

**The General Theory of Terminology: A Literature
Review and a Critical discussion**

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Resumé

Dette speciales formål er at undersøge, hvorvidt den generelle terminologilære repræsenterer terminologi som en uafhængig videnskabelig disciplin. Diskussionen tager udgangspunkt i den terminologiske teori grundlagt af E. Wüster der i sin bog *Einführung in die Allgemeine Terminologielehre und Terminologische Lexikographie* (1979) beskriver den teoretiske side af terminologisk arbejde. Teorien er blevet kritiseret meget af eksperter såsom Kageura, Cabré, Temmerman, m.fl. fordi den ikke er i stand til at afgrænse terminologi klart fra andre relaterede discipliner såsom sprogvidenskab, anvendt sprogvidenskab, leksikografi og fagleksikografi og ikke tager højde for alle aspekter som udgør terminologi i dens helhed. Diskussionen i specialet fokuserer på to af teoriens mest kritiserede karakteristiske træk: relationen mellem begreb og term og relevansen af syntaks – sætningslære – i terminologi. Specialet undersøger om begrebet virkelig spiller en overordnet rolle som fastlagt i den traditionelle teori og om syntaks er relevant for terminologisk arbejde.

Yderligere diskuteres fordele og ulemper ved fagleksikografi, en forholdsvis ny disciplin, hvis metode muligvis virker nemmere i tilgangen end terminologiens metode. Diskussionen i specialet er en litteraturevaluering som bygger på teorier fra terminologi, sprogvidenskab, anvendt sprogvidenskab, semantik, leksikologi, fagleksikografi, kognitionsvidenskab og kommunikationsteori og støtter sig til ideer og teser af Eugen Wüster, Kyo Kageura, M. Teresa Cabré, Ferdinand de Saussure, Henning, Bergenholtz, m.fl.

Der vurderes at både begreb og term mangler en tilstrækkelig teoretisk definition og at termen burde præsenteres som overordnet til begrebet fordi den udgør

forbindelsen mellem terminologiens forskellige arbejdsniveauer – det kognitive niveau, det sproglige niveau og det kommunikative niveau.

Endvidere findes det at sætningslæren udgør en vigtig del af det terminologiske arbejde fordi den muliggør benævnelse, udfærdigelse af definitioner, repræsentering af termer i kontekst mv.

Sammenligning mellem terminologi og fagleksikografi tydeliggør at begge discipliner er meget forskellige med hensyn til effektivitet, arbejdsmetoder, dækningsgrad og makrostruktur. Fagleksikografi kan således ikke anses som en erstatning for terminologi.

Dette speciales diskussion har relevans fordi terminologi på den ene side har berettigelse i at betragtes som en selvstændig videnskab fordi dens arbejdsmetoder og mål er enestående, men på den anden side mangler en fuldstændig teori. Det vil således være fremtidens opgave: at skabe en terminologiteori som tydeligt afgrænser terminologi fra andre discipliner og tager højde for alle dens principper.

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Introduction

Indications for the significance of termini can be found as early as in the middle ages. One example is the work of the famous Toledo translation school where great parts of the literature of classical antiquity were translated. Both translations and comments made by the translators illustrate the terminological difficulties the workers had to face. The importance of termini as a tool to enable specialised communication had been discovered. Professionals were aware of the fact that the organisation and systematisation of these tools of communication was one of the weak points of specialised communication. Sciences and their special languages had originated without coordination or other forms of intervention: the result was a chaos of concepts, concept systems and their corresponding designations.

In the 18th century, a number of scientists started to systematically coordinate the termini within their special fields and thereby created the basis for the later development of terminology. One of them was Carl von Linné (1707-1778). His work *fundamenta botanica* (1736), based on a concept system structure and rules for the assignment of designations, can be regarded as the first coordinated and systematised terminology of botany. There are also other examples of practical terminological products of that time. A theoretically oriented approach towards terminology, however, began no earlier than in the 20th century. This development was triggered by the Austrian E. Wüster and the new perception that terminology was twofold: one side was occupied by systematised concepts of a specific subject area, whereas the other belonged to the designations. Thus, terminology work could be allocated to the sphere of competence of linguistics as well as to the domain of the individual subject areas. It became more and more apparent that terminology was in

need for an independent discipline – a terminology science or general theory of terminology. Wüster's last work *Einführung in die Allgemeine Terminologielehre und Terminologische Lexikographie* (1979) became the most comprehensive account of the terminology theory. It was an attempt to explain terminology both with respect to its theory and method.

Today, thirty years after Wüster's death, it still constitutes the basis for most theoretical approaches towards terminology. However, Wüster's work has been criticised by many specialists in the area as it did not succeed in representing terminology as an independent discipline. Researchers such as Cabré, Kageura, Temmerman, et al., claim that the rules and principles constituting the theory are not original to terminology and therefore fail to delineate it from related fields, such as lexicography, semantics and linguistics. Others, such as Bergenholtz and Tarp, concentrated on the development of other closely related fields, such as specialised lexicography, as it seems easier accessible than terminology.

Nevertheless, there are many researchers in the field who believe terminology should be an autonomous discipline. It will be a task of the future to develop the principles of the traditional theory in such a way that they are original to terminology, exhaustive with respect to coverage and accounting of both its conceptual side and communicative side.

1. Problem

Many people still see terminology as a fringe science, an interdisciplinary science located somewhere between linguistics, logic, ontology, informatics and special branches of science. While supporters of terminology as an independent discipline state that terminology provides all conditions to be regarded as a proper science, critics claim that terminology lacks the very foundation of a science: an autonomous theory and methodology that is independent of other scientific disciplines. For several centuries, terminology has only existed as a sub-discipline to other sciences such as zoology, chemistry or engineering. From the 1930s until today however, many attempts have been undertaken to form a theory of terminology. As the result, a general theory of terminology has been developed. Unfortunately, this general theory is far from perfect, as it contains certain irregularities, i.e. when it comes to the relationship between concepts and terms or the relevance of syntax to terminologists. Additionally, it features a number of restrictions, i.e. it does not take into account cognitive, linguistic, communicative and other aspects that are relevant to terminology. Due to this lack of competence, new and emerging fields, such as specialised lexicography, jeopardise the significance of terminology as an autonomous field and may redundantise it in the future.

In this master thesis, the characteristics of the general theory of terminology will be examined and discussed. In particular it will be examined to which extent it is sufficient to represent terminology as an independent discipline. In order to achieve this, the following sub questions will be answered in this thesis:

- The relationship between concepts and terms plays an important role in terminology as concept is seen as the cornerstone of the general theory of

terminology and the starting point of any terminology work. The concept-term relation is characterized by a natural precedence of concepts over terms. Why is this and do concepts really precede over terms?

- The general theory of terminology claims that the rules of syntax are not relevant to terminologists. Is this assumption true or wrong?
- Due to certain characteristics, the field of specialised lexicography may appear easier accessible than the field of terminology. Based on five theses by Bergenholtz, specialised lexicography will be challenged with respect to efficiency, expert type, working methods, field coverage and macrostructure. Will specialised lexicography supersede terminology one day?

The interest in this subject is based on the conviction that terminology should be regarded as an independent discipline. However, one has to be aware of the fact, that the existing theory of terminology does not sufficiently comprise all aspects of terminology and therefore cannot represent terminology as a discipline of its own. Thus, the aim of this work is to provide new impulses for the research on terminology theory to contribute to the further development of a proper theory of terminology.

2. Method

The purpose of this work is to challenge the traditional theory of terminology with regard to the principles of concept and term, the relationship between concept and term, the role of syntax in terminology work and the interrelation between terminology and specialised lexicography.

The research of this thesis is based on literature studies. In particular the ideas of the Austrian E. Wüster (1898-1977) will be investigated. Wüster originally came from the field of engineering and is seen as the founder of the general theory of terminology. His general theory is based on the following five main principles:

- In terminology, the onomasiological approach is applied (terminology studies concepts before terms);
- Concepts are strictly delineated from each other and can be placed in a concept system;
- Concepts are to be defined in a traditional definition;
- A term is assigned permanently to a concept;
- And terms and concepts are studied synchronically.

To a limited extent, some of these principles will be discussed in order to investigate whether they live up to the claims towards a proper theory on terminology. This is relevant as there are many critical voices when it comes to the recognition of the general theory as a proper theory of terminology. Researchers, such as M. Theresa Cabré, Kyo Kageura, Juan Carlos Sager, Rita Temmerman, et al., state that the general theory does not represent a sufficient basis for an independent theory and has to be developed further.

Firstly, this work will concentrate on the principles of concept and term that are of fundamental importance to terminology. As criticised by many researchers, neither the principle of concept nor the principle of term are properly defined and explained. According to the definition by Felber (1984), concept is represented “as the cornerstone of the general theory consisting of an aggregate of characteristics which themselves are concepts”. Here, the criticism by Kageura (2002) will be used claiming that this definition is insufficient and falls far short the current theories of concepts in linguistics.

Principles from cognitive theory will be used, inspired by Fodor (1975) and Jackendoff (1990), to discuss the components that are missing in terminology theory concerning the principle of concept.

With regard to terms it will be asserted that their significance is undervalued by the theory and that their representation is poor and to some extent incorrect.

Figures by Gomperz, Ogden, Baldinger, Wüster and Richards will be applied to illustrate the correlation of concept and term as assumed so far.

The ideas of the Swiss linguist Saussure concerning the correlation between the language system (=langue) and the language in use (=parole) are extremely helpful to demonstrate that the ultimate function of terms is to link these two spheres together and to enable communication. Then a new figure will be created to better illustrate the function of terms and the correlation between concepts and terms and how they are linked to communication.

Concerning the concept-term relation it will be criticised that the general theory simply declares the privileged relationship between concept and term without further argument, along with the precedence of concepts over terms. Irregularities in the statements made by Felber (1984) will be pointed out. An assumption by Kageura (2002) is applied claiming that simply by rejecting to provide a proper definition, the

concept-term relationship cannot be differentiated from the relationship between meaning and word in semantics.

Then the principle is questioned claiming that only the onomasiological approach is relevant to terminology. Assisted by J.F.Sowa's (1993) assumption saying that concept is dependent on culture, a condition is discussed where the argument that every terminology work starts with concepts no longer can be applied.

Secondly, this thesis will concentrate on the claim that only the terms of concepts are of relevance to terminology, while the rules of syntax are not. It starts out by representing terminology in greater context: as a branch of applied linguistics and general linguistics from which it borrows some of its own concepts and principles. It is criticised that terminology has no clearly delineated theory and thus is not legitimated to exclude rules such as syntax without justification.

Quotes from Cabrés work *Terminology. Theory, methods and applications* are used to illustrate the different functions of terms and to discuss terms as language units, as part of the lexicon, as vehicles of communication and as cognitive elements. On the basis of these examples it will be determined whether syntactic rules are relevant to terminology.

Finally, the question will be addressed whether terms belong to the realm of parole, as claimed by Kageura, or to the language system, as affirmed by Wüster. To illustrate the distinction between langue and parole, Saussure's economic analogy will be applied. Saussure's economic analogy is taken from Saussure; *Cours de linguistique générale* and interpretations of this analogy are taken from Harris; *Reading Saussure*.

Irrespective of the outcome of this investigation it can be argued that in either case the rules of syntax are of relevance. Syntax belongs to the theory of the language

system, but the actual distribution of syntactic rule in terminology, as argued by Kageura, belongs to the realm of parole.

In a third complex, terminology and specialised lexicography will be compared based on five theses by Bergenholtz/Tarp. The intention is to investigate if terminology is at risk of being superseded by specialised lexicography in the future. The five theses comprise efficiency, expert type, working methods, field coverage and macrostructure of LSP lexicography and will be confronted with the corresponding characteristics of terminology. The outcome will be an account of the resemblances and discrepancies of terminology and LSP lexicography and of the question if LSP lexicography can become a real alternative to terminology.

3. Delimitation

In this work I will examine the general theory of terminology in order to investigate to which extent it is sufficient to represent terminology as an independent discipline. The intention is to improve this theory and to supply new impulses to the development of a proper terminology theory.

Although the main focus is on the general theory, it is beyond the scope of a master thesis to describe and improve *all* of its characteristics. A brief introduction to its history, characteristics and working methods is given. The discussion is restricted to the examination of the relationship between concept and term and the role syntax plays in terminology. Further, some of its characteristics are compared to specialised lexicology.

There is no room for a detailed discussion of the question whether terminology is *dependent* on linguistics, logic, ontology, informatics and special branches of science. However, the question will be addressed to what extent terminology has *borrowed* certain aspects of linguistics, applied linguistics, cognitive science and communication theory. Also the interaction between terminology and linguistics, applied linguistics, specialised lexicography, cognitive science and communication theory is examined.

Further, this work is restricted to the theoretical approach towards terminology. Consequently, no examples of a practical approach towards terminology are given, i.e. no concept system of a specified area will be presented.

4. Theory

Many researchers regard terminology as an interdisciplinary field in science. They claim that terminology is a discipline whose definition is based on other scientific fields, such as semantics, from which it borrows specific sets of concepts. In an attempt to represent these rules as appendant to terminology, they were adjusted to the needs of this field. However, in many cases these adjustments are not based on scientific ground, as can be seen at the example of the unsatisfactory definition of the concept-term relationship. The general theory of terminology – to this day the basis for any scientific discussion of terminology – has not been able to represent terminology as an independent discipline. Several points, such as concepts and terms or the role of syntax are dealt with in an almost unprofessional way and several explanations and definitions display irregularities, if not flaws.

