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# Textual Condensation in Printed Dictionaries. A Theoretical Draft\*

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**Abstract:** This article presents an excerpt from a theory of lexicographic texts which deals particularly with dictionary articles. Almost all characteristics of dictionary articles considered as typically lexicographic may be regarded as results of textual condensation processes. A theory of textual condensation in lexicography thus makes it possible to analyse the lexicographic textual condensation from a uniform perspective; it allows us to calculate exactly the degree of textual condensation, it contributes to the construction of a scientific predicate *user-friendlier as*, and gives us insights which will make the formulation of dictionary articles more teachable.

The theory consists of two parts: a partial theory of inner and a partial theory of outer textual condensation. The first part explains in which way textual condensation may be understood as a process leading from a full text (a text showing complete cohesion and explicit syntax) to a condensed article text (with addressing as syntax substitute and dependence on a metatext). With respect to a monosemous lemma sign, the textual condensation process goes through only one stage, to be exemplified here. With respect to a polysemous lemma sign, there is a second stage, including shifts to the left. Certain article types with certain microstructures such as the annexed microstructures may go through a third stage of textual condensation, accompanied by shifts to the right.

The second part of the theory deals with the condensation processes which regard the carriers of the guiding element and which, *inter alia*, lead to reference articles and lemma clusters.

Finally, attention is drawn to a different form of textual condensation regarding the proportion of printed characters in relation to the total printed matter.

**Keywords:** LEXICOGRAPHY, TEXTUAL CONDENSATION, LEXICOGRAPHIC THEORY, DICTIONARY ARTICLE, LEXICOGRAPHIC TEXTUALIZATION, LEXICOGRAPHIC TERMINOLOGY, LEXICOGRAPHIC MICROSTRUCTURE, LEXICOGRAPHIC MACROSTRUCTURE, INNER TEXTUAL CONDENSATION, OUTER TEXTUAL CONDENSATION

**Opsomming:** *Tekstuele verdigting in gedrukte woordeboeke. 'n Teoretiese konsep.* Hierdie artikel bied 'n uittreksel van 'n teorie van leksikografiese tekste wat spesifiek handel oor woordeboekartikels. Feitlik alle kenmerke van woordeboekartikels wat as tipes

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leksikografies beskou word, kan gesien word as die resultaat van tekstuele verdigtingsprosesse. 'n Teorie van tekstuele verdigting in die leksikografie maak dit dus moontlik om leksikografiese tekstuele verdigting vanuit 'n uniforme perspektief te analiseer; dit stel ons in staat om die graad van tekstuele verdigting presies te bepaal, en dra by tot die daarstelling van 'n wetenskaplike predikaat *meer gebruikersvriendelik as*, en lewer insigte wat die formulering van woordeboekartikels meer onderrigbaar maak.

Die teorie bestaan uit twee dele: 'n deelteorie van binnetekstuele verdigting en 'n deelteorie van buitetekstuele verdigting. Die eerste gedeelte verduidelik hoe tekstuele verdigting verstaan kan word as 'n proses wat verloop van 'n volle teks ('n teks wat volledige samehang en eksplisiete sintaksis vertoon) na 'n verkorte artikelteks (met adressering as sintaktiese plaasvervanger en die afhanklikheid van 'n metateks). In die geval van 'n monosemiese lemmamerker verloop die tekstuele verdigtingsproses slegs deur een stadium en dit word hier toegelig. By polisemiese lemmamerkers is daar 'n tweede stadium wat verskuiwings na links insluit. Sommige artikeltipes met sekere mikrostrukture soos die aangehegte mikrostrukture mag deur 'n derde stadium van tekstuele verdigting gaan, met gepaardgaande verskuiwings na regs.

Die tweede deel van die teorie handel oor die verkortingsprosesse wat betrekking het op die draers van die gidselement en wat onder andere lei tot verwysingsartikels en lemmagroepes.

Ter afsluiting word die aandag gevestig op 'n ander vorm van tekstuele verdigting, nl. die verhouding van gedrukte karakters tot die totale gedrukte materiaal.

**Sleutelwoorde:** LEKSIKOGRAFIE, TEKSTUELE VERDIGTING, LEKSIKOGRAFIESE TEORIE, WOORDEBOEKARTIKEL, LEKSIKOGRAFIESE TEKSTUALISERING, LEKSIKOGRAFIESE TERMINOLOGIE, LEKSIKOGRAFIESE MIKROSTRUKTUUR, LEKSIKOGRAFIESE MAKROSTRUKTUUR, BINNETEKSTUELE VERDIGTING, BUITETEKSTUELE VERDIGTING

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## 1. Preliminary remark

The aim of this article is to present a small excerpt from a theory of lexicographic texts. Terms which originate in this theory are used and are not all explicitly introduced here. I do hope, though, that this paper will present a coherent picture of this theory.<sup>1</sup>

So far, a complete theoretical draft of textual condensation in lexicography does not exist. My proposal for such a draft is relatively complex (cf. Wiegand 1996b). Please keep in mind that in this article the theoretical draft is portrayed in extremely simplified terms. Without simplification it would not be possible to portray the complete theoretical draft within the framework of an article. In addition, the risk of not being understood *hic et nunc* would be relatively high.

## 2. On the relevance of a theoretical draft of textual condensation

Almost everybody knows that in dictionaries it is particularly the texts of the dictionary articles which have specific features, with the result that one can speak of genuine lexicographic textualization. What is not common knowledge is the fact that almost all features of article texts which may be regarded as being genuinely lexicographic may be explained as the results of processes of textual condensation. The development of a complete theoretical draft of textual condensation will, therefore, allow us to explain lexicographic textualization proceeding from a single approach and seen from a uniform perspective. There are several reasons why this is of interest to dictionary research.

*Firstly*, it will make dictionaries belonging to the same dictionary type exactly comparable with respect to specific textual features, i.e. in such a way that the respective degree of textual condensation may be calculated in a strict mathematical sense of the word.

*Secondly*, since the respective degree of textual condensation has a strong influence on the text processing by dictionary users, the methodological possibility of being able to calculate the degree of textual condensation represents an essential step in developing a manageable formula by which the user-friendliness of dictionaries may be calculated (cf. Wiegand 1996b).

*Thirdly*, a complete theoretical draft of lexicographic textual condensation is, last but not least, useful in order to make the writing of dictionary articles teachable in such a way that further correlations in the formulation of article texts will be recognized.

