

Øivin Andersen, Department of linguistics and comparative literature,
University of Bergen, Norway

Terminology and pragmatics

It is fairly well known that there are specific relations between surface syntactic structures and pragmatic functions in languages of the world. In so called functional approaches to syntax pragmatic factors are in fact the key to the explanation of these structures.

In traditional terminological theory these factors have been only implicitly present in basic works such as Wüster's. Nevertheless, they are present in his works, and they can be deduced from them and recast in more recent pragmatic theories.

In this paper I will try to demonstrate how this can be done in terms of Grice's implicature theory combined with modern argument structure theory in syntactic and lexical theory. My aim is to accomodate this framework to a variant of Wüsters vertical model of LSP applied to terminology.

More specifically, pragmatic notions such as determination and specification, and syntactic-pragmatic notions such as packing and unpacking of terms will be discussed. Data are primarily drawn from deverbal nominals taken from technical texts associated with the Norwegian petroleum industry.

Introduction

As is fairly well known, modern terminological theory has opened up for dynamic, pragmatic and social dimensions over the years. Recent developments in philosophy, psychology, sociology and linguistics have influenced theory development in terminology. Many of these pragmatic aspects of terminology have only implicitly been present in the classical works of Wüster.

In linguistics it has also been well known that there are specific relations between syntactic surface structures and pragmatic functions in languages of the world, especially in the so called functional approaches to linguistics.

In Laurén et al's book **Terminologie under der Lupe** from 1998 Wüster's implicit ideas are spelled out and given a functional

interpretation. In dealing with the problem of lexical precision the following basic questions are derived:

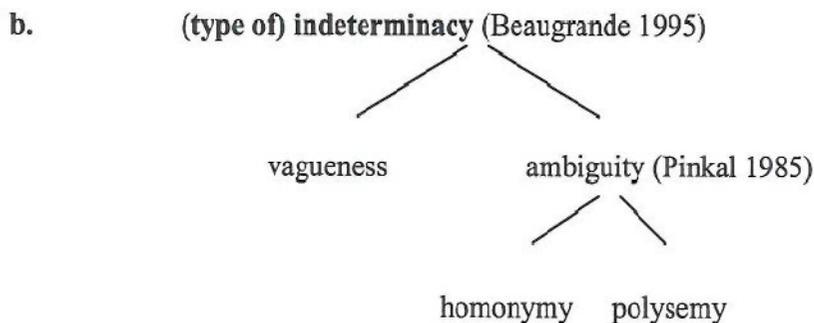
a.

1. Which lexical components are present in the terminological expression?
2. What do the lexical components reveal about the terminological concept?
3. What are the syntactic relations between the lexical components?
4. How do components and relations lead to various interpretations of the terminological concept?

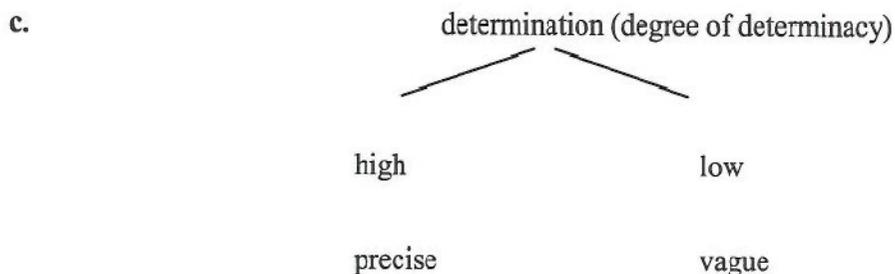
In this paper I want to address these questions as exemplified by deverbal nominalizations in technical documentation relating to the Norwegian petroleum industry.

