs to the local vernacular.

Constraints on co-occurrence between lexical items usually have directional properties (Section 2.4.2). There are two aspects of directionality in syntagmatic constraints; one of them concerns which is the selector (lexical item which does the selecting in a given co-occurrence pattern), and the selectee (lexical item which gets selected in a given co-occurrence pattern). The direction in which selection operates is correlated with grammar. The general idea is that adjectives select their head nouns and verbs select their complements; nouns almost always are selectees. Hence:

\[
\begin{array}{cc}
\text{yøgurt} & \text{çaldim} \\
\text{selectee} & \text{selector}
\end{array}
\]

If we were given the task, say, to specify the semantic nature of the verbs which could create a philonymous selectee-selector combination with the noun yøgurt, the possibilities would be as follows:
CHAPTER 6: Analysis of the Lexeme ÇALMAK (tur/v)

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Note that there is no superordinate notion which covers all the above possibilities. However, we can divide them into two main groups:

- activity leading to consumption: yedim, sürdüm, yaptim, çaldim
- activity involving purchase: aldim, çaldim

It is the insertion or the existence of a third element in the philonymous combination of yoğurt çaldim we are interested in, which could resolve ambiguity. In structure (4), for instance, we can clearly see that the addition of an object in dative case, such as dükândan = from a/the shop clearly restores the intended meaning of stealing; the fact that the noun is in the dative case with the -dan suffix rules out the other three possible readings of ÇALMAK (tur/v), which are to make, to spread and to apply.

(3) Yoğurt çaldim.
= I made / stole / spread / applied yoghurt.

(4) Dükândan yoğurt çaldim.
= I stole yoghurt from the shop.

As a result, the co-occurrence pattern of dükândan çalmak = to steal from a/the shop is a philonymous combination and rules out the other aforementioned three possible readings.
CHAPTER 6: Analysis of the Lexeme ÇALMAK (tur/v)

CASE STUDY 3

dükkândan  yoğurt  çaldım ✓
            aldım ✓
            yedim ✗
            sürdüm ✗
            yaptım ✗

It is important to realise that in the sentence yoğurt çaldım the lexeme ÇALMAK (tur/v) needs actually a grammatical object in the dative case, such as ekmeğe, and the object yoğurt requires then the suffix -u for the accusative case, therefore yoğurdu; hence, yoğurdu ekmeğe çaldım. This is due to the fact that the lexeme ÇALMAK (tu/v) can sometimes act as a transitive verb. So for instance:

(5) Ekmeğe ne çaldın?
    = What did you spread on(to) the bread?

(6) Yoğurt çaldım.
    = I spread yoghurt.

We may regard the object ekmek in (5) as the determining factor for the meaning of ÇALMAK (tu/v) in (6).

The meaning of ÇALMAK (tu/v) as in (6) is achieved in our minds at a subconscious level, which can be construed only when the surrounding context is known (Section 2.2, Section 2.2.1, Section 2.2.2). Otherwise, when sentence (6) is observed in isolation and there are no clues to enable the dissolution of its elliptical nature, one is confined to guessing the intended message, thereby surmising that (i) produced by fermentation or (ii) stole could also be candidates for association.
It is sometimes the case that it is easier to envisage a scene than another when confronted with an ambiguous lexeme. This is because our memories contain records of frequently encountered scenarios which can relatively easily be retrieved (cf. Cruse, 2000:370-371). With regard to the lexeme çalmak in isolation, we can say that it evokes the meaning of stealing as in Sö rather than its other meanings as quoted in Table 6.2. Hence, the concept is entered as the most frequent sense in Püsküllüoğlu’s monolingual dictionary Türkçe Sözlük.

It is inevitable that meanings of words have an impact on collocational affinity. In devlet malı çalmak = to steal government property, for instance, the compound noun devlet malı = government property determines the meaning of çalmak as ‘to steal’. Any object that can be stolen attributes the lexeme çalmak in this way. But what about müzik çalmak = to play music or kapıya çalmak = to knock on the door? Here the selectional preferences made are arbitrary. We cannot predict from general knowledge that çalmak, in conjunction with certain other lexemes, acquires a different meaning. There are also no set rules which tell that a certain group of words prefers one of the senses over the other. The meaning that çalmak encounters is, in many instances, at the semantic level and depends on extra-linguistic knowledge.

Consider another example: We know that extra-linguistic factors (Section 2.2.3) are not located in the language to determine the affinity between two or more elements. The relationship between yoğurt and ekmek, for example, may sound somewhat odd in the first instance. As we already know, the notion of collocational affinity refers to the ratio between the actual co-occurrence of two words (or more), and their predicted co-occurrence on the basis of their individual frequencies in the language (Section 2.4.2). The affinity between the two elements yoğurt and ekmek in this instance is predetermined by culture; Turks may spread a particular type of yoghurt (e.g. süzme yoğurt) on their bread and apply some honey on top to eat it, however, cultural outsiders may not have even considered creating such a ‘stereotypic’
combination. We need to consider the fact that certain stereotypic combinations lead to certain collocational patterns, and therefore, the likelihood that bread with yoghurt and honey may be of a less frequent occurrence in another culture, would put the semantic compatibility of the sentence ekmeğe yoğurt çaldım into question. Something may be very frequent, but not often noticed or realised, i.e. what may be perceived as more frequent in one culture may be less frequent, or may have gone unnoticed in another. Hence, authenticity in the extra-linguistic world creates another puzzle in the association process. Therefore, it should not be of surprise to any of us that a concept may evoke certain associations or collocations in one culture, which may be different or unknown to another. It is obvious enough that the meanings of words have an effect on their collocational affinity.

So far, we have discussed all the relevant aspects of paradigmatic sense relations of opposition and exclusion (horizontal relations), syntagmatic sense relations, and related issues. Before we move on to the conclusion section of this chapter, we will provide the following Table 6.6 as an overview of the findings related to the keyword. Once again English has been chosen as the meta-language for the representation of the entry:
<table>
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<tr>
<th>Lexeme</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>Turkish</td>
</tr>
<tr>
<td>Wordclass</td>
<td>Verb</td>
</tr>
<tr>
<td>Type of Gegensinn</td>
<td>Lexeme of incompatible oppositeness</td>
</tr>
<tr>
<td>Domain Classification</td>
<td>Intradomain</td>
</tr>
<tr>
<td>Aspect (A)</td>
<td>A = ‘Action’</td>
</tr>
<tr>
<td>Opposite Senses (OS1 / OS2)</td>
<td>OS1 = ‘to add an element into a substance / (on)to an object’</td>
</tr>
<tr>
<td></td>
<td>OS2 = ‘to remove an element from an object/person/authority’</td>
</tr>
<tr>
<td>Senses (S\textsubscript{Red} / S\textsubscript{TSt})</td>
<td>OS1 Sα = ‘add, mix’</td>
</tr>
<tr>
<td></td>
<td>OS1 Sβ = ‘to make yoghurt’</td>
</tr>
<tr>
<td></td>
<td>OS1 Sγ = ‘to spread (honey, butter, ointment)’</td>
</tr>
<tr>
<td></td>
<td>OS2 Sδ = ‘to steal’</td>
</tr>
<tr>
<td></td>
<td>OS2 Sε = ‘to cut on the bias’</td>
</tr>
<tr>
<td></td>
<td>OS2 Sʃ = ‘to use / take / waste someone’s time’</td>
</tr>
</tbody>
</table>

**Examples**

**Turkish**

- **OS1**
  - *yogurt çalmak*
  - “Bir tencere *yogurt çaldık.*”

- **OS2**
  - *(birşey) çalmak*
  - “Kaçak elektrik kullanımy, idari para cezası dışında aynı zamanda ‘Devlet malını çalmak’ yani hırsızlık suçu filini taşıdığından Türk ceza kanununa göre cezalandırıldığının da bilinmesi gerekmektedir.”
6.2. CONCLUSION

In CS3, we analysed and discussed data and results with focus on the lexeme ČALMAK (tur/v) and in line with recent theories on paradigmatic sense relations of exclusion and opposition (horizontal relations), by paying particular attention to the phenomenon of sense opposition. In this study, we have shown that Gegensinn exists in Turkish, just as in German and Classical Arabic.