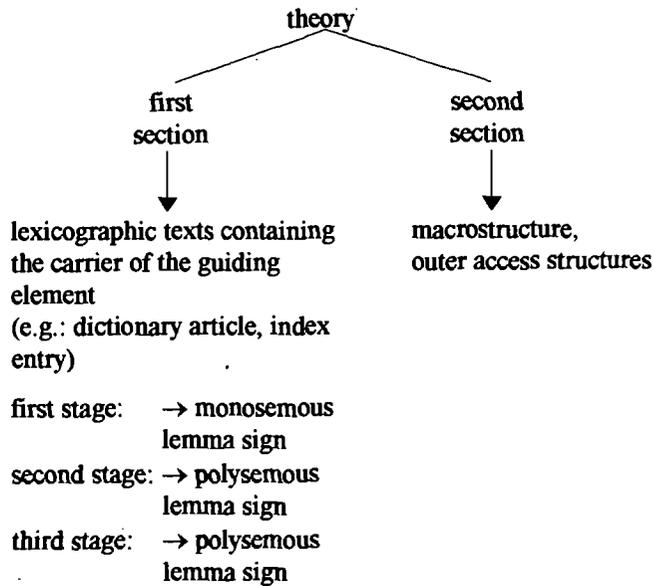
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1 Important parts of this theory are already published in German and English (cf. Hausmann and Wiegand 1989; Konerding and Wiegand 1995; Pan Zaiping and Wiegand 1995; Wiegand 1983a; 1983b; 1984; 1987; 1988; 1988a; 1988b; 1989; 1989a; 1989b; 1990; 1995; 1996; 1996a; 1996b; 1996c; 1996e); a complete version will be dealt with in the second volume of my book "Dictionary Research" which is in preparation.

### 3. Outline of the theoretical draft

The theory of textual condensation in lexicography consists of the following two parts (cf. fig. 1):

- a partial theory of inner textual condensation; and
- a partial theory of outer textual condensation.



**Fig. 1:** Two parts of a theory of textual condensation in printed dictionaries

The inner textual condensation concerns all those lexicographic partial texts containing a carrier of the guiding element, in particular dictionary articles and index entries. Regarding dictionary articles in alphabetical order, three different stages of inner textual condensation can be distinguished.

With respect to articles of monosemous lemma signs, the process of textual condensation only goes through the first stage and the procedures of textual condensation applied become effective only in regard to the elements belonging to the domain of the concrete microstructure (sensu Wiegand 1989a; cf. Wiegand 1990[91]).

With respect to articles of polysemous lemma signs the process of textual condensation initially goes through the first stage and then through a second stage, and for specific types of microstructures, a third stage. During the

second and third stage of inner textual condensation with respect to articles appearing in alphabetical dictionaries the procedures of textual condensation applied also become effective in regard to the structures which are formed by the textual constituents, particularly the microstructures.

Outer textual condensation, to be discussed in the second part of the theory, concerns the macrostructure as well as all outer access structures. It becomes effective in regard to the elements belonging to the domains of concrete macro- and access structures.

I did not intend to develop a specific part of the theory which would deal with that type of textual condensation which relates to the mediostructure (sensu Wiegand 1996). The reason for this is the following: with respect to the mediostructure, textual condensation processes can only relate to the elements and not to the relations. Most of the elements belonging to the domain of the mediostructure, however, also belong to either the macro- or the microstructure. This is why the textual condensation which relates to the elements regarding the mediostructure will be discussed within the framework of the two partial theories mentioned above.

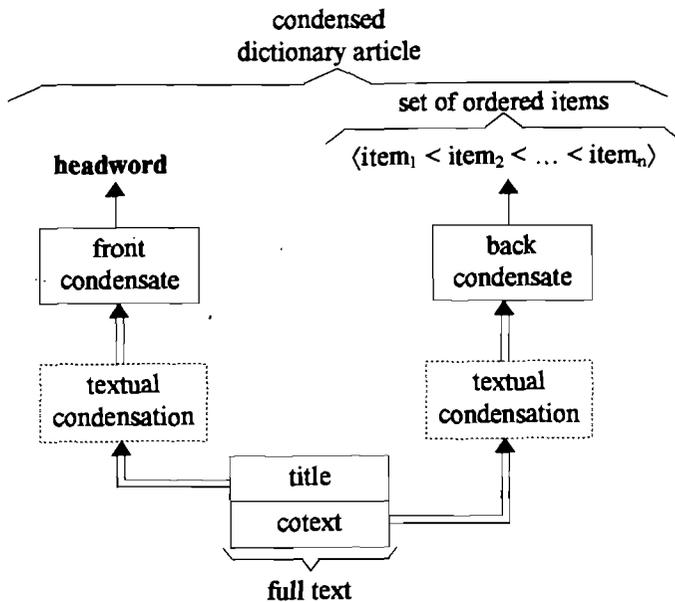
The small number of elements belonging to the mediostructure, which at the same time represent elements belonging to the structure of the front and back matter, do not have to be explicitly dealt with in this theory, just like the other results of the textual condensation appearing in the structure of the front and back matter. The reason for this is that these results are not results of the textual condensation which are specific for lexicographic texts.

#### 4. Basic terminology of a theory of textual condensation in printed dictionaries

Every standardized dictionary article, i.e. every article which is formulated in accordance with a set of lexicographic standards relating also to the textual condensation (cf. fig. 2), may be regarded as a two-part condensate created by applying procedures of textual condensation in relation to a respective full text. The full text consists of a title and its cotext. By means of textual condensation the title becomes the lemma (or: headword) and the cotext turns into a linearly structured set of items relating to that lemma sign. Thus, every dictionary article may be regarded as a text which consists of two successive partial condensates (cf. Wiegand 1988a; 1996e).

The full text is a necessary construct of the theory. For instance, if one speaks of a dictionary article being condensed, then a procedure of text processing is presupposed in which a text  $T_1$  is condensed into another text  $T_2$ . The presupposed text  $T_1$  is one of the possible full texts. There are a number of full texts which may be reconstructed for every dictionary article, proceeding from the condensed dictionary article. The following is valid for all full texts of a dictionary article:

- (a) They have to be the same with respect to the elementary propositional contents, with regard to either the form of the lemma sign or the form of other lexicographically processed terms, and they have to be the same with respect to the number of these propositional contents as well as their order.
- (b) As far as the selection of the missing relational expression between the lemma and the item giving the meaning paraphrase is concerned, they may be different.
- (c) They may be different on the surface of the text.



**Fig. 2:** Visualisation of the condensation process: from a full text to a condensed dictionary article (for further details see Wiegand (1988a; 1996b));  $\text{item}_1 < \text{item}_2 = \text{item}_1 \text{ precedes } \text{item}_2$

At this point, I would like to present the following short dictionary article (=  $\text{da}_1$ ), taken from the *Collins Concise Dictionary of the English Language* (CCDE):

$\text{da}_1$ : **date palm** *n.* a tall feather palm grown in tropical regions for its sweet edible fruit

**Fig. 3:** Dictionary article from CCDE

In regard to this dictionary article one may reconstruct two full texts, which contain the following title: Dictionary article on *date palm*

This title could have the following cotexts, for example:

- (1) *Date palm* is a noun. A date palm is a tall feather palm grown in tropical regions for its sweet edible fruit.
- (2) *Date palm* is a noun, and its meaning can be given by the paraphrase "a tall feather palm grown in tropical regions for its sweet edible fruit".