The circumstance that terminology cannot be accepted as a discipline of its own does not derive from the fact that it borrowed rules from other scientific fields. The problem is that after having chosen relevant concepts and elements from other fields, the general theory has failed to properly adjust them to the needs of terminology. It has failed to explain the changes made of principles e.g. taken from semantics. As an example, instead of merely claiming that the relationship of concept and term is different to the relationship of meaning and word, it should explain *why* it is different and present a proper definition of concept and term. The general theory is a good start on the way towards a satisfying terminology theory but there is still a lot of work to be done. In order to participate in a positive development of the general theory, this thesis will highlight some of the insufficiencies and try to give incentives to improve them.

The research will be based on the following theories¹:

- General theory of terminology
- General linguistic semantics
- Linguistics and applied linguistics
- Lexicology / Lexicography
- Specialised lexicography (LSP lexicography)
- Cognitive science
- Communication theory

4.1 General theory of terminology

The general theory of terminology is based on the significance of concepts and their delineation from each other. The nature of concepts, conceptual relations, the relationship between terms and concepts and the designation of terms to concepts are of prime importance. The sphere of concepts is seen as independent from the sphere of terms. As concept is given natural predominance over terms, terminology work always starts with the concepts and is working its way from concepts to terms. This focus on moving from concepts to terms distinguishes the methods used in terminology from those used in lexicography. Lexicographers start with the word and explain the meaning of it, whereas the aim of terminographers is to assign names to already existing concepts.

However, some of the statements made by the general theory are more than dubious. The problem is that none of its claims with regard to the concept-term relationship are science-based and that other arguments, such as the one saying that syntax is not relevant to terminology work, are simply not true.

¹ The theories are represented with respect to their relevance for terminology. Thus, it cannot be regarded as a full account of these disciplines.

First of all, when it comes to the description of concept and term, the general theory displays astounding naivety. If one expects a scientific account of the meaning, formation and relation of concept and term, he will be pretty disappointed. The principles of concept and term are not explained scientifically. On the one hand, concept is simply presented as the cornerstone of any terminology work but on the other hand, it is not equipped with satisfactory substance to prove this preferential position. Terms are not represented scientifically at all and are misconceived in their importance for terminology and misinterpreted in the role they play in the concept-term relation.

Another problem is that although the general theory has always been keen to distinguish terminology from semantics, arguments supporting this differentiation are restricted to the statement that the relationship between concept and term is unequal to the relationship between meaning and word. The general theory does neither explain *why* it is different nor does it properly define the relationship of concept and term as it is provided in semantics with regard to the relationship between meaning and word.

Further, to clearly distinguish terminology from lexicography, the general theory claims that unlike in lexicography whose methodology is based on the semasiological process, in terminology the working process is onomasiological. However, there are cases where the onomasiological approach cannot be applied, even in terminology work.

Another problematic principle of the general theory is the statement that the rules of syntax are not relevant to terminologists. This cannot be accepted, as in many ways terminology makes use of syntax.

4.2 General linguistic semantics

The general theory of terminology is significantly influenced by general linguistic semantics. In semantics, the role of meaning and word is of equal significance as the role of concept and term in terminology. While in semantics the relationship between meaning and word is clearly defined, the traditional theory of terminology provides no explanation of the formal relationship between concept and term. In this way, the concept-term relationship may appear essentially different from the relationship between meaning and word in semantics. However, simply by refraining from providing a sound definition, the general theory cannot prove that in this point it differs from general linguistic semantics and that the relationship between concept and term is not formally equivalent to the relationship between meaning and word.

Regarding the description of concept, the general theory does not differ much from the description of meaning in general linguistic semantics. The descriptive structure of concepts in the general theory, i.e. a bundle of characteristics, is the same as a simple descriptive structure of meanings, i.e. a bundle of semantic features. The complexity of conceptual structures described so far in the studies of terminology does not exceed the complexity of semantic conceptual structures established in non-terminology-related studies.

Based on the descriptions provided by the general theory, we cannot distinguish conceptually-oriented descriptions of domain-dependent terms from semantically-oriented descriptions of words. What researchers within terminology are doing appears to be no different from what researchers are doing with lexical semantics.

4.3 Linguistics and applied linguistics

The scientific field of linguistics is very complex and hard to compass. It can be divided into an endless number of sub-fields and related fields. Just to mention a few of them, the list of linguistics comprises theoretical linguistics, descriptive linguistics, historical linguistics, comparative linguistics, cognitive linguistics, computational linguistics, structural linguistics, text linguistics, systemic linguistics, synchronic linguistics, diachronic linguistics and many more (Davies, 1999:5). The linguistic theory includes the structural components of a language, morphology (properties of words and word-building rules), phonetics and phonemic transcription (physiology involved in the production of speech sounds as well as phonemic and phonetic transcription systems that are used to represent sounds), phonology (organisational principles that determine the patterns the speech sounds are subject to), syntax (presents a study of the structure of sentences and phrases), semantics (properties of linguistic meaning), language variation (ways speakers and groups of speakers can differ from each other in terms of the various forms of language that they use) and language change (how languages change over time and how languages can be historically related).

Theoretical linguistics builds the foundation for all branches of linguistics. Its core is a highly abstract study which attempts to develop a formal grammatical model applicable to all languages and at all stages of language development without regard to any practical applications that the investigation of language and languages might have.

Applied linguistics on the contrary, has as its concerns the application of the concepts and findings of linguistics to a variety of practical tasks.

As in practice there is little difference made between the terms 'theoretical linguistics' and 'general linguistics', it is taken for granted by most of those who use the term

'theoretical linguistics' that the goal of theoretical linguistics is the formulation of a satisfactory theory of the structure of language in general.

As far as applied linguistics is concerned, it is clear that it draws on both the general and the descriptive branches of the subject (Lyons, 1981:34). What links most linguistic sub-disciplines together is that they all start from theoretical linguistics, some closer and some further away, but all recognising the guiding ideas of linguistic theory and accepting that they all share a common purpose, which is to further that theory. Many linguists argue that applied linguistics is just another area, another part of linguistics. Other experts deny this assumption. It is true that in the case of applied linguistics the overall goal is not the furthering of linguistic theory. However, also applied linguistics starts from theoretical linguistics and applies the concepts and principles established by this theory.

Accordingly, applied linguistics has as its concern the application of the concepts and findings of linguistics to a variety of practical tasks. Its scope is extremely broad, as it comprises an open-ended number of activities, amongst them (Kaplan, 2005:10):

- Language learning (rules, use, context, automaticity, attitudes, expertise)
- Language teaching (resources, training, practice, interaction, understanding, use, contexts, inequalities, motivations, outcome)
- Language contact (language and culture)
- Language policy and planning (planning and ecology of language)
- Language assessment (validity, reliability, usability, responsibility)
- Language use (dialects, registers)
- Language and technology (learning, assessment, access and use)
- Translation and interpretation
- Lexicography
- Terminology

4.4 Lexicology / Lexicography

The objective of lexicology is to build a system of the lexical components of a language, including the speakers' implicit knowledge of words and their use as well as systematic and appropriate mechanisms to connect the lexical components with other grammatical components. Additionally, lexicology has to account for the capability speakers have to construct new lexical units by following systematic structural models. While lexicology describes the words of a language and explains how speakers operate lexically, lexicography deals with the principles and methods of writing dictionaries.

Contrary to terminology, lexicology is based on words and does not conceive of meaning unless it is related to the word. Terminology, in contrast, considers that the concept, which is its main focus, is prior to the name and can be conceived of independently from the name or term that represents it. In addition, lexicology is always linked to grammar. Words in dictionaries are described with respect to their use in context; they are considered as elements of discourse. For terminology, on the other hand, terms are of interest on their own account, and neither inflection (provided by the morphological form appropriate for its use in context) nor syntax (which inserts them in the proper grammatical context) are of consequence. Another difference between lexicology and terminology refers to the fact that they start from different viewpoints: terminology starts with the concept and lexicology, with the word. Since it starts from concept and then proceeds to the designation, terminology must be absolutely sure that it is naming a specific concept and not a similar one. As a result, terminological dictionaries favour exhaustive descriptive definitions of concepts which often also indicates the relationships among related concepts. Lexicography of the general language is less explicit, and is chiefly concerned with

avoiding identical definitions, unless words are completely synonymous.

Nevertheless, terminology and lexicology are closely related fields, because:

- both deal with words
- both have a theoretical and an applied side
- both are concerned with dictionaries

Specialists are in two minds about the question whether terminology has to be considered to be a part of lexicology, or whether the two can be differentiated. Some of the characteristics that are distinctive are the following:

- the domain
- the basic unit
- the purpose
- the methodology

So far the opinion of textbooks. For a detailed discussion, please refer to 6.3.

4.5 Specialised lexicography (LSP lexicography)

According to Bergenholtz (1995), in several respects, specialised lexicography and terminology deal with the same subject matter. They are not autonomous, non-interrelated disciplines, even though LSP lexicography and terminology differ in terms of approach.

Some terminologists try to demarcate terminology from LSP lexicography by using arguments such as the proposition that LSP lexicography merely concentrates on the description of general-language words, that it uses an alphabetic macrostructure exclusively, addresses lay-men, etc. However, as Bergenholtz points out, these assumptions are not entirely correct. He argues that terminology and LSP lexicography are very much alike:

1. As a special part of lexicography in general, LSP lexicography certainly does work with LSP terms, as does terminology.
2. LSP lexicography works with both systematic and alphabetic macrostructures, deciding in each individual case which is the more appropriate. Terminology always works with systematic macrostructures.
3. LSP lexicography addresses laypeople and experts alike. Terminology only addresses experts.
4. LSP lexicography prepares dictionaries for both encoding and decoding purposes. Terminology tends to help users encode texts.

LSP lexicography and terminology certainly have a great deal in common. Additionally, they might be able to learn from each other. However, the bullet points above cannot be accepted altogether. Bergenholtz's assumptions towards terminology and specialised lexicography will be discussed in chapter 6.3.

4.6 Cognitive science

Cognition is the result of a mental process that leads to knowledge. The problem of how human thought understands objects, and by abstraction, constructs concepts, is at the very foundation of the theory of terminology. Therefore, a cognitive theory of terminology should provide an explanation of three key issues related to knowledge:

- a. How individuals conceive of reality and structure knowledge.
- b. What concepts exist, how they are formed, how they are related to one another and how they are ordered within the structure of knowledge.
- c. How concepts are related to terms.

In order to communicate concepts and their supporting propositions, speakers use written or oral linguistic signs represented by terms or groups of terms. According to cognitive theory, what they express, however, is not the real world as it is but rather how the individual has internalised it. Language does not reflect the real world exactly, but rather interprets it. Concepts are mentally independent of terms and exist before they are named, as opposed to meaning which, as stated by Saussure, is inseparable from its “sound image”².

In terminology, concept is regarded as an element of knowledge that represents a class of objects of the real world, consisting of a set of characteristics shared by all the individual objects. Concepts can be grouped together into sets (concept systems) and share some characteristics. However, this concept theory is not very specific. With respect to concept, a terminology theory has to include components borrowed from cognitive theory (see 6.1.2).

4.7 Communication theory

The transfer of knowledge is the communicative side of terminology. It is the most important characteristic of specialist communication because it differentiates special language from the general language and also the various special languages from one another. Experts use terminology not only to order thought, but also to transfer specialized knowledge in one or more languages and to structure the information contained in specialized texts. It is true that in specialised communication there are a series of restrictions compared to general communication. Participants in specialised communication are to a greater or lesser degree experts in a subject field and

² This proposition is problematic; it ignores the fact that the naming of many concepts is part of their creation in human mind. It is true that there are some concepts that already existed before they were understood and named, such as DNA, but others are products of human activity and understanding, e.g. biotechnology. See discussion 6.1 and 6.2.

communicate with each other presupposing that they share a certain amount of information about the area of knowledge in question (Sager, Dungworth & McDonald, 1980, et al.) Additionally, the reference world of their communication is limited to that of the special field, which is more formally conceptualised than the world expressed by general language. However, the specialised communication system still includes general language, which supplies the syntax, morphology and a part of the lexicon. In terminology, terms are the vehicles of communication. It is only due to these tools, that specialised communication can be possible. Nevertheless, the general theory understates the importance of terms in terminology work (see 6.1 and 6.2).

5. Methods of terminology

5.1 Onomasiological vs. semasiological process

When it comes to the methods of terminology, the most significant characteristic that has to be mentioned is the onomasiological approach. In general, it is one of the most important rules regarding the scientific representation of terminology. It is in this point that terminology work can be clearly differentiated from other lexicographic products such as lexicography or specialised lexicography, whose working method is semasiological (see 6.3.3.4). As defined in the general theory of terminology and encouraged by Wüster, Picht, et al., terminology work can only be onomasiological (see 6.1.5). This means, every terminology work starts with the concept and then moves on to the designation (= term). The choice of the form of representation for the term may be a linguistic or a non-linguistic one, such as a picture, chart, figure, etc. However, the term is subordinate to the concept, which is at the centre of interest. Apart from the clear delineation of concepts, the most important aim of the onomasiological approach is the classification of concepts into a concept system. The individual delineated concepts are to be represented in correlation with other concepts, clearly indicating the relationship between the individual concepts. This system can be compared to the function of a brain, where the different synapses are correlated to one another, each representing an important brick in the whole construct of knowledge concerning a specific field. In this way, the conceptual structure of a scientific field is established. First then, an unambiguous term is assigned to each concept. However, as mentioned before, terms are of less importance to terminology; according to the traditional theory of terminology, concepts and concept systems exist even before they are named – thus terms and their relevance for this field have been neglected. The advantage of the

onomasiological process is that it operates with a structured quantity of concepts and does not represent concepts and terms in alphabetical order but in relation to their logical/ontological structures.

The other approach is the semasiological process, as used in i.e. lexicography and specialised lexicography. Contrary to the onomasiological process, this approach starts with the word as linguistic sign and then moves on to the spectrum of its meanings. The goal is to represent all meanings as equivalents. This process does not permit a representation in related structures of knowledge, but has to abide alphabetical order.