We also studied syntagmatic sense relations with the lexeme ČALMAK (tur/v) at the focal point. We demonstrated how syntagmatic sense relations interact with paradigmatic sense relations of identity and inclusion (vertical relations), in particular, in the dissolution of ambiguity. Hence, in this part of the study, we discovered that sense relations are important elements of study which contribute towards disambiguation. The disambiguation process of the lexeme ČALMAK (tur/v) involved the following procedures:

(i) the moving up or down the levels of a hierarchical scale: we replaced the lexeme ČALMAK (tur/v) with a hyperonym and observed that it restored clarity in the syntagmatic structure;

(ii) examining the meanings which are either contiguous to or overlap the selected meaning of the lexeme: in the componential analysis we compared the different senses of the lexeme ČALMAK (tur/v) with each other;

(iii) listing minimal diagnostic components which set off the meaning of the lexeme from other meanings: the componential analysis allowed us to list the semantic components which show the internal similarities and distinctivenesses of the lexeme under scrutiny;
CHAPTER 6: Analysis of the Lexeme ÇALMAK (tur/v)

CASE STUDY 3

(iv) context: determining the directional properties of a bipartite syntagmatic constraint: ÇALMAK (tur/v) was identified as the selector in a bipartite co-occurrence pattern; however, the problem is that its selectional preferences are arbitrary;

(v) context: the insertion of a third element into an ambiguous bipartite co-occurrence pattern, such as yoğurt çaldım, restored clarity;

(vi) grammatical analysis: the different grammatical functions of the lexeme ÇALMAK (tur/v), can in certain instances eradicate the ambiguity problem;

(vii) collocations: collocational affinity, i.e. selectional preferences are arbitrary;

(viii) extra-linguistic factors: arbitrary selectional preferences determined by culture can contribute to ambiguity.

We have seen that the above mentioned elements such as sense relations, componential analysis, context, grammatical function, collocations and extra-linguistic factors are important elements in the determination process of the meaning of a polysemous lexeme, some of which contributed towards the dissolution of its ambiguous nature.

The next chapter involves the summary of the three case studies, some concluding remarks on the issue and comments on possible future studies.
CHAPTER 7

CONCLUSION and FUTURE STUDIES

This thesis has provided an overview of the issues related to investigating lexical items from a semantic angle. Structural patterns of polysemous lexical items at the paradigmatic and partially at the syntagmatic levels have been described in three case studies involving the languages English, German and Turkish. Particular attention was drawn to issues of cognition and the structure of mental lexicon in the first case study, and to the phenomenon of sense opposition in two of the remaining studies. This final chapter will outline Case Study 1, 2 and 3. It will end drawing attention to future steps which may be taken with regard to the central issue of the research in question.
CHAPTER 7

CONCLUSION and FUTURE STUDIES

7.1. CASE STUDY 1 (CS1) : The Lexeme BRIDGE (eng/n)

Case Study 1 (CS1) dealt with the importance of cognition and the impact of such on the semantic and lexical structuring in our mental lexicons since it has great impact on communication and interaction between people. For doing so, we studied paradigmatic sense relations of identity and inclusion (vertical relations).

One of the examples in this study (Section 4.1.2.2) revealed that in order for successful interaction to take place between two experts in adjacent fields, there needs to be a corresponding match between the structural set of senses existing in each speaker's mental lexicon since precision in communication amongst experts is vital. In this study we discovered that communicative problems can arise due to intra-domain specific ambiguity; this is because semantic or lexical fields can be structured differently in speakers’ mental lexicon. One role of paradigmatic sense relations of identity and inclusion (vertical relations) in CS1 was to reflect the importance of extra-linguistic factors and to reveal the paradigmatic relations which hold between lexical units intra-domain and across several different domains as they are distributed in the mental lexicon. It is important to mention that cognition which determines our understanding of certain concepts has great impact on communication. The way our mental lexicon is built has its foundations on perception, cognition and the early inputs we gain in childhood and throughout our life on the particular issues of what is surrounding our world.

CS1 continued with several comparisons of the lexeme BRIDGE (eng/n) with its corresponding senses BRÜCKE (ger/n) and KÖPRÜ (tur/n) in order to provide an analysis on the intensional similarities of the concept across languages. A field diagram showed that the figurative meanings of BRIDGE (eng/n), BRÜCKE (ger/n) and KÖPRÜ (tur/n), and each of their senses in the domains Civil engineering, Dentistry, Naval architecture and Science fiction had a one to one correspondence relationship with each other.
7.2. CASE STUDY 2 (CS2): The Lexeme \textit{AUFGEBEN} (ger/v)

Case Study 2 (CS2) focused on the structural description of the polysemous lexeme \textit{AUFGEBEN} (ger/v) from German with regard to paradigmatic sense relations of opposition and exclusion (horizontal relations) and syntagmatic sense relations.

A field diagram allowed us to compare the content boundaries of the lexeme \textit{AUFGEBEN} (ger/v) in the other two languages English and Turkish, and a componential analysis demonstrated the existence of sense opposition: OS1 = 'to initiate an event and to maintain its existence' and OS2 = 'to terminate an event', an indication of incompatible oppositeness. Consulting informants helped us to decompose the lexeme under scrutiny.

CS2 carried on with a study on syntagmatic structures: collocational patterns, essential meaning relations and collocational restrictions were topics of discussion. Different from CS1, CS2 provided us with a collocation chart which reflected the combination of certain lexemes and the interrelation of such with the lexeme \textit{AUFGEBEN} (ger/v).

7.3. CASE STUDY 3 (CS3): The Lexeme \textit{ÇALMAK} (tur/v)

Case Study 3 (CS3) focused on paradigmatic sense relations of opposition and exclusion (horizontal relations) and syntagmatic sense relations.

A componential analysis, which required some comments on basic concepts, revealed that the lexeme is, at the intensional level, of sense opposing kind, more specifically that it represents a case for reversive oppositeness.

CS3 also gave much focus on syntagmatic sense relations where the semantic relations between lexical units in several different syntactic structures were placed under scrutiny. We did not deal only with lexical ambiguity but also with grammatical ambiguity. In
this part of the study we located the ambiguity problem and suggested some disambiguation processes: in connection to investigating lexical ambiguity, we have demonstrated that there is conclusive evidence of strong systematic connection between syntagmatic and paradigmatic sense relations at the vertical level.

We moved on to identify some co-occurrence patterns where we discovered that lexical items have directional properties: The two aspects of directionality involved selector-selectee relationship, whereby the selector is the lexical item which does the selecting in a given co-occurrence pattern and the selectee is the lexical item which gets selected in a given co-occurrence pattern. Based on this principle, we located which lexical item is the selector and which is the selectee.

In the discussions involving disambiguation, we also revealed that besides context, the inclusion of an additional element to a philonymous combination of polysemous kind and/or replacing the element in a philonymous combination, which gives rise to ambiguity, by shifting up or down the hierarchical levels may resolve lexical ambiguity. We also revealed that meanings of words certainly have an impact on collocational affinity should one of the elements in the combination be of polysemous character. Finally, we emphasised the impact of extra-linguistic factors in the resolution of lexical ambiguity.

7.4. CONCLUSION and FUTURE STUDIES

Findings show theories of syntagmatic and paradigmatic sense relations, with particular focus on sense opposition, are applicable across the three languages (English, German and Turkish) studied.
Theories can presumably be extended to other languages which derive from the same language groups (typologically), or even further to all the languages in the world (universality) as lexical ambiguity is a general problem of natural languages.