Determination and specification

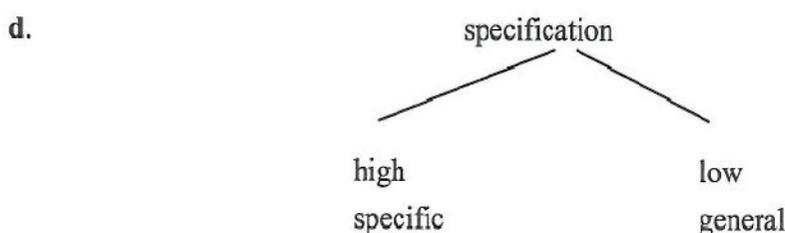
Whereas the concept "precision" has been a crucial concept in terminology from the start, the opposite concept "vagueness" has been regarded as an unwanted deficiency to be avoided in terminology and LSP. Only the contributions of Robert de Beaugrande seem to have focussed on interesting aspects of vagueness by introducing the concept of indeterminacy into the study of LSP. This concept may be subdivided into vagueness and ambiguity, and ambiguity may be further divided into homonymy and polysemy, as pointed out by Pinkal (1985):



Although the distinction between vagueness and ambiguity is a crucial one, I also propose to make a distinction between determination (or degree of determinacy) and specification:



Both these concepts are scalar rather than discrete, i.e. a concept with high determination (or degree of determinacy) is a precise concept, whereas a concept with low determination is a vague concept. Further: A concept with high specification is a specific concept, whereas a concept with low specification is a general concept, in the traditional sense:



At this point we need to introduce definitions of vagueness and ambiguity:

e. Definition of vagueness:

Vague concepts have a large extensional domain of indeterminacy. An extensional domain of indeterminacy is a domain where it sometimes is impossible to decide whether a given referent is a member of the extension of the concept or not, even in context. These concepts always have low determination.

f. Definition of ambiguity:

Ambiguous concepts contain two or more interpretations which exclude each other mutually. It is always possible to decide which interpretation is the correct one in context. These concepts do not necessarily have low determination.

Let us take two examples from item g.:

g. Packing and unpacking

1. Borer dokumenterer avvik.	Driller documents deviation.
2. Borer's dokumentering av avvik	Driller's documentation of deviation
3. Dokumentering av avvik	Documentation of deviation
4. Avviksdokumentering	Deviation documentation
5. Kjøpmannen selger varer på gaten.	The merchant sells goods on the street.
6. Gateselger	Street seller (Laurén et al 1997:210)
7. Møbelselger	Furniture seller
8. Borer's dokumentering av boresjef	Driller's documentation of the toolpusher
9. Dokumentering av boresjef	Documentation of the toolpusher
10. Borer's avviksdokumentering var på 15 sider.	Driller's documentation contained 15 pages.

Example 3. of item **g.** (above) *documentation of deviation* is ambiguous in the sense that *documentation* can be interpreted to refer to either a process (i.e. the activity of documenting something), or to a product (i.e. the actual documents resulting from the process). The two interpretations are quite distinct and have fairly high determination. Contexts will always provide the necessary keys for arriving at the interpretation intended by the sender. So this is a clear case of ambiguity.

Let us look at example 2. (of item **g.**), where we have the same ambiguity *driller's documentation of deviation*. In the **result** reading it seems that the relation between the genitive noun *driller's* and the deverbal noun *documentation* is a vague relation and has low determination: There are several possible interpretations involved here, and it seems impossible to identify a distinct number of interpretations that can be put on a list. Rather, they seem to form a continuum without distinct borders: One possible interpretation is that the driller owns the documentation, another that he has borrowed it for a specific task, or, he might have referred to it on various occasions, or of course he might have written it. Other possibilities also exist. In other words he is associated with it in some sense, but we have no access to the intended sense without more context and background information, and even then we may not reach a more precise interpretation. So the relationship between *driller's* and *documentation* in the result reading of 2 seems to be a case of vagueness.

In the **process** reading of 2. this vagueness is reduced: The genitive is most likely to be interpreted as a derived agentive, i.e. the one who performs the documentation.

Economy

The concept of economy is likewise a scalar concept. It relates to what Wüster calls "Kürzungsgrade" (1985:56ff), i.e. the more expression material you invest in the formation of a term, the less economical you are. High degree of economy is of course a well known crucial demand in terminology formation: A term should be as short as possible.

But, as pointed out by Laurén et al (op.cit.), the demands for precision and economy tend to contradict one another. I will suggest that these two terms are not only scalar terms, but also in many cases complementary to one another: the more economical you are in term formation, the less determinacy will be maintained, i.e. the more indeterminacy (vagueness or ambiguity) will result.