5.2 Synchronic vs. diachronic approach

The difference between the synchronic and the diachronic approach is another important aspect to differentiate between terminology and other related disciplines such as lexicography and specialised lexicography. In theory, the method of terminology rather focuses on the synchronic approach, whereas the method of lexicography and specialised lexicography rather adheres to the diachronic approach (see discussion 6.3.3.1).

The diachronic approach views the historical development of a language, whereas the synchronic approach views a particular state of a language at some given point in time. Following Ferdinand de Saussure, no knowledge of the historical development of a language is necessary to examine its present system. It is focussed on the structure of language. Thus, one will be concerned with the logical and psychological connexions between coexisting concepts constituting a concept system. The corresponding terms assigned to the concepts constituting the concept system are represented correspondingly; this means not in a chronological order but following the order of the concepts constituting the mental concept system.

The diachronic approach on the other hand will be concerned with sequences of items not perceived by the same collective consciousness, which replace one another without themselves constituting a system.

Relations between coexisting linguistic items are logically and psychologically of a quite different order from relations between chronologically successive linguistic items. This means, the outcome of the synchronic working method will represent a systematically structured subject field; whereas the outcome of the diachronic working method will follow alphabetical order (see discussion 6.3.5).

6. Discussion

6.1 The relationship between concept and term

When looking at the three existing schools of terminology, the Vienna, the Prague and the Soviet school, the Vienna school is the most dominant voice of the older generation of traditionalists. Its principles include the study of concepts before terms, the strict delineation of concepts, their placement in a concept system and the assignment of terms to concepts. In his book “Einführung in die allgemeine Terminologielehre und terminologische Lexikographie (Wien 1979)”, Eugen Wüster, founder of the Vienna school and pioneer in the field of terminology theory, represents the principle of concept as the “starting point of any terminology work” (Felber 1984). In accordance with the Vienna school, the general theory addresses the relation between concepts and terms, starting from concepts and focusing on the present state of the conceptual structure and its representation. As mentioned before, the concept-term relation is characterized by a natural precedence of concepts over terms. This basic characteristic of the traditional terminology theory has lately come under question. A growing number of linguists is convinced of the fact that the basic principles of the theory are in need for re-evaluation (Cabr e 1999; Temmerman 2000; Kageura 2002; Rey 1995; et al.). It seems obvious that the principle of concept is overvalued by the general theory. Another irregularity is the poor description and definition of concept. The general theory lacks a theoretical background that is presupposed to be accepted as a scientific discipline and to differentiate it from other linguistic fields, such as semantics. The question is what role concepts and terms *really* play in terminology work and whether the alleged precedence of concepts over terms still can be accepted.

In order to establish a foundation that enables the discussion of the above-mentioned questions, first the major tools of terminology will be described as presented by the general theory. What is the meaning of concept and term in the terminological sense?

6.1.1 The major tools of terminology

6.1.1.1 The nature of concepts

In the eyes of the general theory, a concept is the sum of common characteristics³ that is identified with a majority of objects and which is used as a method for mental ordering and consequently as a method for communication (Wüster 1979:8). The characteristics form the mental construct that later on has to be designated by a term to enable communication. Wüster (1979:8) provides an example in order to make this explanation more explicit. He highlights the technically important characteristics of “light bulb” that form the mental construct of this object:

- Lamp (source of artificial light)
- Filament where electricity passes through
- Production of light as a result of heating by electricity

Taken these individual elements together they create a complex of characteristics that separate the mental representation of “light bulb” from the mental representation of other individual objects. Those characteristics form the concept of “light bulb”. As the general theory defines concept as an “element of thought”, which consists of “an aggregate of characteristics”, which “themselves are concepts” (Wüster 1979; Felber1984), concepts are not represented in isolation, but as elements in a concept system. “Due to the fact that concepts are composed of characteristics, they have

³ Characteristic is defined as “an element of a concept which serves to describe or identify a certain quality of an individual object. The characteristic itself is also a concept” (Felber 1984)

direct relationships to other concepts, which have the same characteristics in their intensions” (Felber 1984). But prior to the placement of concepts into a system they are to be defined in a traditional definition.

6.1.1.2 The nature of definitions

The Vienna school states three types of definitions: intensional, extensional or part-whole. The intensional definition is the preferred one as it is more systematic than the other two types. “A definition by intension consists of a specification of the characteristics of the concept to be defined, i.e. the description of the intension of the concept (...)” (Felber 1984). Wüster specifies a definition (determination of a concept) as the description of a concept by established concepts, in most cases by means of words.

Taken the example of “light bulb”, the concept can be defined as follows:

The light bulb is a source of electric light that works by incandescence. An electric current passes through a thin filament, heating it until it produces light.

Only after having explained and defined a concept it may be designated by a term.

6.1.1.3. The nature of terms

Based on Wüster (1979), a term consists of one or several word elements (morphemes). Word elements are not determined by their meaning, but by their origin. Wüster states four different kinds of word elements:

- Hereditary words
- Foreign words / loan words
- Transferred designations

Hereditary words:

Hereditary words arise in one language deriving from older forms of that language during the course of time. They cannot be developed in the presence by language planning and intentional language development.

Foreign words and loan words:

Foreign words and loan words are words that are “borrowed” from foreign languages.

Loan words are adjusted to the structure of the English language while foreign words are not, or at least not entirely. Examples:

- wunderkind or kindergarden (foreign words from the German language)
- army (loan word from the Latin word *armata*)
- to animate (loan word from the Latin word *anima*)

A Latin word can both become a foreign word and a loan word, with different meanings. Example: The Latin word *modulus* on the one hand has provided for the development of the foreign word *module* and on the other hand the foreign word *model*.

Transferred designations:

In some cases terms are generated by transferring a designation from an existing subject area to a new subject area. Thus, the new term is not produced by a restructuring of morphemes but by a transfer of meaning. In this process, the new concept is assigned to an existing designation which in this way receives an additional meaning. In most cases the designation is taken from another subject area or dialect. Example:

- Knee → a bent piece of pipe

After having made explicit the meaning of concept and term in the terminological sense, I will turn to the relationship between concept and term as presented by the general theory.

6.1.1.4 The relationship between concept and term

As mentioned before, the concept-term relationship as defined by the traditional theory starts with the concept and aims at the strict delineation of each concept (see 5.1). Each concept should be designed by only one term and one term should only refer to one concept. In his study of concepts, Felber (1984:103) stresses the following: “The concept exists independently of the term, the meaning of which it is. A term is assigned deliberately to a concept after due consideration whether this term corresponds to the concept in question. The assignment precedes an evaluation of the linguistic symbol to be assigned. This symbol can be an existing term or a term to be created from the characteristics being integral constituents of the concept in question. While in semantics meaning and word are regarded as a unit, in terminology concept and designation (= term, symbol, abbreviation) are separated. They form together a terminological unit. A permanent assignment concept-term, which is necessary for communication, is either given by linguistic usage or established deliberately by an act of will by individuals or specialists of terminology commissions”.

Unfortunately, the description of concept and term as well as the description of the concept-term relationship features several irregularities. Additionally, the theoretical background provided is insufficient to allow a clear differentiation of terminology from other linguistic fields, such as semantics. The following is a detailed discussion of four problems with regard to concept and term.

6.1.2 Problem I – Insufficient description of concept

When looking at the representation of concept, the general theory of terminology does not have much to offer. Despite the fact that utmost importance is given to “concept as the cornerstone of the general theory” (Felber 1984), the substance and nature of concept as presented in the traditional theory is not very rich. As mentioned before, concept is defined as an “element of thinking consisting of an aggregate of characteristics which themselves are concepts”. This definition lags far behind current views on concepts and their formalisations in linguistics.

Regarding a concept as a mere aggregate of characteristics does not sufficiently describe the complexity of this mental construct. As Fodor (1975) observes, “conceptual structure must be rich enough in expressive power to deal with all things expressible by language. It must also be rich enough in expressive power to deal with the nature of all the other modalities of experience as well” – no simple matter, as Jackendoff (1990) puts it. He assumes that the possible conceptual structures attainable by a human being are characterized by a finite set of rules and that everyone has essentially the same capacity to develop concepts, but that the concepts one actually develops must depend to some extent on language.

In his publication “X-bar semantics”, Jackendoff takes the subject matter of semantic theory to be “the form of the mentally encoded information that we call concepts”, and “the principles used in performing inferences on the basis of this information”, and “relating this information to other forms of information used by the human mind, including linguistic representations”. The same can be applied to terminology. With respect to concept, a proper terminology theory should include the following components (modified from Jackendoff 1993) as borrowed from cognitive theory:

- A set of rules that describe the expressive function of concepts, the *syntax of thought*, paralleling, for instance, the set of formation rules that delineate possible syntactic structures in a language;
- A set of rules that describe the allowable derivations from one conceptual expression to another;
- A set of rules that define the mapping of other forms of information, e.g. the linguistic representation that conceptual information can be related to.

6.1.3 Problem II – Insufficient background for the description of the concept-term relation

The general theory of terminology does not provide a single theoretical explanation of the formal relationship between concept and terms. Seen from this angle, it has to be understood as clearly different from the relationship between meaning and words in general linguistic semantics, as this relationship is clearly defined. In his publications, Wüster simply declares the privileged relationship between concept and term without further argument, along with the precedence of concepts over terms. And Felber (see quotation in 6.1.1.4) states that contrary to semantics, where meaning and word are regarded as a unit, in terminology concept and term are separated. This attempt to differentiate terminology from semantics cannot be taken seriously when noticing the next sentence where Felber in turn declares that they indeed form a terminological unit together. If this is the case, why does he initially claim that, unlike in semantics, concept and term do not form a unit? And how can it be possible that concept exists independently of the term, the meaning of which it is? Felber provides no theoretical foundation to prove this assumption. The problem here is that if a system of concepts that is to be constructed is meant to have any relevance to the terms of a specific

domain, the existence of those terms should be presupposed. Terminology work cannot be successful when it is based on a system of concepts constructed without reference to terms. This is also true for the relationship between meaning and words. Consequently, the relationship between concept and terms is “formally equivalent” (Kageura; 2002:22) to the relationship between meaning and words. To clearly separate terminology from other linguistic fields, such as semantics, a proper terminology theory should provide a sound theoretical explanation of the concept-term relationship. Without this theoretical foundation terminology cannot be accepted as a separate discipline.

6.1.4 Problem III – The importance of terms is underestimated

So far, this work focussed on concept and its representation in the general theory. But what about terms? Earlier it was mentioned that their significance is undervalued by the theory and that their representation to some extent is poor and incorrect. This seems even odder when noticing that on the one hand it is claimed that terminology work aims at the simplification of communication but on the other hand the general theory does not provide an adequate link between communication and the tool enabling it: the term! Therefore, it is important to change the general theory’s ignorant attitude towards terms.

At first, figures by Gomperz, Ogden, Baldinger, Wüster and Richards will be used to illustrate their view of the correlation between concept and term. Then, Saussure’s theory of langue and parole will be introduced. Finally, a figure will be created that is much better suited to illustrate the concept-term correlation and to highlight the fundamental importance of terms – as without terms, no communication would be possible.

6.1.4.1 Word models by Wüster et al.

The semiotic triangle (figure 6.1), (*Das dreiteilige Wortmodell* by Gomperz (1908), Ogden (1923), Baldinger (1959), et al.), illustrates the linguistic classification of concept, designation and object. The object is placed down right. It has to be understood as the individual object, the extra-linguistic reality. On top of the triangle, concept is placed, representing the meaning of designations. The designation is placed down left. In terminology, spoken designations are on a par with written designations.

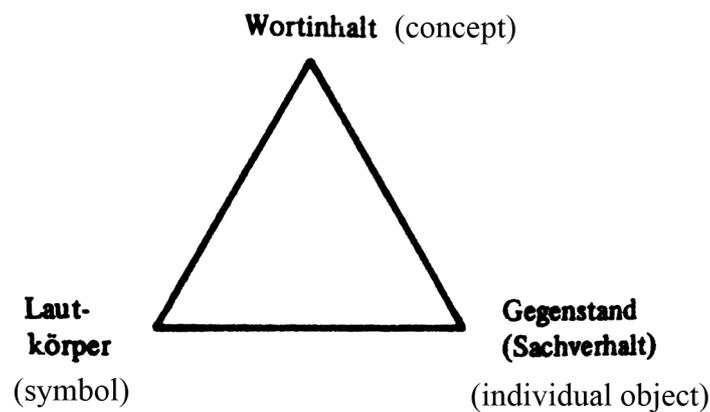


Figure 6.1: Dreiteiliges Wortmodell. Wüster. *Das Wort in der Welt*. (1959:60)

Here the English psychologist Ogden has to be mentioned. In his book "The Meaning of Meaning" (1994) he introduced new names for the right corners of the triangle (figure 6.2): The individual object was called referent, whereas the concept was called reference.