The following becomes obvious: the propositional content *that date palm is a noun* is the same in (1) and (2). The presentation of the missing relational expression between the lemma and the item giving the meaning paraphrase, however, is different.

It is possible to lay down standards for the reconstruction of the full texts. Reconstructing the full texts by means of standards becomes necessary in that case — as we will see in more detail — in which one intends to calculate the degree of textual condensation of dictionary articles and compare it with others.

A full text which is subjected to at least one (but not more than a finite number of) textual condensing operation is related to the condensate, i.e. a condensed text as a result of subjecting the full text to textual condensing operations, in several different relations. The following four relations are of special importance:

- $x$  is a standardized full text of the condensate  $y$
- $y$  is a condensate of a standardized full text  $x$
- $y$  is denser in propositional terms than  $x$
- $x$  is less dense in propositional terms than  $y$

The latter two relations may also hold for different condensates of the same full text.

The textual condensing operations mentioned, which may also be called methods of textual condensation, are the following: shortening, abbreviating, omitting, shifting, substituting, summarizing, and embedding.

The respective application of the different methods of textual condensation is laid down in the standardization instructions for textual condensation, which are included in the instruction manual.

Texts do not have cohesion and coherence in the simple positivistic sense. Rather, these two different types of textual connection are always the result of interpretations.

We can speak of cohesion if it is possible to establish a relation at the syntactic, propositional, and referential level (cf. Hellwig 1984a). Subjecting a full text to methods of textual condensation results in denser cohesion; this means that on the way from the full text to the condensate many parts of the full text

which give cohesion instructions are lost.

Despite the fact that there are common traditions of textual condensation, which correspond to the users reading habits within the framework of their general practice of dictionary look-up, the following is generally valid: the results of textual condensation have to be explained in one of the metatexts of the dictionary.

Informally, we now have at our disposal a selected number of essential terms of the theory. In the following, the theory of textual condensation in lexicography will be portrayed by means of examples.

## 5. Inner textual condensation

As we have seen in section 3, inner textual condensation pertains to lexicographic partial texts containing a carrier of the guiding element. We will now take a look at the first stage of textual condensation by means of a dictionary article on a lemma sign which the lexicographer interpreted as being monosemous.

### 5.1 The first stage of the inner textual condensation

Let us take a look at  $da_2$ , a dictionary article taken from the *Handwörterbuch der deutschen Gegenwartssprache* (= Concise Dictionary of Contemporary German; abbreviated: HWDG):

$da_2$ : **B**öschung, die; -, -en meist durch Mauerwerk, Steine, Pflanzen befestigte, schräg abfallende Fläche im Gelände, bes. die eines Damms, Walls: die B. bepflanzen, befestigen

Translation of  $da_2$ :

$da_2$ : **bank**, the; -, -s, the sloping side of an area of raised ground, particularly that of a dam, an embankment, often reinforced by a thick wall, mound of stones or plants; to plant, reinforce the bank

Fig. 4: Dictionary article  $da_2$  from HWDG and its translation

In the following, we will at first take a look at one of the possible full texts of  $da_2$ . The numbers appearing in the square brackets do not belong to the full text ( $ft_1$ ); they merely serve as a means of allowing easier reference to the text.

$ft_1(da_2)$ : [1] Dictionary article on *Böschung* [bank]. [2] The proper spelling of *Böschung* is |*Böschung*|. [3] The form of the nominative singular is *Böschung*. [4] *Böschung* is stressed on the first short syllable. [5] *Böschung* is a noun; [6] its gender is female. [7] The form of the genitive singular is *Böschung*. [8] The form of the nominative plural is *Böschungen*. [9] *Böschung* means any of: *meist durch Mauerwerk, Steine, Pflanzen befestigte, schräg abfallende Fläche im Gelände, bes. die eines Damms, Walls*. [10] Examples of the use of *Böschung* are: *die Böschung bepflanzen, die Böschung befestigen*.

We will first look at [1], the title of the full text which represents a descriptive title. Descriptive titles may be used in one of the following three ways (cf. Hellwig 1984a; Wiegand 1988a):

- (1) They are headings of a cotext.
- (2) They are used within a running text in order to make a reference to another text (i.e. their cotext).
- (3) They are used in catalogs, bibliographies etc. in order to facilitate the search for specific texts.

Particularly when used as headings of a cotext, descriptive titles have the following characteristics, which do not have to occur in combination in every title:

- They are short metatexts of the corresponding cotext.
- They contain hints on the pragmatic purpose of the cotext.
- They imply what might be questionable in the cotext and thus contain hints on the text theme.
- They may aid in interpreting the cotext.
- They confine the cotext with respect to its outer appearance.
- In their function as chapter title, title link, margin title etc. they structure texts.

If one carries out the text shortening operation on the title of the full text, i.e. "[1] Dictionary article on *Böschung*", i.e. in such a way that the text segment "Dictionary article on" is deleted, one obtains the lemma *Böschung* as the front condensate.

The question is now which of the six characteristics ascribed to the title of the full text appears in the condensate of the title, that is the lemma? Obviously, when answering the six respective questions, one has to consider that a lemma does not appear separately, but *exclusively* as part of a dictionary. The first question to be answered is the following: Can lemmata be regarded as

short metatexts of the corresponding dictionary article? The answer has to be: "Yes, they can". The reasoning leading to this answer has to be stated as follows: The title of the full text contains the noun *Böschung*. After the part of the title "Dictionary article on" has been deleted, a mentioned expression remains as lemma. It is by this lemma that the lemma sign *Böschung* is mentioned as lexical unit, the lemma sign standing for the lemma sign paradigm (cf. Wiegand 1983). This means that a user gets to know something about the corresponding dictionary article by means of the lemma, i.e. which part of the dictionary subject is processed within the dictionary article. The mentioning of linguistic signs represents the lexicographic procedure applied in order to introduce the lemma sign as referent for language-reflexive predications in the dictionary article.