Methods are applicable throughout different languages as they are universal (e.g. semantic, cognitive, pragmatic or grammatical analysis), however may require slightly different approach, i.e. certain adjustments depending on the structure of the language.

Analysis tools such as System Quirk and WebCorp can be used for many languages, however features can always be improved on, especially on System Quirk and WebCorp, whereby adding more language options, improving their ease of use and extending their multi-tasks (e.g. direct link to the Internet, which does not exist in System Quirk, or frequency count options in WebCorp, or the addition of a context tool in both which will allow the user to receive a grammatical analysis of each element within the syntax being under scrutiny) in order to reduce a manual scanning or manual analysis to the minimum and, hence, save time and help avoid human error.

Studies in this thesis suggest that investigation into the paradigmatic and syntagmatic relationships concerning polysemous lexemes involve highly theoretical issues, however, that results may also find areas of application:

- Investigations into the human mind have always been effective in that the applicability of findings achieved from various kinds of research into the functions of human brain has resulted in machines developing and serving human kind. With respect to this research, its practicality may be integrated into artificial intelligence and may contribute in the overcoming of some of the hurdles in machine translation. This, however, requires another major study in the domain of computer science.
The development of dictionaries relies heavily on the search for new methods of representation. A user-friendly dictionary is always desirable as improved features will allow users to access entries with ease. Hence, novel external and internal structuring principles are vital in the representation of transparent entry formats. Exploring new and original methods may bring a shift in lexicography.
APPENDIX 1:

Corpora used for BRIDGE (eng/n) and BRÜCKE (ger/n)
# Table AP1.1: Corpus for BRIDGE (eng/n) in Civil Engineering.

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### APPENDIX 1

#### Suspension Bridges

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#### Thomas Telford's Bridges

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<td>Assembly, Welding and Correction</td>
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<tr>
<td>Cable and Tower Method</td>
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<td>Cable Stayed</td>
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<td>Cutting and Marking</td>
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<td>Large Block Method</td>
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<td>Machining</td>
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## APPENDIX 1

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**Subtotal** 4,990

**Total Number of Words for BRIDGE (eng/n) in Civ En** 43,130

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### Table AP1.2. Corpus for BRIDGE (eng/n) in Naval Architecture.

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## APPENDIX 1

<table>
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### APPENDIX 1

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## Surface-Effect, Captured-Air-Bubble, and Hydrofoil Ships

**Total Number of Words for BRIDGE (eng/n) in Nav arch**

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### Table AP1.3: Corpus for BRIDGE (eng/n) in Science Fiction.

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### APPENDIX 1

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**Total Number of Words for BRIDGE (eng/n) in Sci fi** | **25,346**

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### Table AP1.4: Corpus for BRÜCKE (ger/n) in Civil engineering.

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<td><a href="http://www.hr-online.de/wenndannda/ib/mobil/94156928211709.html">http://www.hr-online.de/wenndannda/ib/mobil/94156928211709.html</a></td>
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257
Table AP1.5. : Corpus for BRÜCKE (ger/n) in Naval architecture.

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<thead>
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<th>Words</th>
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**Total Number of Words for BRÜCKE (ger/n) in Nav arch**

2,362

Table AP1.6. : Corpus for BRÜCKE (ger/n) in Science fiction.

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### APPENDIX 1

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**Total Number of Words for BRÜCKE (ger/n) in Sci fi**

| 11,193 |

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**Summary Table AP1.7.**
Collected corpora for BRIDGE (eng/n), BRÜCKE (ger/n) and KÖPRÜ (tur/n).

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<td>E/S  M/S</td>
<td>E/S  M/S</td>
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<td>43,130 #</td>
<td>2,999 #</td>
<td>Ø   Ø</td>
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<tr>
<td>Nav arch</td>
<td>29,248 #</td>
<td>2,362 #</td>
<td>Ø   Ø</td>
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<td>Sci fi</td>
<td>25,346 #</td>
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<td>97,724 #</td>
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APPENDIX 2:
Data from System Quirk
APPENDIX 3:
Text on "Bridge Types"
The Basic Bridge Types

- Girder
- Arch
- Truss
- Cable Stayed
- Rigid Frame
- Suspension

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Girder Bridge

A girder bridge is perhaps the most common and most basic bridge. A log across a creek is an example of a girder bridge in its simplest form. In modern steel girder bridges, the two most common girders are I-beam girders and box-girders.

If we look at the cross section of an I-beam girder we can immediately understand why it is called an I-beam (illustration #1.) The cross section of the girder takes the shape of the capital letter I. The vertical plate in the middle is known as the web, and the top and bottom plates are referred to as flanges. To explain why the I shape is an efficient shape for a girder is a long and difficult task so we won't attempt that here.

A box girder is much the same as an I-beam girder except that, obviously, it takes the shape of a box. The typical box girder has two webs and two flanges (illustration #2.) However, in some cases there are more than two webs, creating a multiple chamber box girder.

Other examples of simple girders include pi girders, named for their likeness to the mathematical symbol for pi, and T shaped girders. Since the majority of girder bridges these days are built with box or I-beam girders we will skip the specifics of these rarer cases.

Now that we know the basic physical differences between box girders and I-beam girders, let's look at the advantages and disadvantages of each. An I-beam is very simple to design and build and works very well in most cases. However, if the bridge contains any curves, the beams become subject to twisting forces, also known as torque. The added second web in a box girder adds stability and increases resistance to twisting forces. This makes the box girder the ideal choice for bridges with any significant curve in them.

Box girders, being more stable are also able to span greater distances and are often used for longer spans, where I-beams would not be sufficiently strong or stable. However, the design and fabrication of box girders is more difficult than that of I beams. For example, in order to weld the inside seams of a box girder, a human or welding robot must be able to operate inside the box girder.

Typical Span Lengths

<table>
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<th>Span Lengths</th>
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World's Longest

<table>
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<th>Bridge</th>
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<td>300m</td>
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A Matsuo Example

<table>
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<th>Bridge</th>
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<tbody>
<tr>
<td>Namihaya Bridge</td>
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</table>

The truss is a simple skeletal structure. In design theory, the individual members of a simple truss are only subject to tension and compression forces and not bending forces. Thus, for the most part, all beams in a truss bridge are straight. Trusses are comprised of many small beams that together can support a large amount of weight and span great distances. In most cases the design, fabrication, and erection of trusses is relatively simple. However, once assembled trusses take up a greater amount of space and, in more complex structures, can serve as a distraction to drivers.

Like the girder bridges, there are both simple and continuous trusses. The small size of individual parts of a truss make it the ideal bridge for places where large parts or sections cannot be shipped or where large cranes and heavy equipment cannot be used during erection. Because the truss is a hollow skeletal structure, the roadway may pass over (illustration #2) or even through (illustration #1) the structure allowing for clearance below the bridge often not possible with other bridge types.

Trusses are also classified by the basic design used. The most representative trusses are the Warren truss, the Pratt truss, and the Howe truss. The Warren truss is perhaps the most common truss for both simple and continuous trusses. For smaller spans, no vertical members are used lending the structure a simple look (illustration #1.) For longer spans vertical members are added providing extra strength (illustration #2.) Warren trusses are typically used in spans of between 50-100m.

The Pratt truss (illustration #3) is identified by its diagonal members which, except for the very end ones, all slant down and in toward the center of the span. Except for those diagonal members near the center, all the diagonal members are subject to tension forces only while the shorter vertical members handle the compressive forces. This allows for thinner diagonal members resulting in a more economic design.

The Howe truss (illustration #4) is the

<table>
<thead>
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<th>Typical Span Lengths</th>
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<tbody>
<tr>
<td>40m - 500m</td>
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<table>
<thead>
<tr>
<th>World's Longest</th>
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<tbody>
<tr>
<td>Pont de Quebec</td>
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<tr>
<td>Total Length</td>
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<tr>
<td>Center Span</td>
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</table>

<table>
<thead>
<tr>
<th>A Matsuo Example</th>
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</table>

2nd Mameyaki Bridge
opposite of the Pratt truss. The diagonal members face in the opposite direction and handle compressive forces. This makes it very uneconomic design for steel bridges and its use is rarely seen.