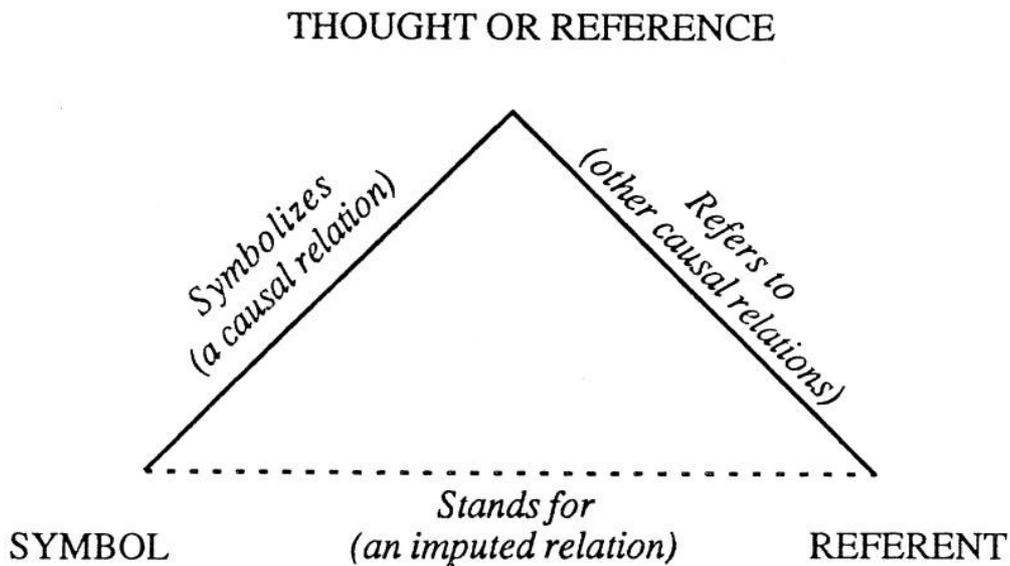


Figure 6.2: The Ogden and Richards (1994) semiotic triangle

In 1959, based on findings by Saussure and von Trubetzkoy, Wüster introduced a rectangular word model (figure 6.3) where he differentiates between the upper part and the lower part of the rectangle. Wüster defines the lower part as the extra-linguistic reality and the upper part as the sphere of concepts, which Wüster calls linguistic world or language system.

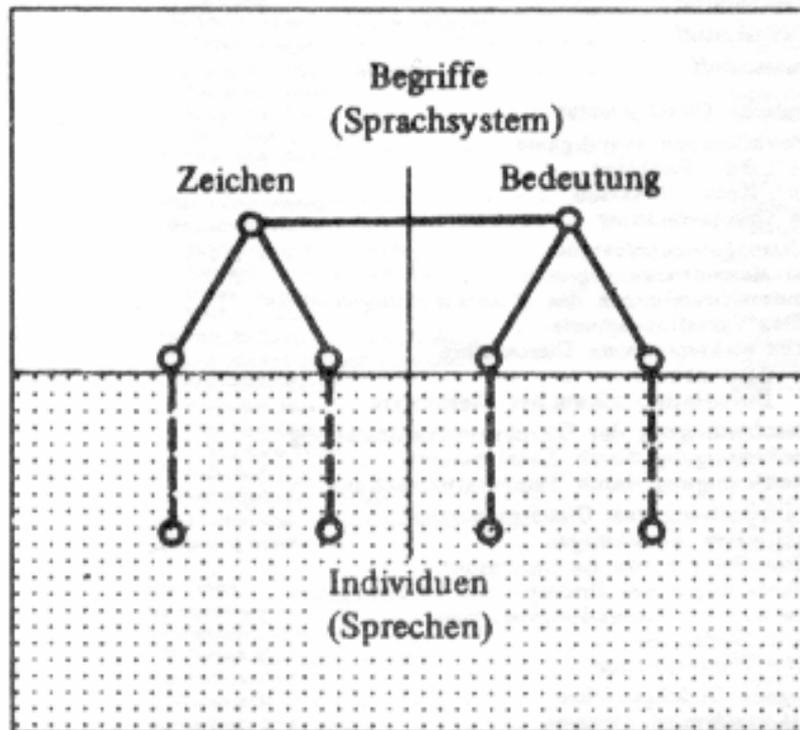


Figure 6.3: Vierteiliges Wortmodell. Wüster. Das Worten der Welt. (1959:60)

The quarter down right is concerned with individual objects. The top right quarter deals with concepts combining and embracing those individual objects. The quarter top left covers the designations, both spoken and written. The quarter down left corresponds to speech-sound and spelling variants.

In terminology, every language builds a concept system and a system of terms. Wüster claims that it is only the concepts that build a concept system based on the relations that exist between them. Terms form a system only by being allocated to a concept system to function as an element in this system. Wüster places the language system in the upper part of his rectangular model. In his opinion, a language system is formed by the fact that the allocation of terms to meanings is a lasting process. Otherwise, he claims, there would be no understanding.

6.1.4.2 Ferdinand de Saussure's *langue* and *parole*

The Swiss linguist Ferdinand de Saussure (1857–1913) was one of the first to differentiate between language as a language system and language as a process of speech. To clarify his idea he linguistically specified the meaning of two already existing words in common French: He used the term “*langue*” to indicate the language system and the term “*parole*” to indicate speech, or more precisely, the language in use⁴. This idea was not accepted or, more adequately, not understood by all. Ogden and Richards were some of those who took an anti-Saussurean position. In their book “The meaning of meaning” (1994), they claimed that Saussure’s big mistake was to argue that the meaning of a word was in the mind and not in the external world. Saussure’s bi-planar analysis of language merely involved the *faits de langue* and the *faits de parole*. In view of Ogden and Richards he should have understood “that language involves a triangular relationship between, for example, i) the word ‘tree’, ii) the botanical tree, and (iii) the mental concept ‘tree’” (Harris; 1987:62). It was in an attempt to remedy this “fatal omission” that Ogden and Richards included a ‘referent’ in their celebrated triangular model of the sign (figure 6.2). Did Ogden and Richards simply reveal a failure to understand Saussure’s position correctly? The fact that Saussure’s analysis of the linguistic sign ‘tree’ does not involve the botanical ‘thing’ that is called a tree does not mean that Saussure is ignorant of botanical matters. But from a Saussurean point of view the botanical tree is irrelevant; what matters is the mental construct. According to Ullmann, the triangle by Ogden and Richards offers, from the point of view of the linguist, “both too little and too much”. It offers too little because it “seems to neglect the speaker’s point of view” (Ullmann 1962:37). On the other hand, it offers too much because “the referent,

⁴ Saussure combined both words in a third word which he borrowed from French common language as well: “*langage*”.

the non-linguistic feature or event as such, clearly lies outside the linguist's province" (Ullmann 1962:56).

Is it meaningful to assign the Saussurean approach to terminology? Does terminology merely depend on *langue* and *parole*? Or does it involve the extra-linguistic reality as well? In either case the models by Ogden and Richards and Wüster are inadequate. Ogden and Richards make no distinction between *langue* and *parole* as it would be necessary to give a full account of the different spheres relevant to terminology. Wüster's rectangular model is problematic, too. He only involves the language system and the extra-linguistic reality in his figure. He simply adds the sphere of *parole* to the extra-linguistic reality. This is no true account of the nature of terminology, as in terminology the language system and *parole* have to be differentiated.

6.1.4.3 The referential world – home of the botanical tree

The question remains whether the extra-linguistic reality really forms a significant part of terminology. On the one hand it can be argued that mental concepts and terms are the only components that count for terminology. On the other hand it has to be discussed whether mental concepts *can* come into existence in the human brain via terms without the referent whom it is assigned to. Therefore, it is necessary that terminology includes the referential world – home of the botanical tree – to its interacting spheres. It makes sense to replace the sphere Wüster called extra-linguistic reality by the referential world, as it is here the referent of the mental construct is placed. The extra-linguistic world still exists – it is the area surrounding the terminological construct consisting of the inhabitants of *parole*, *langue* and referential world. It is here, the outcome of terminology work is used, i.e. in an act of communication.

6.1.4.4 Terms as the link to enable communication

Terms are the necessary link to enable communication. They combine langue, parole and the referential world and thereby allow communication.

Keeping in mind that Wüster was particularly concerned with the compilation and standardization of terms to simplify communication, the alleged precedence of concepts over terms seems even more questionable. “He considered terminology a tool that should be used as effectively as possible to eliminate ambiguity from scientific and technical communication” (Rondeau 1983). With his terminological work, Wüster aimed at the simplification and improvement of scientific and technical communication. Nevertheless has terminology theory paid relatively little attention to usage in communication!

Any kind of communication, aiming at the transfer of information, is based on the words that are spoken, or, in terminology, on terms. Therefore, it is questionable why Wüster undervalued the importance of terms in his theory. In an act of communication, terms are pieces of information that are indispensable to guarantee understanding. Only the adequate term can lead peoples' thoughts to the accurate concept it represents. Moreover, it is due to terms that a concept can be placed in a concept system. Firstly, if the sphere of concepts really is independent of the sphere of terms” (Wüster 1979), then it is not possible to achieve the integration of concepts in a concept system, as the fundamental part of *understanding* those concepts in relation to each other is not given. The designation – the link between the sphere of concepts, the sphere of parole and the referential world – is missing. And secondly, the odd precedence of concepts over terms would lead to the fact, “that anything can be put into the sphere of concepts and there would be no guarantee that the

concepts thus understood would have any meaningful relation to the sphere of terms in the first place” (Kageura 2002). This cannot be the overall goal of terminology work. It is obvious that the significance of terms is underestimated in the general theory of terminology. Wüster’s rectangular word model (figure 6.3) neither sufficiently represents the relationship between concept and terms, nor does it adequately illustrate the role of terms: to function as a link between langue, parole, the referential world and the extra-linguistic reality.

6.1.4.5 Coordinating function of terms

Figure 6.4 illustrates the concept-term constellation seen from an angle where terms play a major role. The upper part and the lower part of the rectangle still exist. However, the lower part is split into the sphere of parole and the referential world. The upper part represents langue or, as called by Wüster, the language system. Concept is still placed in the upper right corner and the individual objects are still placed in the bottom right corner. Different to Wüster’s original figure, the upper left corner is no longer occupied by terms but by concept systems that enter into correlation with concepts. Terms are placed in the centre of the rectangle. They build the link between langue, parole, the referential world, understanding and communication. From the centre which is formed by terms, arrows point to all four corners of the rectangle. From there, arrows points straight downwards to illustrate that terms are the necessary device to enable understanding and communication, which should be the overall goal of terminology.

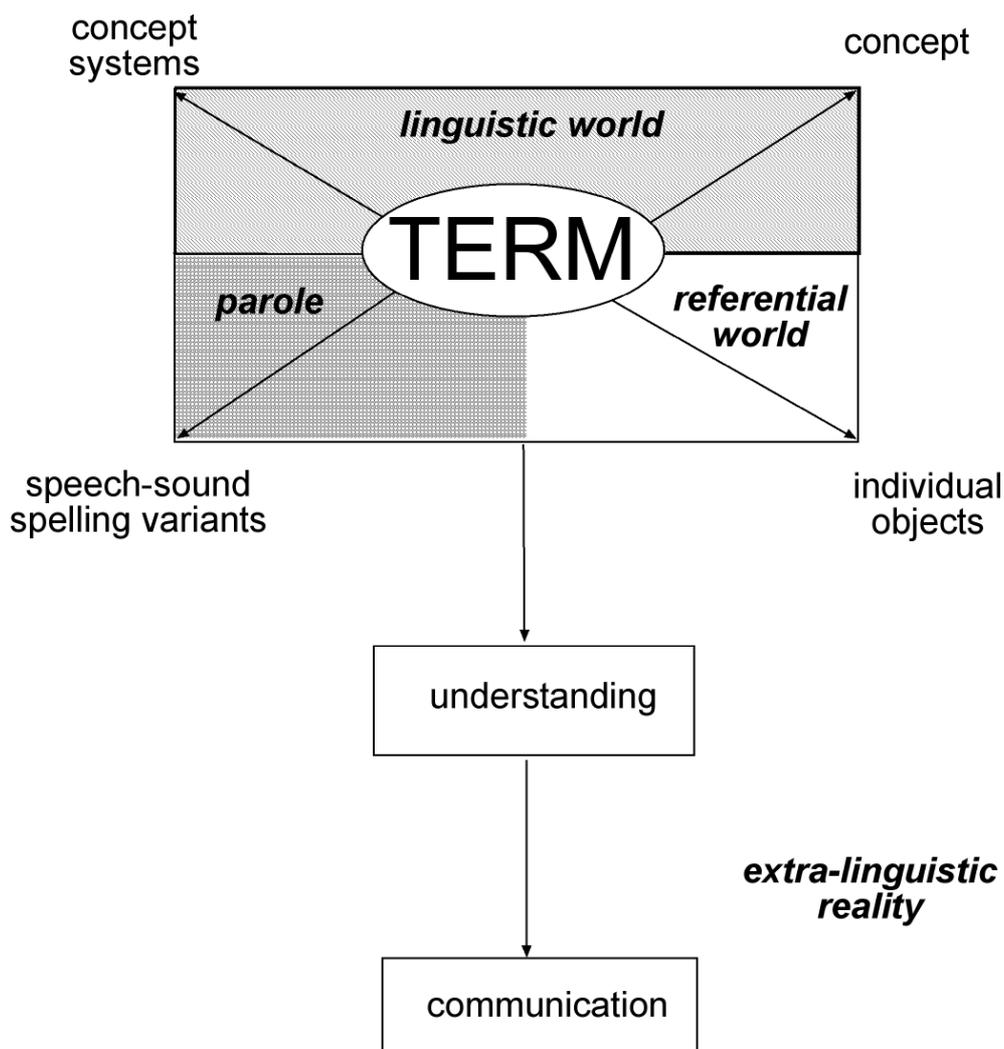


Figure 6.4: Coordinating function of terms within the rectangular word model

This figure is much better suited to illustrate the importance of terms in terminology work. Terms are the compounds that are necessary to link the different elements with each other. Without terms no understanding, let alone communication, would be possible. Only the existence of terms allows the development of terminology work from mental constructs to pieces of information that due to communication can be used to improve the knowledge in a specific domain or subject field.