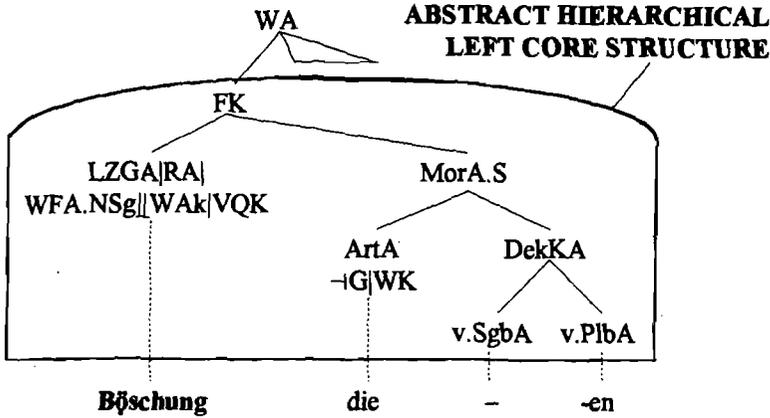
The second question, i.e. whether or not lemmata contain hints on the pragmatic purpose of the dictionary article, has to be denied. Such hints are merely conveyed by the dictionary title.

The third question, i.e. whether or not the lemma contains a hint on the text theme, has to be affirmed. Here, it has to be taken into consideration that a lemma always represents part of a dictionary belonging to a specific dictionary type. In our example, *Böschung* is a lemma appearing in a general-purpose monolingual dictionary. This lemma then conveys that specific features of the lemma sign, particularly its forms of inflection and its meaning, represent the theme of the corresponding dictionary article. If we assume the lemma *Böschung* to be part of a dictionary of synonymy in which the synonyms are presented in a cumulative way, then it apparently hints at a different theme of the corresponding dictionary article. The dictionary type therefore contributes to the determination of themes.

The fourth question, too, i.e. whether or not a lemma aids in interpreting the dictionary article, has to be affirmed. For instance, *da<sub>2</sub>* contains the condensed item giving a competence example "die B. bepflanzen". The user may infer from the lemma what the abbreviation B. stands for.

Finally, the fifth and sixth question has to be affirmed as well, because it is obvious without further explanation that lemmata confine dictionary articles with respect to their outer appearance and that they structure the word list in their function as title links.

In the following, we will turn to the full text, of which we have discussed the title so far. Let us first take a look at how the sentences [2] through [8] of the full text are condensed into the comment on form (cf. fig. 5).



**Fig. 5:** Annotated structure graph for an excerpt from the (concrete and abstract) hierarchical microstructure which can be assigned to the comment on form of *da<sub>2</sub>*; *abbreviations:* WA = dictionary article; FK = comment on form; LZGA = item giving the form of the lemma sign; RA = orthography item; WFA.NSg = wordform item for the nominative singular; Wak|VQK = marking giving the word accent and the vowel quantity; "||" = below enlarged by; MorA.S = morphology item for nouns; ArtA = item giving the definite article; "-|" = what follows, is inferable; G = gender; WK = word class; DekKA = item giving the declension class; v.SgbA = condensed item giving the singular formation; v.PlbA = condensed item giving the plural formation.

I will now describe the process of condensation of the comment on form step by step.

*Step 1:* Sentence [2] of the full text is omitted. Instead, a metatext of the corresponding dictionary will tell the user that the spelling of the lemmata is in accordance with the official rules of orthography. The propositional content  $p_2$  belonging to [2] reads as follows when put into the canonic *that*-formulation:  $p_2$  = *that the proper spelling of "Böschung" is |Böschung|*. The user familiar with dictionary look-up and the metatext assigns  $p_2$  to the lemma **Böschung**. The item giving the form of the lemma sign is at the same time an orthography item.

*Step 2:* Sentence [3] of the full text is also omitted. Instead, a metatext of the corresponding dictionary will tell the user that the canonic form for lemmata by which nouns are mentioned is the nominative singular. The propositional content belonging to sentence [3] reads as follows:  $p_3$  = *that the form of the nominative singular is "Böschung"*. The user with a good knowledge of dictionary look-up can assign  $p_3$  to the lemma as well. The item giving the form of the lemma sign is therefore at the same time a wordform item for the nominative singular.

*Step 3:* Sentence [4] of the full text is substituted by a dot which is placed below the accented syllable. This results in the creation of an item giving the form of the lemma sign below enlarged by a marking giving the word accent and the vowel quantity. Since the function of the dot is explained in one of the

dictionary's metatexts, the user familiar with dictionary look-up is able to refer this dot to its address, the item giving the accented syllable, and assign to the ordered pair of dot and item giving the accented syllable those propositional contents which sentence [4] of the full text contains.

*Step 4:* Sentences [5] and [6] of the full text are substituted by the definite article *die* which follows the lemma. The metatext of the dictionary gives the explanation that the gender and the word class may be inferred from the item giving the article. The user with a good knowledge of dictionary look-up may therefore infer from the item giving the article *die*, which is addressed to the item giving the form of the lemma sign, that *Böschung* is a noun and that it is of the female gender, when he is referring the item given under the article referring to *Böschung*. In other words: the user with a good knowledge of dictionary look-up may assign to the ordered pair of *der* and *Böschung* those two propositional contents which sentences [5] and [6] of the full text contain.

Here it can be seen that it is necessary to clearly distinguish the items given in the dictionary article from lexicographic information given to a user. Pieces of lexicographic information are cognitive entities. One cannot infer them merely from a single item. One rather has to relate the item to its address, which always represents a different item. In other words: the user always obtains a piece of lexicographic information from an ordered pair of items (cf. Wiegand 1996e).

*Step 5:* When transforming the full text into the dictionary article, sentence [7] is condensed in such a way that only *Böschung* remains. Next, *Böschung* is substituted by the hyphen "-", resulting in the creation of the condensed item giving the singular formation. Within the framework of a real lexicographic process, such items are given, for instance, by applying a rule of substitution which reads "Within the framework of the item giving the declension class word stems are to be substituted by the hyphen".

For the user, the hyphen as the item giving the singular formation represents a free-standing repetition symbol. He may be able to infer a piece of lexicographic information only if he reverses, so to speak, the operation of substituting. He can do this only if he knows what the hyphen stands for at this position and if he is at the same time familiar with the linguistic form which he has to insert. Here, this form is represented by the mentioned lemma sign. This means that the repetition symbol is an item with cohesion instruction. The user has to establish an anaphoric relation from the repetition symbol to its address, the item giving the form of the lemma sign, and substitute the hyphen by the word stem which may be inferred from this item. It is only after having carried out this operation that a user will receive the information which may be stated as follows: the form of the genitive singular of *Böschung* is *Böschung*.

*Step 6:* In this step, sentence [8] of the full text, which reads "The form of the nominative plural is *Böschungen*", is first condensed in such a way that only *Böschungen* remains. Next, the word stem is substituted by the hyphen, resulting in the condensed item giving the plural formation. Here, the repetition

symbol is not free-standing, but joined to the word ending. With respect to the operations the user has to carry out in order to receive the right piece of information, the same is valid, as explained in step 5.