Rigid Frame
Rigid Frame

Rigid frame bridges are sometimes also known as Rahmen bridges. In a standard girder bridge, the girder and the piers are separate structures. However, a rigid frame bridge is one in which the piers and girder are one solid structure.

The cross sections of the beams in a rigid frame bridge are usually I shaped or box shaped. Design calculations for rigid frame bridges are more difficult than those of simple girder bridges. The junction of the pier and the girder can be difficult to fabricate and requires accuracy and attention to detail.

Though there are many possible shapes, the styles used almost exclusively these days are the pi-shaped frame, the batter post frame, and the V shaped frame.

The batter post rigid frame bridge is particularly well suited for river and valley crossings because piers tilted at an angle can straddle the crossing more effectively without requiring the construction of foundations in the middle of the river or piers in deep parts of a valley (illustration #1).

V shaped frames make effective use of foundations. Each V-shaped pier provides two supports to the girder, reducing the number of foundations and creating a less cluttered profile (illustration #3.).

Pi shaped rigid frame structures are used frequently as the piers and supports for inner city highways. The frame supports the raised highway and at the same time allows traffic to run directly under the bridge (illustration #2.)
After girders, arches are the second oldest bridge type and a classic structure. Unlike simple girder bridges, arches are well suited to the use of stone. Many ancient and well known examples of stone arches still stand to this day. Arches are good choices for crossing valleys and rivers since the arch doesn't require piers in the center. Arches can be one of the more beautiful bridge types.

Arches use a curved structure which provides a high resistance to bending forces. Unlike girder and truss bridges, both ends of an arch are fixed in the horizontal direction (i.e. no horizontal movement is allowed in the bearing). Thus when a load is placed on the bridge (e.g. a car passes over it) horizontal forces occur in the bearings of the arch. These horizontal forces are unique to the arch and as a result arches can only be used where the ground or foundation is solid and stable.

Like the truss, the roadway may pass over (illustration #1) or through an arch (illustration #4) or in some cases both (illustration #3.) Structurally there are four basic arch types: hinge-less, two-hinged, three hinged and tied arches.

The hinge-less arch (illustration #1) uses no hinges and allows no rotation at the foundations. As a result a great deal of force is generated at the foundation (horizontal, vertical, and bending forces) and the hinge-less arch can only be built where the ground is very stable. However, the hinge-less arch is a very stiff structure and suffers less deflection than other arches.

The two hinged arch (illustration #2) uses hinged bearings which allow rotation. The only forces generated at the bearings are horizontal and vertical forces. This is perhaps the most commonly used variation for steel arches and is generally a very economical design.

The three-hinged arch (illustration #3) adds an additional hinge at the top or crown of the arch. The three-hinged arch suffers very little if there is movement in either direction.
foundation (due to earthquakes, sinking, etc.) However, the three-hinged arch experiences much more deflection and the hinges are complex and can be difficult to fabricate. The three-hinged arch is rarely used anymore.

The tied arch (illustration #4) is a variation on the arch which allows construction even if the ground is not solid enough to deal with the horizontal forces. Rather than relying on the foundation to restrain the horizontal forces, the girder itself "ties" both ends of the arch together, thus the name "tied arch."

Cable Stayed
Of all the bridge types in use today, the suspension bridge allows for the longest spans. At first glance the suspension and cable-stayed bridges may look similar, but they are quite different. Though suspension bridges are leading long span technology today, they are in fact a very old form of bridge. Some primitive examples of suspension bridges use vines and ropes for cables. The development of metals brought the use of linked iron bars and chains. But it was the introduction of steel wire ropes that allowed spans of over 500m to become a reality. Today the Akashi Kaikyo bridge boasts the world's longest center span of any bridge at 1,991 meters.

A typical suspension bridge (illustration #1) is a continuous girder with one or more towers erected above piers in the middle of the span. The girder itself usually a truss or box girder though in shorter spans, plate girders are not uncommon. At both ends of the bridge large anchors or counter weights are placed to hold the ends of the cables.

The main cables are stretched from one anchor over the tops of the tower(s) and attached to the opposite anchor. The cables pass over a special structure known as a saddle (illustration #2.) The saddle allows the cables to slide as loads pull from one side or the other and to smoothly transfer the load from the cables to the tower.

From the main cables, smaller cables known as hanger cables or hanger ropes are hung down and attached to the girder. Some suspension bridges do not use anchors, but instead attach the main cables to the ends of the girder. These self-anchoring suspension bridges rely on the weight of the end spans to balance the center span and anchor the cable.

Thus, unlike normal bridges which rest on piers and abutments, the girder or roadway is actually hanging suspended from the main cables. The majority of the weight of the bridge and any vehicles on it are suspended from the cables. In turn the cables are held up only by the tower(s), there is an incredible amount of weight that the towers must be able to support.

As explained in the cable stayed bridge section, steel cables are extremely strong yet flexible. Like a very strong piece of string, it is good for hanging or pulling something, but it is useless for trying to push something. Long span suspension bridges, though strong under normal traffic loads, are vulnerable to the forces of winds. Special measures are taken to assure that the bridge does not vibrate or sway excessively under heavy winds.
The most famous example of an aerodynamically unstable bridge is the Tacoma Narrows Bridge in Washington state, USA. This page on the Tacoma Narrows Bridge Disaster at the University of Bristol has some excellent photos and short movies showing why aerodynamic stability is important.

Back to Bridge Basics

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APPENDIX 4:
Data from WebCorp
WebCorp output for search term “aufgeben”
Producing output...

http://www.crmforum.de/job/stellensuche_2.html
Document Dated: Unknown
Plain Text Word List 165 tokens, 148 types
- CRM Forum Jobbörse: Stellengesuch aufgeben Hier haben Sie die M
- CRM Startseite Chiffre-Adresse Stellengesuche ansehen aufgeben Stellenangebote ansehen aufgeben Frage an
- Stellengesuche ansehen aufgeben Stellenangebote ansehen aufgeben Frage an den webmaster@crmforum

http://www.andaluciashop.com/g/klein_add.htm
Plain Text Word List 237 tokens, 164 types
- Kleinanzeigen aufgeben WIE GEBE ICH EINE ANZEIGE

http://home.t-online.de/home/Markus.Fink/fbzgra01.htm
Document Dated: Sat, 30 Dec 2000 19:34:34 GMT
Plain Text Word List 745 tokens, 454 types
- nde, warum Sie das Rauchen aufgeben sollten: Quelle: Zeitschrift Natur 6

http://www.it-arbeitsmarkt.de/eingabe-gesuche-persdaten.phtml
Document Dated: Unknown
Plain Text Word List 162 tokens, 130 types
- eMail-Agent anlegen eMail-Agent ändern GESUCH AUFGEBEN Gesuch ändern Neuste Gesuche Standardsuche
- eMail-Agent ändern Preise & Konditionen ANGEBOT AUFGEBEN Angebot ändern Recherche-Account Seminare Veranstalter

http://www.klassik.com/de/community/classifieds/menue.cfm?TASK=UPDATE
Document Dated: Unknown
Plain Text Word List 123 tokens, 84 types
- Nutzer-Login Suche Neueste Anzeigen Anzeige aufgeben - aktualisieren/entfernen Um eine Kleinanzeige
- zugesandt. Hinweis: Um eine Kleinanzeige aufgeben zu können, muß Ihr

http://www.job-ja.de/gesuch_info.php3
Document Dated: Unknown
Plain Text Word List 165 tokens, 125 types
- suchen Die Stellenangebote Eigenes Stellengesuch aufgeben Job anbieten Preise/Konditionen Online
- erfolgt mit verdeckter Adresse. Stellengesuch aufgeben

http://www.webcorp.org.uk/cgi-bin/webcorp2.nlm 09/07/02
Bitte wählen INSERATE: abrufen aufgeben JOBSITES: Stellenplattformen Firmenstellenseiten Top Firmen