6.1.5 Problem IV - The onomasiological approach

J.F.Sowa (1993) describes conceptual structures as “highly domain dependent structures”, which clearly differentiates conceptual work in terminology from general linguistics, as lexical structures are merely “relatively domain dependent”. Further, Sowa states that conceptual structures are not dependent on language but that they possibly are culture dependent. This is another difference to general linguistics as lexical structures are highly dependent on language. Besides, the possible dependence of conceptual structures on culture sheds new light on the relation and significance of concept and term in terminology. If we assume that concept is dependent on culture, the proposition of the traditional theory claiming that concepts naturally precede terms loses its validity. If we suppose that a specific concept is well-known in a specific culture and that this concept is designated by a term that is well-known as well. In case that this concept has to be transferred to another culture which is utterly unfamiliar with it – where does the terminologist start his work? Is concept still the starting point in this context? Here it is much more likely that the terminologist starts with the transfer of the term (even more so in case that the corresponding concept represents an abstract object). The formation of a new term which later on is to represent the concept that still is unfamiliar to the culture can either happen by the transfer of designations from other domains or by the introduction of foreign words or loan words (see 6.1.1.3). Thereafter follows the formation of a clearly delimited definition, transferred from the source language culture to the target language culture, probably assisted by further explanations, loan words or foreign words. It is only due to the term and a thorough definition that the “new” culture is able to construct a corresponding concept and place it in a concept

system. Consequently, the argument that “every terminology work starts with concepts” cannot be applied here.

6.1.6 Summary

Chapter 6.1 challenged some of the characteristics of the concept-term relationship as defined by the traditional theory of terminology. The starting point is the assumption that the concept-term relation is characterised by a natural precedence of concepts over terms. This traditional principle leads to a number of difficulties, some of which have been identified. The first problem arises due to the insufficient theoretical description of concept. The definition of concept as an “element of thinking consisting of an aggregate of characteristics which themselves are concepts” is not sufficient as it does not give any information about the true nature of concept. Based on principles from cognitive theory, a proper definition of concept should account for e.g. *syntactic rules of thought* describing the expressive power and the formation of concepts similar to syntactic structures in a language. Additionally, it should include rules that explain and describe derivations from one concept to another as well as a set of rules that define the classification of the linguistic representation that conceptual information can be related to. This leads to the second problem: The description of the concept-term relation, too, lacks theoretical background. The traditional theory provides no argument explaining the privileged relationship between concept and term. Even worse, the attempt to differentiate the concept-term relation from the relationship between meaning and word in semantics leads to a number of contradictions. To clearly separate terminology from other linguistics fields, a proper terminology theory should provide a theoretical explanation of the concept-term relationship including a reevaluation of the dominance of concepts

over terms. The underestimation of terms is discussed in the third problem. The traditional theory neglects terms as the necessary tool to enable communication, one of the most important goals of terminology. Figures by Gomperz, Ogden, Baldinger, Wüster and Richards reveal that they failed to understand that terms form the link between conceptual information and the communication of this conceptual information. Based on Saussure's distinction of parole and langue, the referential world was introduced and a figure was created better suited to illustrate terms as the link between langue, parole, the referential world, understanding and communication. A proper terminology theory should not present terms as inferior to concepts. This assumption leads to the fourth and final problem: The principle that terminology work always moves from concept to term. There are cases where this principle cannot be applied. Assuming that conceptual structures are dependent on culture as described by Sowa, when transferring a concept to another culture, the terminologist has to start with the transfer of the term. Consequently, the argument that "every terminology work starts with concepts" cannot be applied here.

Numerous discrepancies and irregularities with respect to the concept-term relationship has weakened the theory as a whole. The definition of concept and term has to be revised and improved; otherwise terminology cannot be established as a separate discipline.

6.2 The relevance of syntax in terminology

The question concerning the relevance of syntax in terminology is very complex. Several matters have to be taken into consideration to approach this problem. The complexity of the problem derives from the fact that terminology is an interdisciplinary field in science that is defined in relation to other fields from which it takes specific sets of rules, i.e. linguistics, logic, ontology and lexicology. On the one hand it is said

that terminology as an interdisciplinary subject does not define its field as the sum of borrowed concepts, but rather as its *own* object and field, elaborated from the borrowed concepts. On the other hand it is a fact that these borrowed rules and concepts build the basis for every aspect of the resulting terminology theory. One thing is to use the principles of other fields to entitle the emergence of a new discipline. Another thing is that these rules are used and taken for granted, but otherwise are refused to build a part of the terminology theory. This is the overall impression in the case of terminology and syntax. Many specialists in the field of terminology refuse to accept that syntactic rules are of importance to terminology, let alone to understand that these rules should be part of a proper terminology theory. At the same time, however, they make use of syntactic rules in their terminology work. In his book “Einführung in die allgemeine Terminologielehre und terminologische Lexikographie (1979:2)”, Wüster explains his ideas towards the importance of syntax in terminology as follows:

“Der Vorrang der Begriffe in der Terminologie bewirkt auch eine andere Einstellung gegenüber dem sprachlichen Ausdruck. Nur die Benennungen der Begriffe, der Wortschatz, ist den Terminologen wichtig. Flexionslehre und Syntax sind es nicht. Die Regeln hierfür können aus der Gemeinsprache übernommen werden.”

He argues that the rules of inflection and syntax are not important for terminology, but adds that syntactic rules should be taken from common language. This has been misinterpreted by several experts of the field. As an example, Felber (1984:98) states:

“Only the terms of concepts, i.e. the terminologies, are of relevance to the terminologist, not the rules of inflections and the syntax.” Even though he was

translating much of Wüster's work into English, he did not mention Wüster's claim that syntactic rules should be borrowed from common language.

Cabré (1998:33) states that "for terminology, terms are of interest on their own account, and neither inflection (provided by the morphological form appropriate for its use in context) nor syntax (which inserts them in the proper grammatical context) are of consequence". She, too, ignores the fact that terminologists make use of syntax in their work.

Kageura does not ignore the relevance of syntax altogether. He points out that "the claim that only the terms of concepts are of relevance to terminology, while the rules of inflections and the syntax are not, cannot be accepted without reservation" (2002:18). He argues that terms are placed in the sphere of parole, and as such are affected by the rules of syntax, as the "actual distribution of the morphological or syntactic rules in terminology belongs to the sphere of parole".

These assumptions are made by experts aiming at the objective to improve the general theory of terminology. It has become apparent that their opinions concerning syntax in terminology differ significantly. However, to really address this question, one has to remember what was mentioned in the beginning: that terminology is an interdisciplinary field whose concepts are based on the concepts of other fields. Terminology has to be understood in greater context; as related to logic, ontology and lexicology and as a branch of applied linguistics which itself is the applied part of linguistics. Further, it has to be understood that terminology is determined by the characteristics of its terminological units: Terms simultaneously are language units, cognitive elements and vehicles of communication. In case of language units, they are a part of linguistics, in case of cognitive elements they derive from cognitive science, and as communication vehicles that appear in specialised communications

they form a part of communication theory. Understanding this is the basis for any further discussion of the relevance of syntax in terminology.

In the beginning terminology will be placed among other related fields as a branch of applied linguistics. The observation of terminology in the constellation as a “child” of applied linguistics which itself is a “child” of linguistics will lead to a more thoughtful approach towards the rules that originally derive from linguistics and are used by terminology but ignored by its theory.

Some of the shortcomings of the theory of terminology will be highlighted. Especially that it did not succeed in clearly delineating its principles and rules. In some points it cannot be distinguished from other related fields and thus it is not legitimated to exclude rules such as syntax without justification.

The subsequent subchapter deals about terms. As discussed in chapter 6.1, terms have been mostly ignored in the traditional theory. Therefore, there is a lot of room for speculation as far as the nature of terms is concerned. At the example of quotes made by Cabré - representing terms as part of the lexicon, language units, vehicles of communication and cognitive elements - the relevance of syntax will be discussed with regard to terms.

Finally, the question will be addressed whether terms belong to the realm of parole, as claimed by Kageura, or to the language system, as affirmed by Wüster and the resulting consequences will be highlighted.

6.2.1 Terminology as a branch of applied linguistics

In chapter 4.3 it has been determined that applied linguistics, the “applied” branch of linguistics, operates with the theoretical structures specified by (theoretical) linguistics to achieve specific practical tasks. One of them is terminology. The

question remains to what extent terminology makes use of the practices of applied linguistics and the theoretical principles of linguistics.

Cabré points out that “applied linguistics views language as a heterogeneous system of dialects and functional varieties, and allows us to place terminology as one of its branches since it is a part of one of the functional subsystems determined by subject specialisation” (1998:29). Consequently, next to other fields such as lexicography, language teaching and computational linguistics, terminology is placed as one of the branches of applied linguistics. Thus, for a start, the theoretical principles of linguistics and the application structures of applied linguistics matter and cannot be ignored by terminology.

Terminology depends, explicitly or implicitly, upon the other: Applied linguistics supplies the concepts and categories in terms of what rules are to be followed when defining and delineating concepts and assigning designations to concepts. Here, terminology makes actual use of linguistic principles, such as rules from morphology, phonetics, phonology, semantics and syntax. The process of “translating” the extra-linguistic reality into linguistic signs and explicit definitions, one of the major goals of terminology work and the prerequisite for communication, cannot be successful without the principles provided by applied linguistics and theoretical linguistics, respectively. It is true that the theory not necessarily needs to embrace *all* concepts and principles of linguistics and applied linguistics. However, to be in a position to accept one rule and to reject another, a theory has to be fully developed and has to account for every single aspect of its principles and methods. Unfortunately, this is not the case with the traditional theory of terminology.

6.2.2 Terminology has no clearly delineated theory

In the eyes of many experts, terminology is accepted as a field with its own theoretical principles – the theory of terminological– and its own applied purposes – the writing of vocabularies, glossaries and dictionaries, and the standardization of designations. The terminology theory is constructed by principles that are not original, but, similar to other interdisciplinary subjects, borrowed from related disciplines, such as linguistics (as highlighted above), but also logic, ontology and information science. It has been agreed on, however, that little work has been done on the concrete description of terminology-specific rules in the first place. Terminology has no clearly delineated theory; not all of its facets and characteristics have been described sufficiently. Accordingly, it is not very plausible to reject specific linguistic rules, such as syntax, by simply declaring that they are not relevant to terminology work without supplying any valid explanatory statement. As mentioned above, to be in a position to reject certain rules a theory has to be clearly defined. It has to be clearly delineated from the theory of other fields. Otherwise, there will always be room for doubt as to the autonomy of the theory. It will lack credibility and continuously be subject to offence such as the following which is related to the poor granularity of the description of concepts in the studies of terminology.

One of the numerous shortcomings of the terminology theory is that it lacks a concrete description of concepts and concept formation (see 6.1.2 and 6.1.3). Consequently, the following situation exists (Kageura, 2002:23):

1. The relation between concept and terms in the traditional theory of terminology is formally equivalent to the relation between meaning and words (see 6.1.3).

2. The descriptive structure of concepts in the traditional theory of terminology, i.e. a bundle of characteristics, is the same as a simple descriptive structure of meanings, i.e. the bundle of semantic features (see chapter 6.1.3).
3. The granularity of conceptual systems described so far in the studies of terminology does not exceed the granularity of semantic or conceptual systems established in non-terminology-related studies (see chapter 6.1.3).

Accordingly, from the resultant conceptual or semantic descriptions it is not possible to differ between semantically-oriented descriptions of words and conceptually-oriented descriptions of domain-dependent terms. If the conceptual description of terminology constitutes the theory of terminology, then it cannot be distinguished from the theory of linguistic semantics and accordingly it is not legitimate to exclude the principles of this theory from terminology. As long as the terminology theory does not provide a proper conceptual description, experts within the traditional theory of terminology are doing no different than researchers in lexical semantics in general linguistics. "If the only difference resides in the fact that terminology deals with terms rather than general words, the theory of terminology is supported by the mere fact that it deals with terms" (Kageura, 2002: 23). Due to its shortcomings, the traditional theory of terminology loses its argument for excluding specific linguistics rules such as inflection and syntax from terminology work. Even more so, as it actually makes use of these rules as argued above.

Another problem is that the traditional theory ignores the significance of terms (as discussed in chapter 6.1). Obviously, not much thought has been dedicated to their complex nature and diverse modes of function. Therefore they remained to be highly speculative units and researchers are debating them with regard to their true nature and function. The first assumption represents terms as part of the lexicon. The

question is whether this has any consequence for the relevance of syntax in terminology.

6.2.3 The relevance of syntax for terms

6.2.3.1 Terms as part of the lexicon

Researchers such as Wüster, Felber, Cabré, et al., accept terms to constitute a subcomponent of the lexicon of a language, “since a speaker’s competence cannot exclude a specialised vocabulary and even less so in the case of ideal speaker-hearers who know everything about their language” (Cabré 1998:32). This argument is used to legitimate terminology forming a part of linguistics and from the point of view of its base material, the terms, forming a part of applied linguistics as well. However, they claim, terminology does not make use of all linguistic concepts, but only those that are suitable to its objectives; i.e. it borrows elements from morphology, lexicology and semantics and only operates with a limited number of concepts from these branches of linguistics. On the one hand, Wüster, Felber, Cabré, et al., claim that terms form a part of the lexicon of a language. On the other hand, however, they suggest that only few rules applying to the lexicon apply to terminology. This argument does not sound very plausible. Cabré (1998) explains that the lexicon 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. Additionally, a coherent lexical theory must be able to account for everything, speakers of a language know about the words they use and could use. This means it has to include the speaker’s implicit knowledge of words and their use as well as mechanisms how to connect lexical

components with other grammatical components. If terms form a part of the lexicon as argued by Cabré, they are affected by these rules to the same extent as words! Felber (1984:98) states that “only the terms of concepts, i.e. the terminologies, are of relevance to the terminologist, not the rules of inflections and the syntax”. If terms are of relevance to terminology, then the rules of inflection and syntax are of relevance, too, as they are of relevance to terms who form a part of the lexicon. Why did Felber, Cabré and others get caught up in contradictions? Seemingly, the only reason of rejecting the rules of syntax is to differentiate terminology from other fields such as lexicology, even though there is no scientific ground to do so.