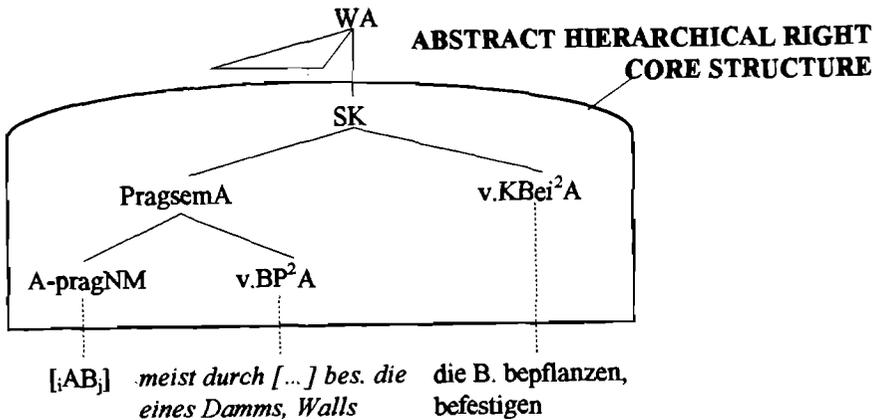
After having completed step 6 within the first stage of textual condensation, one may apply the code of the dictionary for the typographic and nontypographic structural indicators to the results obtained by the process of textual condensation. Then one will obtain the comment on form of  $da_2$ .

In the following, we will take a look at how the sentences [9] and [10] of the full text are condensed into the comment on semantics of  $da_2$ . You will find a structural graph depicting this part of the dictionary article in fig. 6.

It is a common phenomenon, about which much has been written, too (cf. Wiegand 1985 and 1989c), that in dictionary articles of modern dictionaries the two-place relational terms which establish the relation between the lemma sign and the item giving the meaning paraphrase are frequently left out. This is also true for the HWDG and thus also in regard to  $da_2$ . Incidentally, there are at least 80 possible relational terms (R) in the German language, if one includes the various forms of technical language. Examples are:

- R<sub>1</sub>: an x is a y
- R<sub>2</sub>: x means as much as y
- R<sub>3</sub>: x means "y"
- R<sub>4</sub>: x is used in order to refer to y

In these relational terms, "x" is a variable for lemma signs and "y" serves as a variable for items giving the meaning paraphrase. In the full text on  $da_2$ , I have chosen "x means as much as y" in order to formulate sentence [9].



**Fig. 6:** Annotated structure graph for an excerpt from the (concrete and abstract) hierarchical microstructure which can be assigned to the comment on semantics of  $da_2$ ; *abbreviations:* SK = comment on semantics; PragsemA = pragmatic-semantic item; v.KBei<sup>2</sup>A = condensed item giving competence examples, which allows ascertaining two competence examples; A-pragNM = item concerning the pragmatic zero marking; v.BP<sup>2</sup>A = condensed item giving meaning paraphrases, which allows to ascertain two meaning paraphrases

*Step 7:* In order to get from sentence [9] to the item giving the meaning paraphrase of  $da_2$  the following textual condensing operations have to be carried out: in sentence [9], the mentioned lemma sign *Böschung* and the relational term "means as much as" have to be deleted. If this were the only condensing operation, then the item giving the meaning paraphrase of  $da_2$  would not be condensed. However, further condensing operations have to be carried out. The word *besonders* has to be abbreviated and the word *oder* has to be substituted by a comma. If the operations of substitution just mentioned are in fact carried out, then this will result in a non-natural textual condensation, because we will obtain a section of a text, i.e. "*die eines Damms, Walls*", regarded as ungrammatical in the language which is being lexicographically processed. The non-natural textual condensation may appear in numerous variants. This is bad lexicographic practice, particularly for users who are not native speakers.

*Step 8:* In a last step, sentence [10] of the full text is condensed firstly so that only the two examples *die Böschung bepflanzen* and *die Böschung befestigen* remain. These two examples are the same with respect to the first two word forms. In the second example, *die* and *Böschung* are therefore deleted, leading to a comprimation which, in turn, results in the creation of a condensed item yielding competence examples. This allows us to determine two competence examples, i.e. *die Böschung bepflanzen, befestigen*. In this item, *Böschung* is abbreviated as B., and we obtain the item appearing in  $da_2$ . In this case, too, the result of the textual condensation is ungrammatical so that the textual condensation is non-natural.

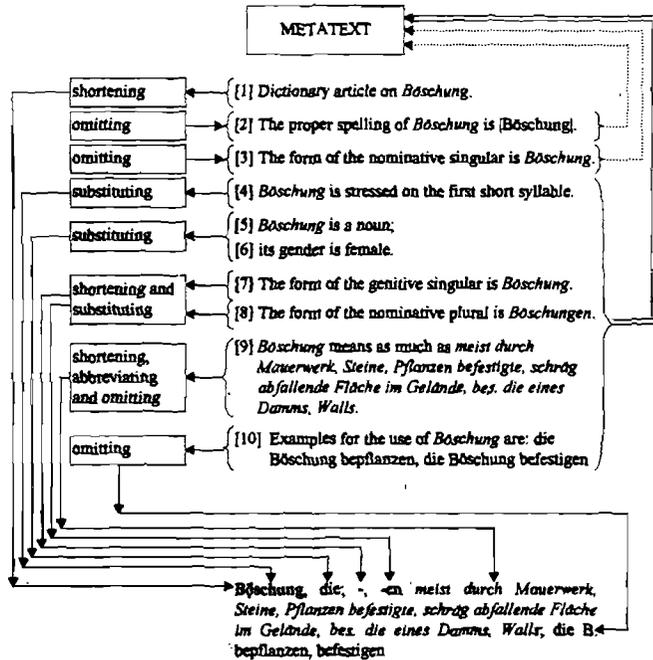


Fig. 7: Visualisation of the condensing operations to get from a full text to a dictionary article

In fig. 7, you will find a survey of the textual condensing operations treated.

At this point, the following can be said: all textual condensing operations which have to be carried out at least once in order to get from a full text to a dictionary article on a monosemous lemma sign may be assigned to a set. The  $n$ -th carrying out of the operations belonging to this set which is necessary in order to obtain the condensate represents the first stage of textual condensation.

All standardized dictionary articles on monosemous lemma signs may therefore be understood as the result of textual condensation processes of the first stage. Their degree of textual condensation may be different. The propositional density of the respective dictionary articles may be calculated if one proceeds as outlined in the following.

For each item type which includes elementary items it is possible to formulate a standardized sentence scheme for a sentence of a full text. This sentence scheme always contains either a variable "x" for the lemma sign or, in the case of nonlemmatic addressing, a variable for other items. If necessary, it may contain further variables.