Suchen Anzeige aufgeben Daten ändern Service Schnellsuche Eingabe

Berufsfeld - Sortieren nach Regionen Stellenangebote aufgeben/verwalten TopJobs Anzeigen aufgeben/verwalten
Stellenangebote aufgeben/verwalten TopJobs Anzeigen aufgeben/verwalten - Information Jetzt kostenlose Anzeigen verwalten - Information jetzt kostenlose Anzeigen aufgeben und verwalten! Nach der einmaligen

arbeitgeberseite* Stellengesuche abrufen und Inserate aufgeben und verwalten. Ref-Nr.23332: Einkauf Suche Nebenjob 20-30%... Angebot Stelleninserat aufgeben Hervorgehobene Stellen Werbung auf stellen

Home Inserat aufgeben Inserat verwalten Kontakt Fahrlehrer-Suche

1010 Kleinanzeigen kostenlos inserieren Anzeige aufgeben Pferd anbieten aktuell Von der

Stellen Sonstiges Anzeigen Optionen Anzeige aufgeben Anzeige löschen — Kontakt Informationen

http://www.webcorp.org.uk/cgi-bin/webcorp2.nlm
1. Sitemap  Home  Märkte  Anzeigen aufgeben  Stellenmarkt  Angebote  Gesuche  Immobilienmarkt  Verk
2. Internet  Schriftgröße ändern  Anzeigen aufgeben  Sie können hier direkt

http://www.it-adressen.de/deals_eintrag.php
Document Dated: Unknown
Plain Text  Word List  114 tokens, 103 types

- Anzeige für den Kleinanzeigenmarkt aufgeben.  Überschrift * (max. 60 Zeichen)  Anzeigentext
- eigene Internetseite  Anzeigen ansehen  Anzeige aufgeben  eMail-Formular  Impressum

http://www.students.ch/wohnungen/page_erfassen.php
Document Dated: Unknown
Plain Text  Word List  202 tokens, 149 types

- Inserat aufgeben  Inserat ändern/löschen  Microsite

http://www.anzeigenmarkt.jf-online.net/private-anzeige-aufgeben.shtml
Document Dated: Unknown
Plain Text  Word List  662 tokens, 377 types

- erläutert werden. Private Kleinanzeige aufgeben  Kontaktanzeige bitte hier klicken! Nur
- auf diesem Bildschirm auf *Anzeige aufgeben* um die Anzeige zu senden

http://www.espace.ch/marktplatz/artikel/13653/artikel.html
Document Dated: Unknown
Plain Text  Word List  374 tokens, 252 types

- espace  Immo  espace  Auto  Inserat aufgeben  Inserataufgabe  Versenden  Druckversion  Inserataufgabe
- auf

http://stellen.ch/stellensuche/main.php?mode=0
Document Dated: Unknown
Plain Text  Word List  363 tokens, 280 types

- Top-Firmen  Ausbildungsinstitute  stellen-Mail  stellen-Crawler  Stellengesuch aufgeben
- Partner/Vereinbarung  Feedback  Gesch
- arbeitgeberseite*  Stellengesuche abrufen und Inserate aufgeben und verwalten. Ref. Nr. 23208

http://welli.netfirms.com/cgi-bin/tiermarkt/fm_tierpflege.cgi?form
Document Dated: Unknown
Plain Text  Word List  82 tokens, 57 types

- Kleinanzeigenmarkt - Bereich: Tierbetreuung / Urlaubsbetreuung  Kleinanzeige aufgeben/ändern
- Name: E-Mail: Telefon: Pa
- Monate 6 Monate  8 Rubriken aufgeben - bearbeiten/löschen  Übersicht  Gesamt

http://www.webcorp.org.uk/cgi-bin/webcorp2.nm  09/07/02
Private Kleinanzeigen kostenlos aufgeben Bitte beachten Sie den Anzeigenschluss
Bevor Sie Ihre Kleinanzeige hier aufgeben, lesen Sie bitte die Bedingungen

ennen Sie direkt Ihre Kleinanzeige aufgeben, die dann im Nordkurier und
online tippen Anzeigen Grußanzeige aufgeben Kleinanzeigen aufgeben Nordkurier Anzeigenkurier
Anzeigen Grußanzeige aufgeben Kleinanzeigen aufgeben Nordkurier Anzeigenkurier Kleinanzeigen
suchen Wetter

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online tippen Anzeigen Grußanzeige aufgeben Kleinanzeigen aufgeben Nordkurier Anzeigenkurier
Anzeigen Grußanzeige aufgeben Kleinanzeigen aufgeben Nordkurier Anzeigenkurier Kleinanzeigen
suchen Wetter

Möchten Sie ein Suchabo aufgeben? Wählen Sie bitte die

Alle Angebote, Gesuche und Stellengesuche können auch als Chiffre genannt werden. Gegeben werden kann auch

Angebote Übersicht aufgeben verlängern bearbeiten löschen
schen Profisuche Infodienst Gesuche Übersicht aufgeben verlängern bearbeiten löschen
schen Profisuche Infodienst Neues Stellengesuch aufgeben Chiffre Ihr Stellengesuch kann auch
giebene werden. Gesuch als Chiffre aufgeben Bitte geben Sie Ihr login

2002, 17:03 ANZEIGEN ANZEIGE AUFGEGBEN ALLGEMEINES HERZ TRIFFT HERZ
BEKANNTSCHAFTEN
für eine unserer Zeitungen aufgeben. (Das schließt die Ver
Usinger Anzeiger können Sie aufgeben mit einem gesonderten Formular, das
Sie hier erreichen. Kleinanzeigen aufgeben BÖRSE ein Service der
http://www.masterportal24.com/cgi-bin/yindex.cgi?action=anzeigen

- Rubriken Neuzugänge Top-Anzeigen Anz. aufgeben Profisuche Aktuelle Zeit: 07/09
- mit Puretec *** Webmaster-Anzeigen > Anzeige aufgeben *** Sie können bei uns
- nennen bei uns kostenlose Anzeigen aufgeben, die im Bereich Webmaster bzw

http://www.pahlberg.de/kleinanzeigen/addad1.html

- Kleinanzeige für ein Keyboard aufgeben: Gegenstand: Beschreibung: private Angaben: Name

http://www.annonce.lu/all/post.htm

- Sie Groß- und Kleinbuchstaben beim Aufgeben ihrer Anzeige.. Benutzen Sie keine

http://www.cina.de/cina/index.php3?p=2_5_2

- Hilfe Home Service Kleinanzeigen Anzeige aufgeben Kleinanzeigen Anzeige aufgeben Sie k
- Kleinanzeigen Anzeige aufgeben Kleinanzeigen Anzeige aufgeben Sie können hier kostenlos
- kostenlos eine Anzeige im CINA-Kleinanzeigenmarkt aufgeben. Die maximale Laufzeit Ihrer Anzeige


- Artikel veröffentlichen Jobangebote Jobangebote aufgeben Jobangebote verwalten Übersicht
  Auktion aufgeben
- aufgeben Jobangebote verwalten Übersicht Auktion aufgeben Angebot erstellen (Festpreis) AGB's
  Downloads

http://www.allstudents.de/wohnen/Gesuche/insert.php

- Angebot machen Gesuche lesen Gesuch aufgeben Jobbörse Diplomarbeitsangebote Firmen-Praktika
  Gewerbe
- Angebot machen » Gesuche lesen » Gesuch aufgeben » Tipps zur Suche » Mietrecht Rund
  Studi umbeginn » Allstudents Wohnbörse Gesuch aufgeben Füllt einfach das
  untenstehende

http://www.arbeitanzeige.de/arbeitanzeige/aufgeben.asp

- Job suchen Aufgeben Verwaltung Resumes Kontakt Partnerprogramm Partner

http://www.webcorp.org.uk/cgi-bin/webcorp2.nm
**Herford Hochstift Lippe Westfalia**
*ANZEIGEN AUFGEBEN* Anzeigenannahme Bitte eine Rubrik w
bestellen Abo-Service Anzeigen lesen Anzeigen aufgeben Fundgrube Anzeigenannahme
Anzeigenschluss Preisliste Technische