The same illegitimate argumentation is used with respect to the representation of terms as language units:

6.2.3.2 Terms as language units

Concerning the “basic unit” Cabré points out that a word is a unit described by a set of systematic linguistic characteristics that has the property of referring to an element in reality. A term on the other hand, “is a unit with similar linguistic characteristics used in a special domain. From a linguistic point of view, a word is a unit characterised by having a phonetic form, a simple or complex morphological structure, grammatical features, and a meaning that describes the class to which a specific object belongs. A term is also a unit presenting the same characteristics.” If a term presents the same linguistic characteristics as a word, the consequence is that the rules of phonetics, morphology and grammar are relevant to terms and consequently to terminology as well, and that they must form a part of the terminology theory as terms are the basic unit of terminology.

Apart from being basic units and language units, terms are cognitive units as well:

6.2.3.3 Terms as cognitive elements

In trying to differentiate terminology from lexicology, Cabré again uses the argument of the onomasiological versus the semasiological approach. “Lexicology is based on words and does not conceive of meaning unless it is related to the word; terminology, in contrast, considers that the concept, which is its main focus, is prior to the name and can be conceived of independently from the name or term that represents it. Lexicology is always linked to grammar. Words in dictionaries are described with respect to their use in context (...). For terminology, terms are of interest on their own account (...) (1998: x).” For the first, the quotation that terminology, in contrast to lexicology, considers that a concept can be conceived of independently from the name is confusing. As already mentioned in chapter 6.1 it is very dubious if something *can* be conceived of in a human brain if it a) does not have a name and b) cannot be discussed in using linguistic signs, but simply exists as a “mental construct”⁵. So the question remains *how* terminological concepts are to be conceived of, if not by means of terms – the cognitive elements of terminology – and the linguistic rules to which syntactic rules belong and which are of relevance to terms. For the second, concepts cannot be conceived of if they are not clearly delineated by a definition consisting of terms and words. “Since it starts from the concept and then proceeds to the designation, terminology must be absolutely sure that it is naming a specific concept and not a similar one. As a result, terminological dictionaries favour exhaustive descriptive definitions of concepts which often also indicates the relationships among related concepts (...) (Cabré;1998:34).” The question arises how to create “exhaustive descriptive definitions” without abiding the

⁵ Not *all* concepts in terminology can be illustrated by a picture so that an explanation assisted by linguistic signs is not necessary; i.e. concepts from fields such as social science cannot be illustrated by a picture.

linguistic rules of syntax. No expert would be able to understand a definition that has been created without taking the rules of syntax into consideration. Thus, terminological concepts are to be conceived of and defined by means of terms – the cognitive elements of terminology – and the linguistic rules to which syntactic rules belong and which are of relevance to terms.

Apart from the conceptual and linguistic work, one of the goals of terminology is to enable specialised communication. In her work Cabré repeatedly stresses the significance of communication in terminology. She points out that terms are vehicles of communication; without them communication would not be possible:

6.2.3.4 Terms as vehicles of communication

It is striking how many times the importance of communication and expression is pointed out. Cabré (1998) states the different scientific approaches to terminology:

- For scientific-technical disciplines terminology (...) is the means of expression and communication
- For the user, terminology is a set of useful communicative units which must be evaluated from the point of view of economy, precision and suitability of expression

Even though terminology often is mentioned as a tool to improve and enable communication, when discussing its rules and principles, the importance of communication is forgotten. What matters in the context of syntax is the question whether it would be possible to express oneself and communicate successfully without observing the rules of syntax. Cabré states that “words are not only linguistic units that can be described solely from the standpoint of the system of the language; they are also communicative units (...) (1998:45)”. Even though the majority of users of terms are professionals and experts that deal with a specific subject field, it is due to

terms that communication between these experts can be carried out. The factor of communication, which was neglected by terminology so far, has to become a part of a proper terminology theory, together with linguistic rules important to communication, such as syntax. Additionally, to further enhance communication and to simplify the work of translators and interpreters, terms have to be represented in context:

6.2.3.5 Terms and their use in context

Cabré claims that words in dictionaries are always linked to grammar as they are described with respect to their use in context, whereas terms are of interest on their own account. This quotation is simply not true. In terminology work, it is extremely relevant to describe terms with respect to their use in context as well. Firstly, next to the delineation and standardisation of concepts, one of the overall goals of terminology is to enable communication (see 6.1.4) in any respective subject field. As long as the terminology theory continues to separate terms from grammar as practised so far, this objective cannot be achieved. To give scientists, experts and workers of a specific subject field the best possible linguistic equipment at hand, terminology work has to link terms to grammar and the terminology theory has to be expanded by the rules of syntax. Secondly, terminology work has an additional objective: to facilitate the work of translators and interpreters. For this group of people, terminologies consisting of terms without reference to their use in context would be useless. Even Cabré found that “terminology prepared for translators must contain contexts that provide information on how to use the term, and, ideally, provide information about the concept in order to ensure translators use the precise form to refer to a specific content”. Therefore, the claim that terms are of interest on

their own account, is not true. A proper terminology theory has to account for grammar, syntactic rules and the reference of terms to their use in context.

So far, terminology has been placed as a branch of applied linguistics. Some of the shortcomings of the traditional theory have been pointed out and it has been clarified that terminology is no clearly delineated field. Therefore, it is not legitimised to reject certain rules, such as syntax, as provided by applied linguistics and linguistics, that obviously are relevant to terminology as could be seen in the representation of terms as parts of the lexicon, language units, vehicles of communication and cognitive elements. Another indicator for the relevance of syntax was the argument that a major part of terminology work is the creation of definitions and the representation of terms in their use in context. Now the question remains whether terms belong to langue – the language system – or parole – the level of speech.

6.2.4 Langue or parole – where do terms belong?

6.2.4.1 Notions by Wüster and Kageura

According to Wüster, terms belong to the language system, as can be seen at the example of his rectangular word model (see figure 6.1)

Kageura (2002:11) argues that “by defining terminology as the set of terms of a subject field, terms have been placed in the realm of parole, the realisation of language, as opposed to langue, the system of language”. In figure 6.5, he illustrates the position of terms and words in language within the distinction of parole and langue. He argues that the alleged position of terms shows that the manifesting of terms as lexical units does not legitimate the study of terms in the same manner as the study of words (Kageura 1995). He points out that “while the study of words can

extend from the investigation of word forms at the level of langue, or language system, through the semantic study of word formation patterns to the concrete study of word use or word change within a language community, etc., not all the corresponding investigations of terms constitute by themselves the proper study of terminology (2002:13)". He is right in his assumption that the study of terms in the same manner as the study of words is not sufficient to terminology. He is not right, however, in his supposition that this study should be excluded totally from terminology theory. With this, he paves the way for placing terms in the realm of parole. Yet this argument cannot be accepted. The study of terms in the manner as described above has to be understood as a precondition for the study of terms in the broader sense. As part of the lexicon (see 6.2.3.1)), terms share the same characteristics as words and the study of words has to be taken as the foundation for the study of terms. Thus, the argument that it is "logically impossible to give necessary and sufficient conditions to specify terms at anything other than the level of parole" (Kageura, 2002:11) cannot be accepted.

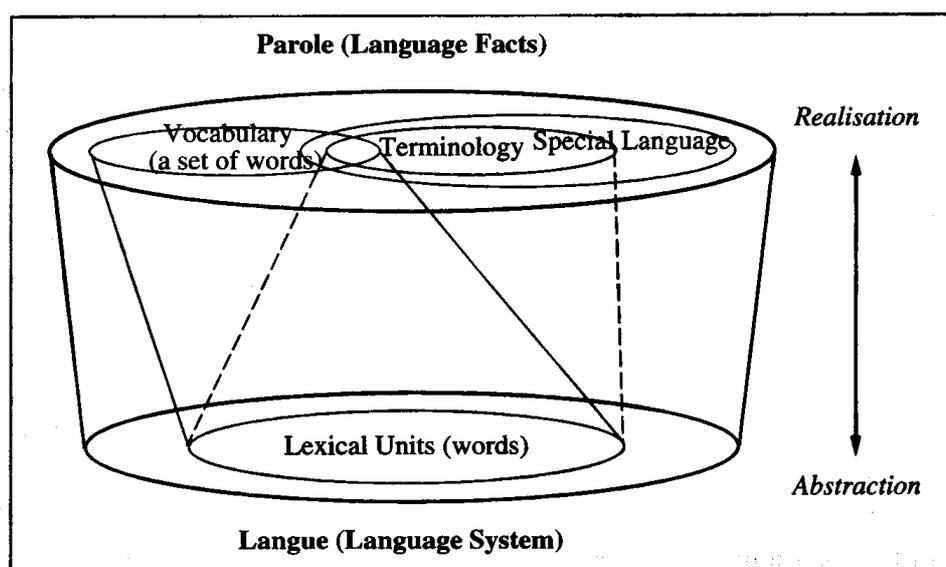


Figure 6.5, The position of "term" in language (Kageura, 2002:13)

Further, Kageura points out that “by defining a ‘terminology’ as the set of terms of a subject field, terms have been placed firmly in the realm of parole, the realisation of language, as opposed to langue, the system of language” (2001:11). This argumentation is not very convincing. He is true in his assumption that a terminology can be defined as the set of terms of a subject field. However, this perception is not a new one and does not explain why it leads him to the conclusion that terms have been placed in the realm of parole. Seemingly, the difference between the language system and the realm of parole has not been investigated sufficiently. To make the distinction between langue and parole clearer, Saussure’s economic analogy will be applied (Harris 1931:120).

6.2.4.2 Saussure’s economic analogy

Saussure’s economic analogy assimilates the act of speech to a commercial transaction and words to coins⁶. Originally, Saussure developed his analogy to explain the *valeur* (value) of a linguistic unit, as for Saussure, the *valeur* of a linguistic unit is like the value of a coin⁷. Saussure points out that in order to understand the value of a five-franc coin, it is necessary to know two things: ‘(1) that the coin can be exchanged for a certain quantity of something different, e.g. bread, and (2) that its value can be compared with another value in the same system, e.g. that of a one-franc coin, or of a coin belonging to another system (e.g. a dollar).’ In the case of linguistics, too, two such requirements can be identified. ‘Similarly, a word can be compared to something dissimilar: an idea. At the same time it can be compared to

⁶ Already here, the reader becomes aware of the fact that Saussure obviously differentiates between ‘the act of speech’ (parole) and words. The question remains where words belong to.

⁷ This analogy was criticised by Harris, et al., as not to be working; however it can be used to illustrate the difference between parole and langue even though the objective of this work is not to grasp the meaning of the linguistic value.

something of like nature: another word.’ From this the reader has to conclude that the *valeur* of a word is ‘not determined merely by that concept or meaning for which it is a token. It must also be assessed against comparable values, by contrasts with other words’ (Saussure; *Cours de linguistique générale*). However, it was criticised that this economic comparison would not work unless the reader was prepared to ignore the difference between coins as the objects actually exchanged in commercial transactions and coins as units in a system of currency. Among other things it was criticised that there is no sense in which the “Frenchman who utters the word *chaise* gets in exchange the idea of a chair (or an actual chair either)” (Harris 1931:121). In this respect, linguistic transactions did not at all resemble commercial transactions. Hence, the analogy may not work when the objective is to explain the *valeur* of a linguistic unit, but it works perfectly to illustrate the difference between *langue* and *parole* and the classification of terms. The economic comparison represents precisely the distinction which corresponds in the linguistic case to that between items of *parole* and items of *langue*. ‘The difference between *coins* as the objects actually exchanged in *commercial transactions*’ and *coins* as units in a *system of currency*’ can be translated into ‘the difference between *terms* as the objects actually exchanged in an *act of speech*’ and *terms* as units in a *system of concepts*’. Accordingly, terms belong to both spheres: the sphere of *langue* and the sphere of *parole*. Now it can be argued that the Saussurean approach originally focused on words and not on terms. However, as determined above, terms form a part of the lexicon and it is the lexicon that is comprised by Saussure’s theory: he does not exclude terms or other forms of specialised vocabulary when he speaks of words. Thus, the Saussurean approach enables me to both reject and confirm the ideas by Kageura and Wüster: Terms do belong to the sphere of *parole*, but they do belong to the sphere of *langue* as well (see figure 6.6). They are exchanged as objects in an

act of speech → parole. At the same time they enable the classification of concepts in a concept system by representing the mental construct which otherwise could not be grasped by the human mind → langue.