Packing and complexity

The Wüster concept "Kürzungsgrade" corresponds to morphosyntactic complexity: A terminological concept can be represented by a syntactic phrase, a compound or a derived word. The syntactic phrase is more complex than a compound, which in turn is more complex than a derivation. This is illustrated by Wüster's German example under h.:

h. Kürzungsgrade

- | | |
|---------------------------|--|
| 1. Relativsatz | z.B. Schrank, der aus Stahl hergestellt ist. |
| 2. Partizip | z.B. aus Stahl hergestellter Schrank |
| 3. Präposition | z.B. Schrank aus Stahl |
| 4. adjektivische Form | z.B. stählerner Schrank |
| 5. zusammengesetztes Wort | z.B. Stahlschrank |

(Wüster 1985: 48)

Example 1. (the relativized NP *Schrank, der aus Stahl hergestellt ist*) is the most complex construction (and has the lowest Kürzungsgrad) and 5. (*Stahlschrank*) is the least complex (and has the highest Kürzungsgrad) morphosyntactically.

In some standards based on Wüster it is also pointed out that the shortest term variants are the most ambiguous ones. Laurén et al. (op. cit.) also point out that morphosyntactic complexity can be seen as a scalar concept. In order to describe the relationship between the five quasisynonymous constructions in item **h**. I will apply the dynamic terms packing and unpacking to describe "Kürzungsgrade".

Packing refers to the process of wrapping up something; e.g. complex and long strings of words. The idea is to make the string shorter and gain economy of expression. Unpacking is of course the opposite process. In Wüster's German examples in item **h**. 1. is the most unpacked expression and 5. is the most packed expression. So syntactic complexity seems to increase with unpacking.

But complexity can also be seen as a pragmatic hermeneutic concept in the sense that the more difficult it is to pin down the interpretation of an expression, the more complex the expression is. In that case pragmatic complexity will be inversely proportional to specification: The lower specification is, the higher is the pragmatic complexity.

Let us return to the examples in item **g** (above): The most packed variant has lowest specification (i.e. example 4. *avviksdokumentering* "deviation documentation". 3. *dokumentering av avvik* is more specific than 4., but less specified than 2. *borers dokumentering av avvik* (*driller's documentation of deviation*), and 1. *Borer dokumenterer avvik* (*Driller documents deviation*) contains the most specific expression. This means that pragmatic complexity is inversely proportional to morphosyntactic complexity: The more packing you have, the less syntactic complexity you get, but the more pragmatic complexity you get. I will expand on this shortly.

In terms of linguistic economy we see that 3. is more economic than 2., and that 4. is more economic than 3. So more packing implies more economy. The price you have to pay is loss of specification.

The more you pack a deverbal term, the less specific it becomes. Still it does not necessarily become less precise (or determined), as we indicated in definition f. above. Loss of specification, often called underspecification in the lexical literature, often lead to ambiguity (in this case syntactic polysemy): The more you pack (and consequently underspecify), the more potential interpretations emerge. These interpretations are not necessarily vague.

In item g (packing and unpacking above), in example 1 the verb *dokumentierer/documents* occurs in its full, prototypical form as a finite verb functioning as the nucleus of the predicate. In this unpacked version the verb still retains its basic verbal properties, i.e. the ability to assign argument structure to the other constituents of the sentence including the distinction between arguments proper and adjuncts, or, valency dependent and valency independent constituents.

In 5. *The merchant sells goods on the street*, *goods* is an argument proper whereas *on the street* is an adjunct. If you nominalize into a nomen agentis, as in 6., *streetseller*, the first morpheme *street* becomes ambiguous, i.e. loss of specification (as pointed out by Laurén et al. op.cit): It can mean "a person who sells streets" (which is pragmatically less likely), or, it can mean "a person who sells goods on the street".

Notice that none of these interpretations are vague, but the packing of 5. into 6. has resulted in underspecification with respect to which constituent the verb *to sell* has brought along with it through the process of nominalization. In the first interpretation of 6. *street* is a derived direct object, i.e. an argument. In the second interpretation of 6. *street* is an adjunct. Consequently, packing tend to give rise to conflation (loss of specification), but not always. Thus in 7. "furniture seller" only the first interpretation is available, i.e. the one where *furniture* is a derived direct object.