**Jobs / Immobranche - Stellenangebot - Stellengesuche - Anzeigen aufgeben Veranstaltungen - Messen - Seminare - Konferenz Meine nr Baugewerbe & Immobilienwirtschaft oder Architektur aufgeben. Die Anzeigen erscheinen dann auch

**Vorzüge des Inseratekontos • Inserate aufgeben • Inserate anpassen • Inserate löschen**

**PRIVATE KOSTENLOSE KLEINANZEIGEN AUFGEBEN** Neul Jetzt können Sie
Sie Ihre Foto-Anzeigen auch online aufgeben. Online: Hier können Sie
fleißiglich im ZWEITE HAND Bootshandel aufgeben. Benutzername: Kennwort: Neuer
Kunde Zugangsdaten

**ssen eingeloggt sein, um Stellengesuche aufgeben zu können. Frankfurt-Mall Bitte
Stellenbörse Firmenliste Stellengesuche Stellengesuch aufgeben Stellenangebote von Homepage Design Seibert**

**tagesspiegel.de Anzeigen lesen Anzeigen aufgeben zitty.de Anzeigen lesen Anzeigen**
zitty.de Anzeigen lesen Anzeigen aufgeben Markt : Anzeigen aufgeben 09.07
lesen Anzeigen aufgeben Markt : Anzeigen aufgeben 09.07.2002 Immobilienmarkt Die
bei uns ein. Anzeige online aufgeben Kontakt: Fon: (030) 26 009
nicht im Internet. Gesuch online aufgeben Kontakt: Fon: (030) 26 009
Euro pro Zeile. Anzeige online aufgeben Kontakt: Fon: (030) 26 009
- 15:00 Uhr. Anzeige online aufgeben Kontakt: Fon: (030) 26 009
- 15:00 Uhr. Anzeige online aufgeben Kontakt: Fon: (030) 26 009
- Donnerstag, 10 Uhr. Anzeige online aufgeben Kontakt: Fon: (030) 26 009

http://www.treffzeit.de/anz-schnittst.html
Plain Text Word List 266 tokens, 173 types

- und Brieffreundschaften bei TREFFZEIT Anzeigen aufgeben Anzeigen suchen TREFFZEIT-Chat FAQ/Fragen
- im Internet jederzeit kostenlos Anzeigen aufgeben für Freizeit- Reise- Lebenspartner
- mit einem Fragebogen unter "Anzeigen aufgeben" oder "-suchen" an. Geben Sie

http://www.koeln.de/aktuell/kleinanzeigen/kde_form_write.cfm
Document Dated: Unknown
Plain Text Word List 260 tokens, 183 types

- Möchten Sie Kleinanzeigen... Lesen Aufgeben Bearbeiten Das Kleingedruckte 1. Vorbehalt
- 10 Zeilen à 23 Zeichen). Anzeige AUFGEGBEN Rubrik: auswählen... Workshops (47

http://www.musiker-flohmarkt.de/partner/inserrat_neu_aufgeben.htm
Document Dated: Mon, 28 May 2001 07:19:00 GMT
Plain Text Word List 57 tokens, 51 types

- Musiker. Umfangreiche Gebrauchtmarktpreisliste. Kostenlos Inserate aufgeben und lesen. Instrumente, PA- und

http://195.145.63.156/Kleinanzeigen/f_i_nhalt.htm
Document Dated: Fri, 04 Jan 2002 08:08:52 GMT
Plain Text Word List 102 tokens, 78 types

- Kleinanzeigen kostenlos aufgeben Klicken Sie hier, um zum

http://www.elbug.de/cgi-bin/df0blm/flohmarkt/anz.pl?place_ads
Document Dated: Unknown
Plain Text Word List 182 tokens, 128 types

- Anzeigen Suchen Anzeigen Optionen Anzeige aufgeben Anzeige löschen Weitere Optionen

http://www.ideaenfreiheit.de/such_an.php3
Document Dated: Unknown
Plain Text Word List 176 tokens, 126 types

- such-annonce aufgeben IDEEN Ideen einsehen idee anbieten
- anbieten SUCH-ANNONCEN such-annoncen einsehen such-annonce aufgeben THEMEN UND ARGUMENTE themen einsehen
- Sie eine Such-Annonce bei Ideenfreiheit aufgeben. Wir veröffentlichen die Annonce

http://www.crmforum.de/job/mitarbeitersuche_2.html
Document Dated: Unknown
Plain Text Word List 149 tokens, 133 types

http://www.webcorp.org.uk/cgi-bin/webcorp2.nlm

09/07/02
CRM Forum Jobbörse: Stellenangebot aufgeben

Die einzigen Felder, die Sie
aufgeben Frage an
Stellengesuche ansehen aufgeben Stellenangebote ansehen
aufgeben Frage an den webmaster@crmforum

http://www.webliebe.de/regeln.htm
Document Dated: Mon, 11 Feb 2002 03:49:46 GMT
Plain Text Word List 447 tokens, 270 types

• kostenlos eine oder mehrere Kontaktanzeigen aufgeben. (Bitte kein Spam) Hier wird

http://stellen.ch/arbeitgeber/main.php3?mode=1
Document Dated: Unknown
Plain Text Word List 266 tokens, 212 types

• arbeitgeberseite* Stellengesuche abrufen und Inserate aufgeben und verwalten. Ref-Nr.19217:
  Beratung
• Debirenten-und oder Kreditorenbuchhaltung Angebot Stelleninserat aufgeben
  Hervorgehobene Stellen Werbung auf stellen

http://www.sgipt.org/hm/hm_aufge.htm
Document Dated: Tue, 04 Jun 2002 13:41:04 GMT
Plain Text Word List 982 tokens, 504 types

• 18.03.2001 Anfang HM aufgeben Überblick Rel. Aktuelles Rel. Best
• Psychotherapie, hier: Das psychologische Heilmittel Aufgeben J 1) aufgeben Übersicht Heilmittellehre
• psychologische Heilmittel Aufgeben J 1) aufgeben Übersicht Heilmittellehre und Heilmittel-
  Monographien Literaturhinweis
• Das psychologische Heilmittel J 1) Aufgaben (1) Bedeutungsbereich (Ziele, Pläne
• Absichten, Wünsche, Bedürfnisse): aufgeben; verzichten; loslassen; lassen; gewähren
• jene Weise geht. (2) Indikation. Aufgeben oder verzichten ist ein sehr
• nichts schief geht (Paradoxie/neurose'). Nicht aufgeben bedeutet in einem solchen Fall
• 1 Ziel/Object endgültig aufgeben 3.2 Neue Ziele/ Objekte
• Rudolf Sponsel (DAS ). Das Heilmittel aufgeben. Internet Publikation für Allgemeine
• Erfangen als akzeptiert. Ende HM Aufgeben HM aufgeben Überblick Rel. Aktuelles
• akzeptiert. Ende HM Aufgeben HM aufgeben Überblick Rel. Aktuelles Rel. Best

http://www.echonews.de/service/kleinanzeigen/
Document Dated: Unknown
Plain Text Word List 244 tokens, 134 types

• Chat Kinofilme Autotest Sportkommentar Anzeige aufgeben Wetter KLEINANZEIGE AUFGEBEN * Sie
  haben
• Sportkommentar Anzeige aufgeben Wetter KLEINANZEIGE AUFGEBEN * Sie haben 6 Möglichkeiten

http://welli.netfirms.com/cgi-bin/tiermarkt/fm_vogel.cgi?form
Document Dated: Unknown
Plain Text Word List 103 tokens, 68 types