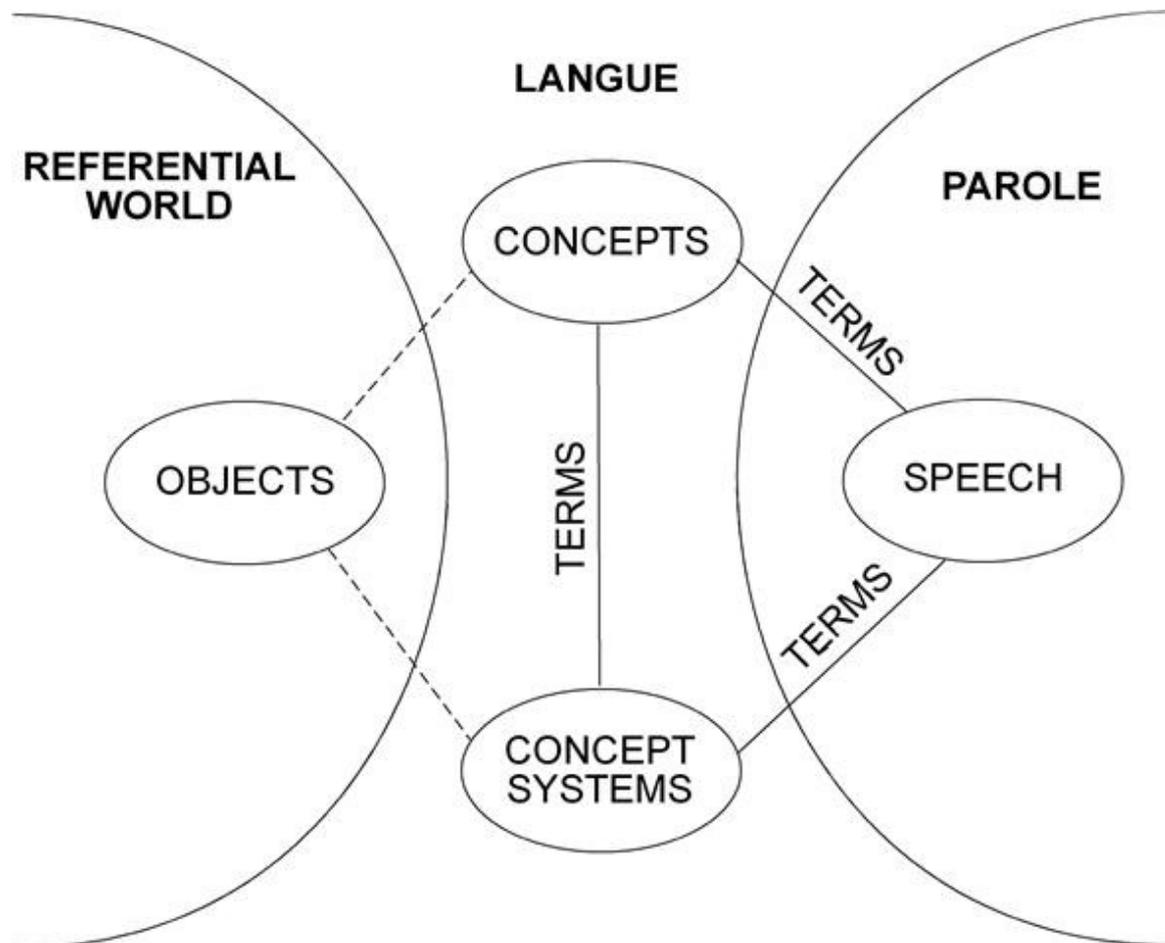


Figure 6.6 Terms in the realm of langue and parole

The rules of syntax apply to terms and consequently to terminology. Terms belong to langue, the language system; the rules of syntax belong to the theory of the language system as well. As already pointed out by Wüster, these rules are to be taken from general linguistics. Terms belong to the sphere of parole as well. As pointed out by Kageura (2001:18): “The actual distribution of the morphological or syntactic rules in

terminology belongs to the sphere of parole” and thus it is simply wrong to argue that syntactic rules are not of relevance to terminology.

6.2.5 Summary

This chapter discusses the relevance of syntax in terminology.

An account of terminology in greater context was given. Terminology was placed as a branch of applied linguistics and general linguistics. It was made explicit that terminology makes use of certain principles and approaches provided by linguistics and applied linguistics, respectively, and rejects other principles, such as the rules of syntax, without justification. It was identified that terminology is not legitimised to do so as it has not clearly delineated theory and cannot be accepted as an autonomous discipline so far.

Further, it was indicated that the complex nature of terms has been neglected by the traditional theory. Terms were identified as parts of the lexicon, language units, vehicles of communication and cognitive elements. In each constellation syntax was of relevance: If terms form a part of the lexicon they can be defined as lexical units containing phonological, morphological, syntactic information. Terms as language units present the same characteristics as words and thus they are characterised by having grammatical features. Terms as vehicles of communication indicate the significance of communication in terminology. As communication cannot be successful without observing the rules of syntax, the theory of terminology cannot reject syntactic rules. Terms as cognitive elements enable the perception of concepts and their relationship to other concepts. Additionally they allow the creation of definitions – another major task of terminology work. Without abiding the rules of syntax the writing of definitions would be practicably impossible. Further, the representation of terms in context must not be neglected. With regard to

communication in general and the needs of translators and interpreters, it is extremely relevant to describe terms with respect to their use in context. Therefore, a terminology theory has to include grammar and syntactic rules as well.

Finally, it was discussed whether terms belong to *langue* – the language system – or *parole* – the level of speech. Saussure's economic analogy was applied to illustrate the difference between *parole* and *langue*. This work came to the conclusion that terms belong to both spheres: They are exchanged as objects in an act of speech → *parole*. At the same time they enable the classification of concepts in concepts systems by representing the mental construct which otherwise could not be perceived by the human mind → *langue*. Consequently, syntactic rules apply to terms in two ways: Terms belong to the language system; the rules of syntax belong to the language system as well. At the same time terms can be assigned to the sphere of *parole*; the actual distribution of syntactic rules belongs to the sphere of *parole*.

The traditional theory of terminology was shown to be wrong in excluding the rules of syntax from its principles. They must form a part of terminology: Introducing syntax to the principles of terminology is a necessary step on the way towards an autonomous terminology theory.

6.3 A comparison of terminology and specialised lexicography based on five theses by Bergenholtz

In recent years, the field of specialised lexicography as an alternative to terminology has become more and more important. Due to certain irregularities and shortcomings in terminology theory (some of those are also discussed in this thesis), the method of specialised lexicography is understood to be easier accessible as the method of

terminology, and a number of researchers in this field even promote specialised lexicography as a real alternative to terminology. On the basis of five theses by Bergenholtz (Fachlexikographie:1994), originally intended to identify the strengths and weaknesses of specialised lexicography, the resemblances and discrepancies of both fields were pointed out with regard to efficiency, expert type, working methods, field coverage and macrostructure. The intention is to consider whether specialised lexicography may supersede terminology one day, or if terminology is a valuable discipline of its own that offers other working methods and further possibilities than it is the case with specialised lexicography.

6.3.1 Thesis 1 – LSP dictionaries are not very efficient

According to Wiegand (1988), in specialised lexicography, reference books can be divided into three classes (see figure 6.7): LSP dictionaries, encyclopaedias and encyclopaedic dictionaries. The genuine purpose of the dictionary is to provide information about language, the encyclopaedia is used to supply encyclopaedic information and encyclopaedic dictionaries provide both linguistic and encyclopaedic information. A LSP dictionary, if necessary, may also contain encyclopaedic information and an encyclopaedia may inform about language. However, linguistic information can only be included if the user can be expected to previously have gained knowledge on the field; otherwise it is necessary to include encyclopaedic information as well. Thus, only an expert will be able to use a LSP dictionary without running the risk of misunderstanding things, whereas a layperson will be better advised with an encyclopaedic dictionary. Only an encyclopaedic dictionary provides explicit linguistic and encyclopaedic information. Most of the bilingual and multilingual LSP dictionaries, on the contrary, do not provide any encyclopaedic information.

Accordingly, only experts will benefit from them; for all other users they will not be very efficient.

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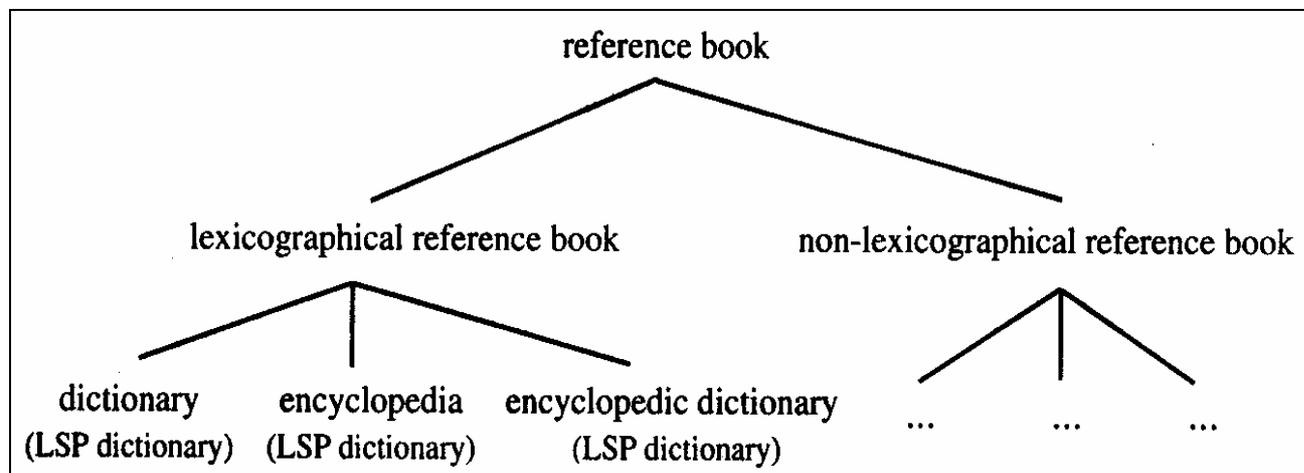


Figure 6.7 Bergenholtz/Tarp (1995:30)

The following example from a Danish-English specialised dictionary (Bergenholtz/Tarp; 1995:50) illustrates how bilingual dictionaries in general present their information:

kapitalinteresse capital participation

kapitalinteresse participating interest

kapitalinteresse share

kapitalinteresse shareholding

kapitalinteresse vested interest

kapitalinteresse i datterselskab shareholding in a subsidiary

The dictionary user is provided no assistance in making a choice of equivalent. Only speakers of Danish who at the same time are experts of the corresponding subject field will be able to choose the correct equivalent. Obviously, the result of specialised lexicological work is a great mass of reference books covering a great quantity of

words and equivalents of very widespread fields. Still, in many cases they cannot be utilised effectively as revealed above.

The ideological outcome of terminology work, on the contrary, are knowledge data banks which – although restricted to a very small field – provide information that can be used by laypersons and experts alike. Laypersons can use the data bank to introduce themselves to the unfamiliar subject field. Experts can learn more about a specific field. This happens by means of strictly delineated concepts and their classification in concept systems (see 6.3.3.4 and 6.3.5) and due to the fact that terminology always aims at avoiding ambiguity. Apart from the term representing the concept, terminologies supply the following information:

- Term → source language / target language
- Source → source language / target language
- Definition → source language / target language
- Context → source language / target language
- Subject field → concept system in source language / target language
- Grammatical category → source language / target language
- Author

It is true that a complete terminological data bank on a specific subject field is based on an enormous workload and that this cannot be carried out for each existing subject field. Nevertheless, a terminology data bank is the most effective form of linguistic and encyclopaedic knowledge transfer. Compared to specialised lexicography, offering an innumerable quantity of dictionaries, encyclopaedias, etc, which in the end often turn out to be ineffective, terminology provides a knowledge data bank of a clearly delineated field which informs in detail about every aspect of the subject area.

Nevertheless, both forms of linguistic and encyclopaedic knowledge transfer are necessary. Specialised lexicography could be made more effective by combining LSP dictionaries and encyclopaedias and thus simply aiming at encyclopaedic dictionaries. These reference books will be much more widespread than terminologies, but at the same time more vague. Each will be a supplement of the other.

6.3.2 Thesis 2 – A LSP dictionary should be written both by a linguist and an expert of the corresponding subject field

To make specialised lexicography successful, it is necessary that a dictionary not only is written by a lexicographer / linguist or an expert of the corresponding subject field, but by both of them forming a team. The same applies to terminology: here a terminologist and a specialist have to work together. The more languages involved the bigger the team in both cases. Apart from linguistic and field experts in all participating languages, an ethnologist might be useful as well, who knows about cultural differences that are important to point out.

6.3.3 Thesis 3 – Specialised lexicography can be equated with terminography

Bergenholtz points out that in principle specialised lexicography is the same as terminography and that modern terminologists agree to this thesis. According to Bergenholtz, they merely neglect the term LSP lexicography and speak of terminography or terminological lexicography instead. This thesis is not true at all. In fact, all important specialists in that field, such as Cabré, Kageura, Laurén, Myking,

Picht, et al., argue that specialised lexicography and terminography are to be differentiated from each other. They belong to different fields, use different methods and aim at different objectives.

Whereas specialised lexicography deals with words in order to account for the lexical competence of speakers, terminography deals with terms in order to establish a reference to concepts of the real world. Specialised lexicography works from theoretical hypotheses, which it refutes or confirms by analysing samples of speakers' discourse. Terminography, on the other hand, does not explain human behaviour, but rather looks for terms to fill in a previously established conceptual grid (adopted from Cabré; 1998).

Bergenholtz claims that the following characteristics of terminological products apply to lexicographic products as well:

- they are rather synchronic than diachronic
- they are rather aimed at the expert than at the layman
- they are rather normative than descriptive
- they are rather onomasiological than semasiological

6.3.3.1 Specialised lexicography is synchronic rather than diachronic

Dictionaries and LSP dictionaries can be both synchronic and diachronic. Bergenholtz and Tarp are right to point out that in LSP lexicography, the use of the synchronic approach is more adequate since the objective is to represent the lemmata of a specific field that may be the object of constant change. Lemmata may change and new lemmata may arise (due to standardisation work by terminologists). Accordingly, the focus is on the representation of new words and not on the explication of the development of the lexicon of a specific field.

6.3.3.2 Specialised lexicography is aimed at the expert rather than at the layman

It may be true that some products of specialised lexicography are aimed at experts instead of laypersons; this derives from the fact that some specialised dictionaries do not provide sufficient encyclopaedic knowledge (see thesis 1) and in this way they do not give laypersons the chance to benefit from them. Terminological products, on the other hand, can be used by lay users as well as they provide both sufficient linguistic and encyclopaedic knowledge.