As item type, let us take, for example, the condensed item giving the plural formation. It is then possible to formulate the following as the corresponding standardized sentence scheme for a sentence of a full text: "The nominative plural of x is y."

Here, "x" is the variable for the lemma sign and "y" the one for the plural form. With respect to  $da_2$ , the corresponding sentence of a full text reads as follows: *The nominative plural of "Böschung" is "Böschungen"*.

By means of the sentence scheme it is now possible to create full text sentences for all items giving the plural formation in a single or in a number of dictionaries. These full text sentences consist of the same number of wordforms and, if one does not consider the inserted wordforms, of the same number of letters. If one proceeds like this with each and every item type, one obtains an ordered set of sentence schemes for every dictionary article, by means of which it is possible to create a full text which, in a certain sense, has the same length. This, in turn, will make it possible to calculate different quotients and compare dictionary articles with respect to their degree of textual condensation (cf. Wiegand 1996b). The quotients refer to the number of printed characters used in relation to the number of the elementary propositional contents.

## 5.2 The second stage of inner textual condensation

With respect to dictionary articles on polysemous lemma signs the operations of the shifting to the left have additionally to be taken into consideration. They represent the second stage of inner textual condensation. Shifting operations of this kind result in textual structures which probably only exist in lexicographic texts.

For all descriptive, factual-referential texts which are not dictionary arti-

cles, and thus for full texts, too, it is valid that statements given within a text are valid until they are revised by subsequent statements given in the same text or, respectively, until interferences from subsequent text sections are suggested which revise the validity of the preceding statement. The statements of a text therefore have fields within the text in which they are valid and they are related to each other by relations which regulate their validity, such as, for example, *exactly when*, *then-relations* or *either-or-relations* etc. The items given in a dictionary article are also valid and they have fields within the article in which they are valid, which becomes particularly comprehensible if one understands them as the result of statements of a full text which have been subjected to textual condensing operations. The fact that a statement is valid means, *inter alia*, the following: with respect to an ordered pair (consisting of this item and its address) there exists at least one valid statement, from which the same propositional content is inferable as from the pair. The items given in the dictionary article are also related to each other by relations which regulate their validity, and if these do not correspond to those of the natural textual constitution they have to be standardizingly regulated, something which has to be explained in the metatext. The occurrence of non-natural relations which regulate validity in articles on polysemous lemma signs may be understood as conditioned by the operations of the shifting to the left, which I will now explain in a few words.

When doing this, I have to rely on extreme simplification. At first, we will assume the most simple case, i.e. the shifting to the left of the pragmatic items.

**Holzerei**, die; -, -en

1. Fußball umg. abwertend *das Holzen*:  
das Spiel artete in eine üble H. aus

2. landsch. umg. abwertend *Prügelei*:  
so war denn bald eine böse Holzerei im Gange  
WELK Grambauer 334

Translation of  $da_3$ :

(The polysemous word "Holzerei" is rendered in the English language by the monosemous words "rough game" and "roughhouse".)

- $da_{3,1}$ : rough game, the; -, -s  
soccer colloquial, pejorative *clogging*: the match  
turned into a rough game
- $da_{3,2}$ : roughhouse, the; -, -s  
geographically, colloquial, pejorative *roughhouse*: they  
soon engaged in rough boisterous play

**Fig. 8:** Dictionary article  $da_3$  from HWDG and its translation

This dictionary article is taken from the WDG. Here, the shifting to the left which is prescribed in this dictionary and which has been carried out in article  $da_4$ , for example (cf. fig. 9), has been neglected.

**Generator**, der; -s, Generatoren (lat.) Techn.  
 1. Maschine, die mechanische Energie in elektrische umwandelt, Stromerzeuger, Dynamo  
 2. Schachtofen zur Erzeugung von Heiz- und Treibgas  
 zu 1 Atom-, Dampf-, Drehstrom-, Gas-, Turbo-, Wechselstromgenerator

Translation of  $da_4$ :

$da_4$ : generator, the; generators <lat.> technology  
 1. a machine by which mechanical energy is changed into electrical energy, electricity producing device, dynamo  
 2. shaft furnace kiln in which gas or vapor is formed to 1 nuclear-, vapor-, three-phase current-, gas-, turbo-, alternating current generator

Fig. 9: Dictionary article  $da_4$  from WDG and its translation

The two items in  $da_3$  whose shifting to the left has been neglected are the pragmatic item on style, which reads "umgangssprachlich", and the item on the pejorative meaning, which reads "abwertend". They each appear twice, i.e. once in the first and once in the second sub-comment on semantics. This is why they should have been shifted to the left, i.e. in that article position in which in  $da_4$  there is the item giving the subject field, which reads "Technik".

If we do the neglected shifting operation now, the article  $da_3$  has the form which can be seen in fig. 10.

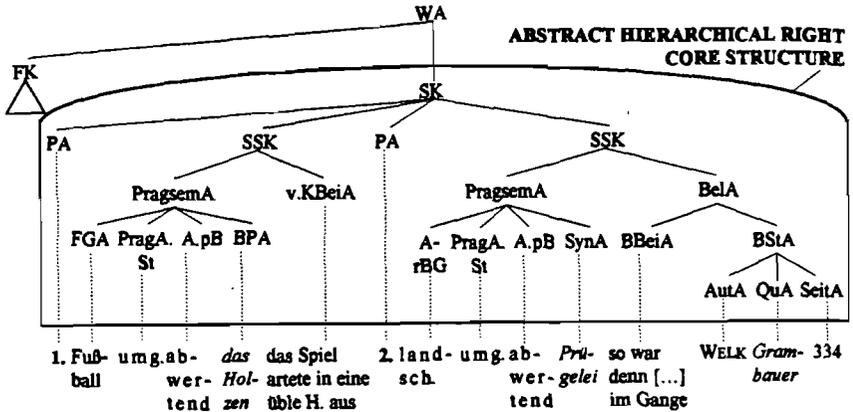
$da_3'$ : **Holzerei**, die; -, -en umg. abwertend  
 1. Fußball *das Holzen*: das Spiel artete in eine üble H. aus.  
 2. landsch. *Prügelei*: so war denn bald eine böse Holzerei im Gange WELK Grambauer 334

Translation of  $da_3'$ :