• Hosting Kleinanzeigenmarkt - Bereich: Vogelmarkt
  Kleinanzeigen aufgeben/ändern Name: E-Mail:
  Telefon: Pa
• Monate 6 Monate 22 Rubriken aufgeben - bearbeiten/löschen Übersicht Gesamt
http://www.yabb.de/cgi-bin/kleinanzeigen/kleinanzeigen.cgi?form
Document Dated: Unknown
Plain Text Word List 91 tokens, 79 types

- Berlin Brandenburg Landkarte Eintragen Ansehen Aufgeben Chatroom History Impressum
  Copyright Kontakt
- Kleinanzeigen aus der Region Kleinanzeige aufgeben/ändern Name: E-Mail: Telefon: Passwort
- Monat 2 Monate 22 Rubriken aufgeben - bearbeiten/löschen Übersicht zum

http://www.jobonline.de/gesuche/gesAnzeigeInfo.asp
Document Dated: Unknown
Plain Text Word List 169 tokens, 119 types

- Berufsfield - Sortieren nach Regionen Stellengesuche aufgeben/verwalten Sie arbeiten zur Zeit

http://www.immoclick.ch/index.cfm?page=351
Document Dated: Unknown
Plain Text Word List 282 tokens, 212 types

- Suchabo Favoriten Suchtipps Suchabo Suchabo aufgeben Suchabo verwalten Rund ums Suchabo
- ums Suchabo Top Services Inserat aufgeben Suchabo aufgeben Favoriten verwalten AVIS
- Top Services Inserat aufgeben Suchabo aufgeben Favoriten verwalten AVIS Online
  Mietwagenbuchung
- NZZ Publicitas Zisch Sunrise Suchabo aufgeben Ein Gratis-Dienst, der es in
  Möchten Sie ein Suchabo aufgeben? Wählen Sie bitte die

http://www.students.ch/jobs/page_angebot.php
Document Dated: Unknown
Plain Text Word List 431 tokens, 237 types

- Teilzeitstellen Praktika Absolventenstellen Inserat aufgeben Stelleninserate auf Students.ch Wir
  rfnissen können Sie Einzelinserate aufgeben oder ein Abonnement für

http://www.zilty.de/zilty-db/klein/
Document Dated: Unknown
Plain Text Word List 497 tokens, 312 types

- tagesspiegel.de Anzeigen lesen Anzeigen aufgeben zilty.de Anzeigen lesen Anzeigen
  zilty.de Anzeigen lesen Anzeigen aufgeben Kleinanzeigen aufgeben 09.07.2002
  Anzeigen lesen Anzeigen aufgeben Kleinanzeigen aufgeben 09.07.2002 Zitty Kleinanzeigen

http://www.freiepresse.de/TEXTE/ANZEIGEN_UND_BLAUE_BOERSE/ANZEIGEN_AUFGEGBEN/
Document Dated: Unknown
Plain Text Word List 270 tokens, 200 types

- Registrierung . Registrierte Kunden Kontakt Anzeige aufgeben - Anzeigentyp wählen Welche Art
  Art von Anzeige wollen Sie aufgeben? private Anzeige gewerbliche Anzeige Grund

http://anzeigen1.nordbayern.de/aufgabe/
Document Dated: Unknown
WEBBETRÄGER Anzeige aufgeben ISDN-Technik Markt und Daten Preisliste
- KFZ-Markt] [Heiraten + Bekanntschaften] [Wohnungsmarkt] Anzeige aufgeben für die Gesamtausgabe NN
- E N E S Anzeige aufgeben für den Nürnberger
- I V A T Anzeige aufgeben für den SonntagsBlitz

http://www.taz.de/pt/etc/nf/anzeigen/kleinanzeigen
Document Dated: Tue, 09 Jul 2002 15:02:39 GMT
Plain Text Word List 563 tokens, 168 types
- schalten Kleinanzeigen Preise & Konditionen Anzeige aufgeben Gestaltete Anzeigen Preisliste im PDF-Format
- mal 20 % Anzeigen-Coupon Anzeige aufgeben Ausgabe Berliner Lokalteil (Lokalprärie
- mal 20 % Anzeigen-Coupon Anzeige aufgeben Ausgabe Lokalteil Bremen inserieren erscheint
- mal 20 % Anzeigen-Coupon Anzeige aufgeben Ausgabe Lokalteil Hamburg inserieren erscheint
- mal 20 % Anzeigen-Coupon Anzeige aufgeben taz Verlags- und Vertriebs-GmbH, Kochstra

http://www.palminfo.de/cgi-bin/boerse/fm_palm.cgi?form
Document Dated: Unknown
Plain Text Word List 227 tokens, 177 types
- PDA-Software #1 Rubrik: Palm-Organizer Kleinanzeige aufgeben/ändern Name: E-Mail: Telefon:
- Monat 2 Monate 3 Rubriken aufgeben - bearbeiten/löschen Übersicht Top-Angebot

http://www.swutsch.de/root/home_KA_submit.php
Document Dated: Unknown
Plain Text Word List 160 tokens, 123 types
- eintragen Verein/Einrichtung eintragen Termin aufgeben Leserbrief schreiben Kleinanzeige aufgeben Homepage
- Termin aufgeben Leserbrief schreiben Kleinanzeige aufgeben Homepage eintragen > SERVICE F
- Sie ihre kostenlose private Kleinanzeige aufgeben. Damit das Inserat im n
- bis zum 15. des Vormonats aufgegeben. Ihr Name: Ihre Mailadresse: Rubrik
- bis Z Ihre Daten Kleinanzeige aufgeben Newsletter Regio-Suchmaschine WAP Chat Livestatistik

http://www.station.de/kleinanze.htm
Document Dated: Fri, 05 Jul 2002 17:13:38 GMT
Plain Text Word List 429 tokens, 294 types
- nen Sie leider keine Kleinanzeige aufgeben. Aktivieren Sie JavaScript in Ihren

Document Dated: Unknown
Plain Text Word List 161 tokens, 123 types
- Artikel veröffentlichen Jobangebote Jobangebote aufgeben Jobangebote verwalten Übersicht Auktion aufgeben
- aufgeben Jobangebote verwalten Übersicht Auktion aufgeben Angebot erstellen (Festpreis) AGB's Downloads
- com > it-Jobs > Jobangebote aufgeben Um Stellenangebote aufzugeben benötigen
- Sie öffentliche und private Ausschreibungen aufgeben. Wenn Sie eine Ausschreibung aufgeben
- aufgeben. Wenn Sie eine Ausschreibung aufgeben wollen, achten Sie bitte auf
- öffentliche Ausschreibung Ausschreibungen anzeigen Ausschreibung aufgeben Registrierung +
Preise Probezugang Mitglieder Unternehmen

- Abobestellung Aboservice Mediadaten Insertionspreise Inserate aufgeben Ostschweizer-Agenda
Wandertipp im Appenzellerland Br
- Ihr aktueller Standort: Inserate > Inserate aufgeben Direkter Insertions-Link Jetzt neu Inserieren
- Rund um die Uhr Inserate aufgeben: Schnell, einfach und effizient. Copyright
WebCorp Output - "aufgeben"

- Startseite Registrieren Inserat aufgeben Login Suchen Elternforum - Tauschzentrale Userid

http://www.hogrefe.de/PsychJob/user/anz_newf.php
Document Dated: Unknown
Plain Text Word List  230 tokens, 153 types

- Angebote Übersicht aufgeben verlängern bearbeiten löschen
- schen Profisuche Infodienst Gesuche Übersicht aufgeben verlängern bearbeiten löschen
- noch nicht erfolgt) Neues Stellenangebot aufgeben Chiffre Ihr Stellenangebot kann auch
- gegeben werden. Anzeige als Chiffre aufgeben Bitte geben Sie Ihr Login

http://www.winzip.de/order.htm
Plain Text Word List  404 tokens, 224 types

- Page Allgemeine Informationen Neuigkeiten Bestellung aufgeben Testversion herunterladen Upgrade
herunterladen Zusatzprogramme

http://www.hannover-singles.de/gefunden.html
Document Dated: Unknown
Plain Text Word List  181 tokens, 129 types