Thus i 4. *avviksdokumentering/deviation documentation* the morphological process of compounding gives rise to the same potential ambiguity: "to document deviation" or "to use deviation to document something". This ambiguity is less likely in 2. *Driller's documentation of deviation.*, and 3. *documentation of deviation.* As in 1. *Driller documents deviation*, both argument structure and allocation of participant roles seem quite clear: agent is unambiguously coded as the subject (*driller*) in 1., and as a genitive noun in 2. (*driller's*). Patient (or theme) is unambiguously coded as a direct object in 1. (*deviation*) and as a prepositional phrase (*of deviation*) in 2. Consequently, we may say that 2. and 3. are more specific than 4.

Still, the potential specification in 2. and 3. is less than in 1., because the interpretation of the prepositional phrase in 2. and 3. as a patient depends on the inanimacy of the referent of the complement of the preposition: If the referent is animate, as in 8., *Driller's documentation of the toolpusher*, the potential of interpretation increases (as does pragmatic complexity), and specification is reduced accordingly. An interpretation of the participant role of the prepositional phrase in 8. which is parallel to the one in 2. is the most likely one (i.e. the role of patient), but an interpretation where the prepositional phrase has an agentive role is not excluded, at least not in the Norwegian variant.

In fact, if the genitive phrase is deleted, as in 9., *dokumentering av boresjef/documentation of the toolpusher*, the agentive role for the prepositional phrase becomes the most likely one.

In 10. *Driller's documentation contained 15 pages*, the immediate context reveals that *documentation* has a result reading. In that case the genitive *driller's* must be analyzed as an adjunct, i.e. a non-argument. The vague relation between the genitive and the head noun *documentation* is the same as in the result reading of example 2. This means that the ambiguity is disambiguated by the context, as 10 illustrates, but vagueness is not made more specific by the context, as the definitions of vagueness and ambiguity above predict.

It is often very difficult to distinguish between vagueness (or underdetermination) and ambiguity (or underspecification). However,

many functional linguistic studies indicate that these two phenomena are inherently present in the use of natural human language in every domain, including LSP and terminology. Without underspecification human languages could not fulfill their function as flexible and efficient communicative tools.

So it seems that it is more efficient in language use to underspecify rather than to overspecify verbal expressions in language use.

Determination in non-derived nominal terms

An unpublished investigation conducted by two of my ph.d. students may serve to illustrate the function of underspecification. The Norwegianization of the English terms used in the off-shore petroleum industry involved the use of recommended morphosyntactically defined criteria of motivation. Thus a term like *drivrør* "rotating drill pipe", is considered a motivated term because the term expression encodes functional characteristic features of the terminological concept. The corresponding English term *kelly* lacks this motivation and is considered unmotivated. The investigation contained many such pairs of motivated and unmotivated terms.

It turned out that the Norwegian engineers working in the North Sea preferred the English unmotivated terms to the Norwegian motivated ones. There are several possible explanations for this, and the issue is quite complex, but a possible explanation can be spelled out in terms of specification. My suggestion is that the term *drivrør* "rotating drill pipe" is overspecified to the experts because *drivrør* codes knowledge that is common ground knowledge to the engineers.

As modern pragmatics has pointed out, this kind of knowledge should not be coded. As Grice puts it in one of his maxims of quantity: "Do not make your contribution more informative than is required (Grice 1975:45). In Sperber et al's relevance theory the set of assumptions which the communicator intends to make manifest to the addressee must be relevant enough to make it worth the addressee's while to process (Sperber & Wilson 1986:158).

This means that the concept of motivation must be used transitively in terminology: Motivated for whom? A term like *drivrør* is motivated for a non-expert because the coded information in the term is not common ground knowledge and consequently relevant enough to process. To the expert this does not seem to be the case.

Conclusion

This presentation, I hope, illustrates that the four questions in item **a.** above, derived from Wüster's work, are crucial in terminology. They also point to the fact that terminology and pragmatics seem to be in a kind of cybernetic balance: Terminology cannot be analysed in isolation from pragmatic considerations.

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