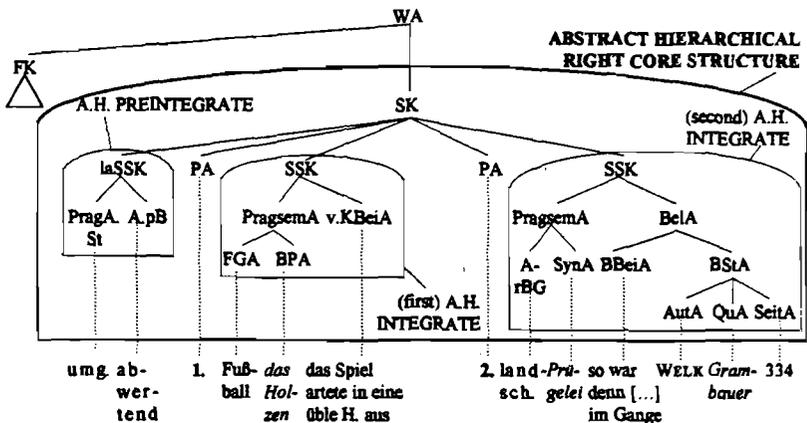
$da_{3.1}'$ : rough game, the; -, -s colloquial pejorative  
 soccer *clogging*: the match turned into a rough game  
 $da_{3.2}'$ : roughhouse, the; -, -s colloquial pejorative  
 geographically *roughhouse*: they soon engaged in rough boisterous play

Fig. 10: Dictionary article  $da_3'$  and its translation

In fig. 11 the annotated structural graph of the comment on semantics of the incorrect article *da<sub>3</sub>* will be found. Below, fig. 12 will be found the structural graph of the comment on semantics after the shifting to the left has been carried out within the comment on semantics.



**Fig. 11:** Annotated structure graph for an excerpt from the (concrete and abstract) hierarchical microstructure which can be assigned to the comment on semantics of *da<sub>3</sub>*; *abbreviations:* PA = item giving polysemy; SSK = sub-comment on semantics; PragsemA = pragmatic-semantic item; v.KBeiA = condensed item giving a competence example; BelA = quotation item; FGA = item giving the subject field; PragA.St = pragmatic item on style; A.pB = item of the pejorative meaning; BPA = item giving the meaning paraphrase; A-rBG = item concerning regional restriction of use; SynA = item giving the synonym; BBeiA = item giving a quoted example; BStA = item giving the place where the quoted example is found; AutA = item giving the author's name; QuA = item giving the source; SeitA = item giving the page.



**Fig. 12:** Annotated structure graph for an excerpt from the (concrete and abstract) hierarchical microstructure which can be assigned to the comment on semantics of *da<sub>3</sub>*; *abbreviations:* laSSK = sub-comment on semantics, shifted to the left; A = ABSTRACT; H = HIERARCHICAL.

The comparison of the two structural graphs shows that by means of the shifting to the left the comment on semantics obtains a new direct textual constituent, i.e. the sub-comment on semantics shifted to the left (laSSK). This sub-comment directly precedes the first item giving polysemy. The partial structure of the microstructure which belongs to the sub-comment is called *pre-integrate*. By means of the shifting to the left the complete microstructure of the dictionary article is changed. A simple integrated microstructure turns into a simple partially integrated microstructure with a pre-integrate. Thus the propositional density increases because, on the whole, two pragmatic items, which appear twice in  $da_3$ , are deleted. First and foremost, however, the scope of the shifted items has to be explicitly determined. One of the metatexts has to provide the user with the information that the shifted items "umgangssprachlich" and "abwertend" are valid for the use of the lemma sign with respect to both the first and the second meaning. This means that the textual scope of the two items given in the sub-comment on semantics shifted to the left extends to both of the subsequent sub-comments on semantics. That this is the case cannot be inferred from the shifted items themselves, nor from their textual position. The reason is that after the shifting to the left has been carried out, there are textual connections within the article which do not appear in non-lexicographic texts.

There are further forms of shifting to the left, which I cannot discuss at this point for lack of space (cf. Wiegand 1996b). I would only like to point out that in articles on polysemous lemma signs the complete comment on form, too, may be understood as a textual constituent shifted to the left.

Whereas in the first stage of textual condensation the textual condensing operations become effective only with respect to the elements belonging to the domains of the microstructures, the operations of the shifting to the left, which represent the second stage of textual condensation, also change the relations of the structure.

This is also the case in regard to the third stage of inner textual condensation, which I will tackle now.

### 5.3 The third stage of inner textual condensation

We speak of the third stage of inner textual condensation in the case of such operations as the shifting to the right which are accompanied by textual condensation. This is only rarely the case. The operation of shifting to the right serves first and foremost as a means of loosening the text. It would be wrong to assume that textual loosening is exactly the opposite of textual condensation. The reason is that if an operation of shifting to the right is carried out the propositional density does not decrease. What happens instead is that the distribution of data within the article is merely changed in such a way that the inner rapid access structure is differentiated, resulting in smaller fields of search with respect to certain search questions (cf. Wiegand 1996a).

One example for an article showing the results of a shifting-to-the-right operation is  $da_4$  in fig. 9. Here, the items giving the compounds are shifted from the first sub-comment on semantics to the right into an annex. In case of a shifting to the right of items given in a sub-comment on semantics the affiliation to the scope of the item giving the meaning paraphrase is lost at the level of the dictionary form. To retrieve it, the item giving the semantic affiliation "Zu 1" has to precede the annex.

Let us now take a look at the article  $da_5$ , given in fig. 13. Here we see two annexes as a result of shifting-to-the-right operations.

- $da_5$ : **Benennung, die; -, -en**
1. *Name, Bezeichnung*: einer neuen Ware eine B. geben; die alte B. ändern; bekannt unter der B. ...; In diesen Benennungen [der Häuser] war die Sitte der Jahrhunderte deutlich zu erkennen G. KELLER 6,310 (*Kleider machen Leute*)
  2. *das Benennen, die Namengebung*: die B. der neuen Straße nach einem bekannten Dichter
  3. *papierdt. das Namhaftmachen*: die B. von Zeugen; Ein solches Vorgehen wurde im Grundsatz beschlossen und sodann zur Benennung der einzelnen Opfer geschritten G. KELLER 6,575 (*Verlor. Lachen*)
- zu 1 u. 2 Orts-, Warenbenennung  
zu 2 Umbenennung

Fig. 13: Dictionary article  $da_5$  from WDG

If there is an annex in a dictionary article, as in the case of  $da_5$ , which is preceded by an item giving the semantic affiliation, by which the annex is assigned to two or more sub-comments on semantics, then the carrying out of the shifting also contributes to loosening the text, but at the same time it is connected with a textual condensing operation of omitting. In  $da_5$ , the condensed item giving the compound word, which allows to ascertain two compound words, i.e. *Ortsbenennung* and *Warenbenennung*, appeared once in the first and once in the second sub-comment on semantics before the shifting to the right had been carried out. However, it has not been shifted to the right twice into two different annexes, but only once, i.e. once it has been deleted. This is why the item giving the semantic affiliation has to read "Zu 1 und 2" and the annex is a condensed annex.