- inner Frauen suchen Frauen Anzeige aufgeben Die neuesten Zwanzig Sympathie? Meine

http://www.pro-wohnen.de/inserat_aufgeben.htm
Document Dated: Mon, 28 Jan 2002 09:46:38 GMT
Plain Text Word List  679 tokens, 421 types

- Information Anmeldung 1 Vermieten Inserat aufgeben Information i Pro-Wohnen Wir über
- nnen Ihr Inserat auch telefonisch aufgeben. 040-398897-11 Die mit (*) gekennzeichneten Daten
- nnen Ihr Inserat auch telefonisch aufgeben. Pro-Wohnen Hamburg 040-398897-11 Haben Sie

http://www.firmenverzeichnis.org/cgi-bin/kleinanz/anz.cgi?place_ads
Document Dated: Unknown
Plain Text Word List  206 tokens, 149 types

- Anzeigen Suchen Anzeigen Optionen Anzeige aufgeben Anzeige löschen Weitere Optionen

http://www.raging-online.de/gmm/html/suchen.htm
Plain Text Word List  210 tokens, 165 types

- Suchanzeige aufgeben Sie suchen nach einer gebrauchten

http://www.pahlberg.de/kleinanzeigen/added.html
Document Dated: Fri, 05 Jul 2002 11:10:16 GMT
Plain Text Word List  119 tokens, 99 types

- Klavier oder einen Flügel aufgeben : Gegenstand: Beschreibung: private Angaben: Name

http://www.webcorp.org.uk/cgi-bin/webcorp2.nm
09/07/02
WebCorp Output - "aufgeben"

Document Dated: Tue, 09 Jul 2002 16:07:17 GMT
Plain Text Word List 301 tokens, 196 types

- Angebote ansehen Gesuche ansehen Angebot aufgeben Gesuch aufgeben Ihr Stellenangebot in
- Gesuche ansehen Angebot aufgeben Gesuch aufgeben Ihr Stellenangebot in der MedizInfo
- präsentiert: Stellenangebote Stellengesuche Stellenangebot aufgeben Stellengesuch aufgeben
- Stellenangebote dazu zeigen Stellenangebote Stellengesuche Stellenangebot aufgeben Stellengesuch aufgeben Stellenangebote
dazu zeigen Stellengesuche dazu

http://www.berufsstart.de/angebot/index-a.html
Document Dated: Sat, 12 Jan 2002 16:53:55 GMT
Plain Text Word List 452 tokens, 235 types

- Angebote aufgeben Für Unternehmen: Wissenswertes (bitte

http://www.fluesterecke.de/cgi-bin/flohmarkt-aufgeben.cgi?Action=AddAd
Document Dated: Unknown
Plain Text Word List 274 tokens, 200 types

- Charts USA Flohmarkt Übersicht Anzeige aufgeben Anzeige löschen AGBs Home

http://www.wander.ch/cgi/de/shop/order/index.asp
Document Dated: Unknown
Plain Text Word List 178 tokens, 131 types

- deutsch francis Sortiment Warenkorb Bestellung aufgeben Promotions-Code Bedingungen Mein Profil Kundendienst

Document Dated: Unknown
Plain Text Word List 194 tokens, 147 types

- Hilfe Home Service Stellenmarkt Anzeige aufgeben Stellenmarkt Anzeige aufgeben Sie haben
- Stellenmarkt Anzeige aufgeben Stellenmarkt Anzeige aufgeben Sie haben ein Stellenangebot oder

http://www.derwaldviertler.at/anzeige-neu.asp
Document Dated: Unknown
Plain Text Word List 270 tokens, 196 types

- Wohnen Freizeit Veranstaltungen Horoskop Kleinanzeigen aufgeben Wald4tler Freizeitjournal Tourismus Auto & Verkehr
- Bauen & Wohnen Veranstaltungen Kleinanzeigen Kleinanzeige aufgeben Waldviertler Freizeitjournal
- 2000 Tourismus Ärztedienste

Statistics

Using the Google search engine WebCorp accessed 120 web pages, 7 of which returned errors.
195 concordances were generated.

Thank you for using WebCorp.
Please provide us with your feedback on the tool.

Output produced 9/7/2002 4:06 P.M.
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[Withdrawn on 26.10.2000 and replaced by:
http://www.iso.ch/iso/en/ISOOnline.frontpage

[Withdrawn on 01.04.1990 by the Technical Committee/Subcommittee: ISO - TC 37 Terminology and Other Language Resources]
http://www.iso.ch/iso/en/ISOOnline.frontpage


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WEBSITES

Dictionaries & Glossaries

Systematic Dictionary of Corpus Linguistics
Centre of Computational Linguistics, Vytautas Magnus University, Lithuania
http://donelaitis.vdu.lt/
  •  http://donelaitis.vdu.lt/publikacijos/SdoCL1.htm

Encarta World English Dictionary
http://dictionary.msn.com/

Free On-Line Dictionary of Computing
http://wombat.doc.ic.ac.uk/foldoc/index.html

NSNet Maritime Glossary
http://www.nsnet.com/glossary/

Random House Webster's College Dictionary
http://www.funkandwagnalls.com/dictionary

Yourdictionary.com
http://www.yourdictionary.com/cgi-bin/mw.cgi

Encyclopaedias & Lexicons

Brantacan
http://www.brantacan.co.uk/index.htm
  •  http://www.brantacan.co.uk/bridges.htm
  •  http://www.brantacan.co.uk/beam.htm
  •  http://www.brantacan.co.uk/arch.htm
  •  http://www.brantacan.co.uk/suspension.htm
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Encarta
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http://www.funkandwagnalls.com/encyclopedia/

How Stuff Works
http://www.howstuffworks.com/
- http://www.howstuffworks.com/bridge2.htm

Kleines Seemannslexikon
http://mitglied.tripod.de/WKernchen/index.html

Maritimes Lexikon
http://www.nsnet.com/
http://www.modellskipper.de/lexikon/maritim/

Starfleet Database Central Europe
http://sdce.de
- http://sdce.de/lexicon/
WEBSITES

Linguistic Tools
System Quirk (University of Surrey)
http://www.mcs.surrey.ac.uk/SystemQ/

WebCorp (University of Liverpool)
http://www.webcorp.org.uk/webcorp.html

Wortschatzlexikon (University of Leipzig)
http://wortschatz.uni-leipzig.de/

Miscellaneous

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http://www.bridgebuildermagazine.com/

Bridge Types
http://www.matsuo-bridge.co.jp/english/bridges/basics/index.shtm

Kinds of Bridges
http://www.media.uwe.ac.uk/masoud/projects/bridges/bridges.htm

Naval Technology
http://naval-technology.com/index.html

Preveze
http://www.preveze.com
Starfleet Database Central Europe

http://sdce.de
- http://sdce.de/lexicon/

Startrek Library

http://startrek.com/

Warships

http://www.warships.co.uk

Other:

http://geocities.com/Pentagon/Barracks/7817/

http://www.cooklib.org/genrefer.htm

http://www.klabautermann.de/links/

http://www.termisti.refer.org/nauterm/nauten.htm


http://w2.xrefer.com/

http://www.facstaff.bucknell.edu/rbeard/diction.html

Search Engines

AltaVista

http://www.altavista.com/

Dogpile

http://www.dogpile.com/info.dogpl/
WEBSITES

Fireball
http://www.fireball.de/

Google
http://www.google.com/

Infoseek
http://infoseek.go.com/

Lycos
http://www.lycos.com/

Yahoo
http://www.yahoo.com/