6.3.3.3 Specialised lexicography is normative rather than descriptive

The statement that lexicographic products are normative rather than descriptive does not sound very plausible. In general, lexicography deals with the description of the lexical competence of speakers. The task of lexicography is not to invent and standardise new words, but to represent the existing lexicon of speakers of a language, i.e. its primary purpose is descriptive. Terminography, on the contrary, pursues the goal of naming and standardisation, i.e. its primary purpose is normative. When answering the question 'what is specialised lexicography', Bergenholtz and Tarp (1995:28) state: "Specialised lexicography is that branch of lexicography which is practised by LSP lexicographers who prepare specialised dictionaries". When comparing special lexicography and terminography, they point out: "LSP lexicography must necessarily to a greater or lesser extent be both descriptive and prescriptive" (1995:11). Why, however, should this be the case? The basic function of lexicography is to collect and represent the words of the lexicon. Accordingly, the

basic function of specialised lexicography is to collect and represent the lemmata of a specific subject field of the lexicon. Neither lexicography nor specialised lexicography aim at the standardisation of new terms; this is the overall goal of terminography. Consequently, this statement cannot be accepted.

6.3.3.4 Specialised lexicography is onomasiological rather than semasiological

The assumption that LSP lexicography is rather onomasiological than semasiological cannot be accepted at all. This difference in approach describes the very essence of the nature of lexicography and terminography. The working method of lexicography, no matter if it deals with LSP-lemmata or not, is not onomasiological but semasiological. The creation of a general or LSP dictionary starts with establishing a list of words constituting the inventory of entries for the dictionary. The lexicographer then describes them semantically by means of the definition. This process is semasiological – it moves from the form to the meaning. The procedure used in terminography is precisely the opposite. The terminologist first establishes the list of concepts that constitute a field and then assigns a certain designation to each concept, and this designation is the term that specialists commonly use when referring to the concept. Working from the concept to the name is known as an onomasiological process (adopted from Cabré;1998). LSP lexicography and terminography follow two contrary approaches. If LSP lexicography claims to make use of the onomasiological approach, then it no longer is LSP lexicography, but terminography!

Last but not least, Bergenholtz states that due to the fact that terminology / terminography more and more try to include further aspects in their work, such as synonymy, morphology, syntax, etc. terminography can be understood as a synonym to specialised lexicography. Simply by adding further linguistic information to its work

(which by the way is a real improvement of terminology work), terminology/terminography do not change its core methods and approaches. And those are clearly different to (LSP) lexicography.

6.3.4 Thesis 4 – Multi-field dictionaries cannot provide an overall view of the individual subject areas

This thesis can be understood as a call for a minimalist approach in specialised lexicography: A sub-field dictionary will possibly be a better dictionary than a single-field dictionary, but a single-field dictionary still will be more thorough than a multi-field dictionary. Users of dictionaries are often misguided when choosing from a great number of reference books. They expect a dictionary covering a maximum number of fields to be the best choice. They are not aware of the fact, however, that multi-field dictionaries can hardly cover each subject area sufficiently. Experts in the field of specialised lexicography, such as Bergenholtz, Schaeder and Tarp are right in their claim that there should be a tendency towards sub-field dictionaries. On the other hand, with respect to many subject fields, this need is covered by terminology. It is the task of terminology to represent sharply delineated subject areas, and terminology is much better equipped to carry out this work as each field is regarded as a system of interdependent concepts.

In this point, terminology and specialised lexicography may complement one another. Specialised lexicography provides a gross overview of lemmata and their synonyms that may belong to different sub fields, but at the same time allows the user to make his own decisions. Terminology provides profound knowledge of a minor sub-field, but gives the user no option to choose.

6.3.5 Thesis 5– A dictionary must adhere to an alphabetic macrostructure of its lemmata.

The entire wording is: “A dictionary must adhere to an alphabetic macrostructure of its lemmata. However, it has to be verified to which extent the alphabetical classification can be supplemented by other systematic aspects.”

This thesis outlines that Bergenholtz as well as other researchers of specialised lexicography are not entirely satisfied with the tradition of ordering its lemmata according to an alphabetic macrostructure. “The objection raised against the alphabetic arrangement is that it breaks the systematic approach to an otherwise systematically structured subject field” (Bergenholtz/Tarp, 1995:190). Wiegand’s (1977) comment on this issue is even more drastic. He speaks of a dominance of the alphabet and criticises that this dominance destroys the natural structures of the lexicon and that this has to be overcome by means of codification, “in destroying the onomasiological blindness of alphabetic dictionaries”. However, Bergenholtz assures that Wiegand’s intention is to merely “offer resistance against the total dominance of the alphabet” and not to abolish it altogether.

Bergenholtz points out that there are several possibilities to keep an alphabetic order and at the same time illustrate the natural system of a subject area. One possibility is to “employ a cross-reference system” (1995:190) to which it should be referred from the “individual lemmatised lexemes of a word field”. Another possibility is to refer to attached illustrations and grammatical data. An introducing systematic overview in the beginning of the dictionary is another way to avoid total dominance of the alphabet. This system refers to the entries in the alphabetic part of the dictionary. Despite these ways to avoid total dominance of the alphabet, specialised dictionaries will still be subject to alphabetical ordering.

In terminology, the arrangement of terms is systematic. In a systematic arrangement the focus is on the concept and its classification into a concept system. A systematic ordering is conducted “according to conceptual systems based on definitions, which, among other things, serve to delimit the concepts relative to each other as well as to establish their mutual relationships. Hierarchical relations may either illustrate superordination, subordination or co-ordination”. The place of the individual concepts in a concept system will determine the structure of terms in the terminological data base. A systematic ordering of terms in terminology is possible because terminologies comprise only small sub-fields and avoid ambiguity. This is not the case with specialised lexicography.

Bergenholtz states that most dictionaries are based on alphabetical classification. In his view, it cannot be denied that the alphabet is easy to handle both with respect to the lexicographer and the user. He is definitely right in this point. As discussed above, lexicographic products – even specialised dictionaries and encyclopaedias – have a tendency to be much more widespread than terminologies. Lexicographic products are much more likely to be multi-field or single-field dictionaries than sub-field dictionaries. Accordingly, the quantity of lemmata is enormous. It is completely impossible to establish an entirely systematic arrangement of lemmata covering the field of i.e. microeconomics. A dictionary on markets, for example, as a sub-field of microeconomics, would be much better suited to allow a systematic arrangement. However, special dictionaries tend to cover more than just a sub-field and therefore, a systematic arrangement does not appeal to them. This is the task of terminology. As pointed out by Bergenholtz: “Systematic processing of comprehensive subject areas and their corresponding terminologies is a both time-consuming and resource-demanding process, involving a lexicographical team consisting of both experts and terminologists”. This time-consuming and resource-demanding process of systematic

arrangement is not the task of specialised lexicography, but of terminology. The task of specialised lexicography is to provide an overview of the lemmata of a specific field or several familiar fields in alphabetic order. If users of a specialised dictionary are in need for more specialised and concretised information, they may consult a terminological data bank of the corresponding sub-field where terms are arranged in systematic ordering according to their natural concept structure.

6.3.6 Summary

This chapter deals with similarities and differences of specialised lexicography and terminology/terminography with regard to efficiency, expert type, working methods, field coverage and macrostructure.

It is pointed out that LSP dictionaries are not very efficient as most of them do not provide sufficient encyclopaedic information which leaves a layperson in great danger of misunderstanding things. Moreover, the dictionary user is not provided any assistance in making a choice of equivalent. Terminology, on the contrary – although restricted to a small sub-field – offers data banks including linguistic, encyclopaedic and conceptual information which leaves no room for misguidance. Thus, terminologies can be used by laypersons and experts alike. Although the workload in terminology is heavier than in specialised lexicography, the outcome of terminology work is more efficient than the outcome of specialised lexicography.

Concerning expert type, terminology and specialised lexicography feature similar characteristics: To make their work successful terminologies and dictionaries have to be written by teams consisting of a terminologist and a linguist/lexicographer, respectively, and a specialist of the respective subject field.

Despite this similarity, specialised lexicography cannot be equated with terminography. The true nature of terminography is very different to the nature of LSP lexicography. It may be true that both products are rather synchronic than diachronic; their focus is on the representation of new words and terms and not on the explication of the development of a lexicon. Further, some products of specialised lexicography may be aimed at experts instead of laypersons. However, the statement that lexicography products are rather normative than descriptive is wrong. Contrary to terminography, the task of lexicography is not to invent and standardise new words, but to represent the existing lexicon of speakers of a language. Thus, its primary purpose is descriptive, whereas the primary purpose of terminography is normative. The assumption that LSP lexicography is rather onomasiological than semasiological cannot be accepted at all. Whereas the terminographer establishes a list of concepts and then assigns a certain designation to each concept, the lexicographer establishes a list of words and describes them semantically by means of definition. The working methods of terminography and LSP lexicography follow two entirely contrary approaches.

Another difference is the field coverage of both disciplines. Multi-field dictionaries cannot provide an overall view of the individual subject field. This is true and leads to the supposition that terminology and specialised lexicography may complement each other: Whereas LSP lexicography provides a gross overview of lemmata and their synonyms that may belong to different sub fields, terminology offers detailed knowledge on a clearly differentiated sub-field.

A dictionary must adhere to an alphabetic macrostructure of its lemmata. Even though an alphabetic order is contrary to the natural structure of the lexicon, it is obvious that anything other than alphabetical classification in LSP lexicography would lead to chaos and confusion. In this point, terminology is clearly superior to

LSP lexicography. Due to its principle of covering clearly delineated fields, terminological products are able to present their terms arranged in systematic ordering according to their natural concept structure.

Conclusively, it is to say that terminology is in no danger of being superseded by LSP lexicography. The two disciplines are so very different with regard to their true nature, working methods and macrostructure, that none of them may redundantise the other. In fact, terminology and LSP lexicography complement each other in many facets. Laypersons and experts alike benefit from having both products available on the market.

7. Conclusions

This master thesis is a literature review of the general theory of terminology as to which extent it represents terminology as an independent discipline. It challenges the theory with respect to the concept-term relation, the relevance of syntax and compares it to the features of specialised lexicography.

The results are as follows:

Concept-term relation

This literature review has found that the importance of terms is undervalued by the traditional theory. Terms form the link between the different spheres relevant to terminology: (a) the language system → langue, where concepts and concept systems belong; (b) parole → the sphere of speech; (c) the referential world → home of the referent of the concept; and (d) the extra-linguistic reality. It is due to terms that concepts can be perceived of and that they can be assigned to their referent. Further, terms enable the placement of concepts in a concept system. Additionally, terms guarantee the transfer of the outcome of terminological work to the extra-linguistic world. Otherwise, no understanding, communication, translation, interpretation, etc. would be possible.

Thus, it can be concluded that the assumed precedence of concepts over terms is incorrect and that the definitions and theoretical descriptions of concept, term as well as the concept-term relation are not sufficient and have to be revised. Terms have to be represented as the major tool of terminology work.

The relevance of syntax

This thesis has found that in many respects syntactic rules are relevant for terminology. Terminologists make use of syntax, when

- delineating concepts by means of definition.
- transferring referents from the referential world into linguistics signs → the terms.
- representing terms in their use in context

Additionally, it was examined that terms, the basic unit of terminology,

- are language units and therewith form a part of the lexicon. Thus they present the same characteristics as words containing phonological, morphological, syntactic information.
- are vehicles of communication as well and it is due to them that special communication can be performed. As communication cannot be successful without observing the rules of syntax, the theory of terminology cannot reject syntactic rules.
- are cognitive units and it is due to them than concepts *can* be perceived of by the human brain by means of syntactic rules of thought describing the formation of concepts similar to syntactic structures in a language.
- belong to *langue and parole* and thus are subject to the theory of syntax as well as to the actual distribution of syntactic rules.

It can be concluded that the general theory of terminology is wrong to assume that the rules of syntax are not relevant to terminology. Terminology has to include syntax to its rules and principles.

Terminology and specialised lexicography

On the basis of five theses by Bergenholtz, this thesis compared terminology and specialised lexicography with respect to efficiency, expert type, working methods, field coverage and macrostructure. The outcome is as follows:

- Efficiency: Although the workload in terminology is heavier than in specialised lexicography, the outcome of terminology work is more efficient than the outcome of specialised lexicography with respect to linguistic and encyclopaedic information.
- Expert type: Both terminology and LSP lexicography work have to be written by teams of a terminologist and a linguist/lexicographer, respectively, and a specialist of the respective subject field.
- Working methods: Although there are some similarities, the core methods of both fields are different. While lexicographic products are rather descriptive, terminographic products are rather normative. Further, terminography follows the onomasiological approach while LSP lexicography is focussed on the semasiological approach.
- Field coverage: LSP lexicography provides a gross overview of lemmata and their synonyms that may belong to different sub fields; terminology offers detailed knowledge on a clearly differentiated sub-field.
- Macrostructure: Terminological products are presented in systematic ordering whereas LSP lexicographic products must adhere to an alphabetic macrostructure.

It can be concluded that terminology will not be redundantised by specialised lexicography. Both fields are so very different with regard to their efficiency, nature, method and field coverage that none of them can replace the other.

This thesis has come to the conclusion that the general theory of terminology is not sufficient to represent terminology as a discipline of its own. In its present state, the terminology theory cannot be clearly separated from the theory of other related fields. The methods and practises of terminology, however, are unique, and should be presented as such. Therefore, it will be a task of the future to elaborate on the general theory in such a way that it accounts for *all* the principles relevant to terminology work and thus enables its introduction as an autonomous field in science.

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