Just like shifting to the left, shifting to the right, too, affects the relations of the microstructures, resulting in the creation of partially integrated microstructures with a postintegrate.

We have now outlined the inner textual condensation and will now briefly tackle the outer one.

## 6. Outer textual condensation

Outer textual condensation pertains to the carriers of the guiding element such as lemmata and sublemmata, for example. A simple example will be found in fig. 14.

da<sub>6-9</sub>: **Pflaume** *f* bot олхўри  
 ~ baum *m* олхўри дарахти  
 ~ kern *m* олўри данаги  
 ~ kompost *n* олхўри компоти

Fig. 14: Four dictionary articles from Benjaminow et al. (1985)

These are four short articles taken from Benjaminow et al. (1985). The condensation can be found insofar as, with respect to three lemma signs, which are compounds, the respective first constituent has been substituted by a tilde. This results in partial lemmata (sensu Wiegand 1983). During the condensing operation, however, a mistake has been made, because in each case it has been forgotten to insert the linking letter *n* as the first letter of the partial lemma.

With respect to condensed cross-reference articles, we will find a different form of outer textual condensation. An example, taken from the FWB, is given in fig. 15.

da<sub>10</sub>: **ablösungsbrief, -geld, -hilfe, -pfund-**  
**geld, -zeit, s. *ablösung* 2.**

Fig. 15: Condensed cross-reference article from FWB

This condensed cross-reference article, from which 5 cross-references can be inferred, may be understood as if it were the result of the 5 cross-reference articles after they have been subjected to condensing operations, which follow each other in alphabetical order and which are given in fig. 16.

ablösungsbrief, s. *ablösung* 2.  
 ablösungsgeld, s. *ablösung* 2.  
 ablösungshilfe, s. *ablösung* 2.  
 ablösungspfundgeld, s. *ablösung* 2.  
 ablösungszeit, s. *ablösung* 2.

Fig. 16: Five cross-reference articles

During the transformation of the five cross-reference articles into one condensed cross-reference article, the first thing to be done, for example, is to delete all those items giving the cross-reference which read "s. ablösung", except for those appearing in the last cross-reference article. Next, with respect to all lemma signs except the first one, i.e. *ablösungsbrief*, the first constituent and the linking letter *s* are substituted by a tilde. Finally, all parts of the text which are left on this line are moved up. The result is the condensed cross-reference article given in fig. 15. Expressing it in terms of the macrostructure we have a lemma cluster, whereas in terms of the microstructure there is an item giving the form of the lemma sign within the condensed cross-reference article, from which five lemma signs are inferable.

Even though there are a number of other cases, we have now gained a modest insight into outer textual condensation and I would like to come to a concluding remark.

## 7. Conclusion

In conclusion, I would like to draw your attention to a phenomenon which I deliberately did not discuss, but which also belongs in the context of textual condensation. Textual condensation serves inter alia as a means to save printing space. To save printing space means that a certain amount of printable matter is filled with as many propositional contents brought into written form as possible. This may also be achieved by selecting, for example, a smaller type size, by reducing the line spacing, and by making minimal use of different means of outer structural formatting such as paragraph formation etc. This is then a type of textual condensation which does not change the proportion of the number of printed characters used in relation to the number of elementary propositions, but the proportion of the number of printed characters used in relation to the printable matter. A discussion on this different type of textual condensation will be found in Wiegand 1996b.

## 8. Acknowledgements

I would like to thank Antje Immken for translating the German text, as well as Matthias Kammerer for producing the typescript.

## 9. Abbreviations of the names for the item classes

A.pB	Angabe der pejorativen Bedeutung	<i>item of the pejorative meaning</i>
A-pragNM	Angabe zur pragmatischen Nullmarkierung	<i>item concerning the pragmatic zero marking</i>
A-rBG	Angabe zur regionalen Beschränkung des Gebrauchs	<i>item concerning regional restriction of use</i>
ArtA	Artikelangabe	<i>item giving the definite article</i>
ArtA...G WK	Artikelangabe, aus der das Geschlecht und die Wortklasse erschließbar ist	<i>item giving the definite article, which allows to ascertain the gender and the word class</i>
AutA	Autorenangabe	<i>item giving the author's name</i>
BBeiA	Belegbeispielangabe	<i>item giving a quoted example</i>
BelA	Belegangabe	<i>quotation item</i>
BPA	Bedeutungsparaphrasenangabe	<i>item giving the meaning paraphrase</i>
BStA	Belegstellenangabe	<i>item giving the place where the quoted example is found</i>
DekKA	Deklinationenklassenangabe	<i>item giving the declension class</i>
FGA	Fachgebietsangabe	<i>item giving the subject field</i>
FK	Formkommentar	<i>comment on form</i>
GA	Genusangabe	<i>item giving the gender</i>
laSSK	links ausgelagerter Subkommentar zur Semantik	<i>sub-comment on semantics, shifted to the left</i>
LZGA	Lemmazeichengestaltangabe	<i>item giving the form of the lemma sign</i>
MorA.S	Morphologieangabe bei Substantiven	<i>morphology item for nouns</i>
PA	Polysemieangabe	<i>item giving polysemy</i>
PragA.St	pragmatische Angabe zum Stil	<i>pragmatic item on style</i>
PragsemA	pragmatisch-semantische Angabe	<i>pragmatic-semantic item</i>
QuA	Quellenangabe	<i>item giving the source</i>
RA	Rechtschreibangabe	<i>orthography item</i>
SeitA	Seitenangabe	<i>item giving the page</i>
SK	semantischer Kommentar	<i>comment on semantics</i>
SSK	semantischer Subkommentar	<i>sub-comment on semantics</i>
SynA	Synonymangabe	<i>item giving the synonym</i>
v.BP <sup>2</sup> A	verdichtete Bedeutungsparaphrasenangabe, aus der zwei Bedeutungsparaphrasen erschließbar sind	<i>condensed item giving meaning paraphrases, which allows to ascertain two meaning paraphrases</i>
v.KBeiA	verdichtete Kompetenzbeispielangabe	<i>condensed item giving a competence example</i>
v.KBei <sup>2</sup> A	verdichtete Kompetenzbeispielangabe, aus der zwei Beispiele erschließbar sind	<i>condensed item giving competence examples, which allows to ascertain two competence examples</i>
v.PlbA	verdichtete Pluralbildungsangabe	<i>condensed item giving the plural formation</i>
v.SgbA	verdichtete Singularbildungsangabe	<i>condensed item giving the singular formation</i>
WA	Wörterbuchartikel	<i>dictionary article</i>
WAK VQK	Wortakzentangabe und Vokalquantitätskennzeichnung	<i>marking giving the word accent and the vowel quantity</i>
WFA.NSg	Wortformenangabe für Nominativ Singular	<i>wordform item for the nominative singular</i>

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