LEXICOGRAPHICA

DE GRUYTER

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Contents

Non-thematic Part

Reviews

Reports

Lexicography in Higher Education

Valeria Caruso (Naples)

Explorations on data condensation and data distribution in the microstructures of e-dictionaries

Abstract: This paper presents a critical investigation on the applicability within e-dictionaries of basic microstructural concepts and typologies proposed by Wiegand. Focusing on information accessibility for the user, the categories developed for printed dictionaries are put to the test in the electronic environment analysing monolingual online dictionaries of the English, French, German, and Italian languages.

As Gouws has already pointed out, new types of data organization are to be found among innovative online dictionaries. They make, in fact, an extensive use of structural indicators and data-identifying entries, thus taking charge of some of the coherence functions that were previously fulfilled by microstructures, typically using strict bipartitions between *comments on form* and *comments on semantics*.

Therefore, since the microstructure is no longer chiefly responsible for marking the general data typology, i.e. items on form and items on meaning, it is used in the electronic environment to provide other types of coherent arrangements.

On the other hand, microstructural typologies of printed dictionaries seem to offer parameters that are still of use in order to identify the type of data integration presented by the dictionary, provided that the concept of some basic structural categories, such as comments, is extended and gains a wider range of possible applications.

Keywords: comments, data integration, e-lexicography, e-dictionaries, items, microstructures, structural indicators, zero items.

1 Introductory remarks

Microstructures are among the "compulsory" lexicographical structures to be found both in printed and electronic dictionaries, as Tarp (2008, 112) states, analysing the changes produced by new electronic media on dictionary structures. To be more precise, following Tarp's ideas, the concept of microstructure has a wider range of possible applications in the electronic environment, if it is considered in a simplified version as an "article structure minus the lemma" (Tarp 2008, 112). This definition may well apply to every search in electronic dictionaries that provides results in the form of a list that is not supplied with the original search term, as in figure 1. The screenshot presents a part of the long list provided by *Le Grand Robert* for a search string requesting the French verbs of the first group ending in –ger. These results can be interpreted as a "microstructure consisting of [...] alphabetically organised search fields" (Tarp 2008, 111), which are all related to the same search term or lemma.

Fig. 1: Search results from *Le Grand Robert* for French verbs belonging to the first group and ending in –ger

Focusing on the same issue of microstructures in electronic lexicography, this paper approaches the matter from a different perspective, and is more descriptive than Tarp's proposal. An analysis of existing online dictionaries will be provided in order to evaluate the extent to which electronic lexicography has changed the way users can retrieve information from the available monolingual dictionaries for the general

language. Microstructures are in fact of paramount importance when one wants to examine the processability of the data contained in one dictionary and thus the users' ability to extract information from dictionaries. As Wiegand (2000; 2002) has pointed out, in fact, what is contained in one dictionary, or its "data", must be distinguished from the "information" that users are able to retrieve from it.

Since the introduction of the concept of microstructure by Josette Rey-Debove (1971), the term has been used to identify the information programme of one dictionary, "which consists of linearly ordered information types" (Hausmann/Wiegand 1989, 340) within the dictionary articles. Afterwards, Wiegand has elaborated on this concept in his general theory of lexicography (Wiegand 1983a; 1983b; 1984; 1998), analysing hundreds of dictionary articles with a formal methodology derived from the mathematical theory of structures introduced by Bourbaki (1968).

Wiegand's analysis moves away from the idea that dictionaries are collections of different text types (Bergenholtz/Tarp/Wiegand 1999, 1763), identifiable on the basis of their relevant functions with a specific segmentation method. When this is applied to printed dictionaries, a first level segmentation gives different component texts: from the title to the users' guide, including the word list, which is considered "the dictionary in the narrow sense" (Hausmann/Wiegand 1989, 330) and is the object of Wiegand's further analysis. At the secondary segmentation level, in fact, one finds the key components of dictionaries: macrostructures, access structures, microstructures, mediostructures, textual architectures, addressing and addressing structures, dictionary articles, all of which have been recently described in the corresponding abridged articles of the supplementary volume of *Wörterbücher. Dictionaries. Dictionnaires*.

However, apart from Wiegand's emphasis on the textual components of dictionaries, the concept of microstructure proves to be intuitive for every lexicographer compiling quick reference tools. While Tarp recognizes it explicitly, others demonstrate the importance of this structure only indirectly, probably even unconsciously, as will be shown later.

1.1 Basic concepts for microstructures

Microstructures are component parts belonging exclusively to dictionaries compiled with a "condensed" textual style. Referring to the concrete activity carried out by the lexicographer, condensed dictionary articles are those that have undergone a syntactical reduction process after having been written in ordinary natural language. This means that they lack cohesive markers and full predicative structures as in example (1), which is, using Wiegand's terminology, an *item giving the paraphrase of meaning* of the lemma "courtyard":

(1)   an open area of ground surrounded by walls or buildings (COBUILD 2)

(2)   A **courtyard** is an open area of ground which is surrounded by buildings or
      walls. (COBUILD 3)

On the contrary, the definition of the same lemma given in (2) is non-condensed, thus
it is called a *semantic item text*, in order to highlight that this elementary constituent
of the dictionary article, called *item* and having a defining function, is a full sentence,
or an *item text*. As Gouws (2014) underlines, in fact, items are one of the two types of
text segments contained in dictionary articles. They allow the user to retrieve infor-
mation, therefore they are defined as "data-carrying entries" (Gouws 2014, 161), while
the other kind of text segments are called indicators, and highlight microstructural
items or specific components of dictionary articles.

In order to be non-condensed, dictionary articles must have only "an item text
assigned to an access text element" (Wiegand/Feinauer/Gouws 2013, 321), which is
called "lemma" at the macrostructural level and "lemma sign", when considering
microstructures in Wiegand's terminology. On this basis, one can distinguish between
partially and completely condensed dictionary articles. The latter have no item texts,
the former have at least one item text and one "non-lemmatic item", such as the items
in the article displayed for the lemma "courtyard" by the *COBUILD 3* (Fig. 2): i.e. *the
item for the regular pronunciation* (kɔːˈtjɑːˈd), the item for the plural ("courtyards"),
and the *item for the competence example* ("They walked through the arch and into the
cobbled courtyard."). Figure 2 displays a shortened version of this article, since all the
commercials have been removed for space reasons.

Fig. 2. Dictionary entry for "courtyard" from *COBUILD 3*

In every condensed dictionary article, an "article scheme" supplies the text with a formal syntax, which derives from the linear sequence of the basic article constituents. These, generally speaking, are all carriers of some information[1]. The user is thus requested to infer this underlying scheme in order to reconstruct the natural language syntax that has been removed and, particularly, to understand the so called "addressing relations", namely the linking relations between the different article constituents. Users are thus defined as "active" by Wiegand and Gouws (2013, 273–274), in the sense that they are involved in a decoding process that requires particular attention and the learning of specific instructions from the dictionary guide. However, some of the online dictionaries examined for this study are so short of instructions for users that one might infer that the editors intended to compile 'self-explanatory' dictionaries. For example, the *Cambridge* dictionary offers brief metalexicographical and metalinguistic explanations as short texts inside tooltips that prompt when the mouse rests on some dictionary items: e.g. "[C]", the *item for countability*, has the comment "Countable noun: a noun that has both singular and plural forms".

Another essential feature of the theoretical model proposed by Wiegand assumes that there should be exactly one microstructure for every type of word treated in the dictionary. In order to be accurate, in fact, the lexicographical description should consider not only the word class to which one lemma sign belongs, but also other relevant differences in the lexicon. For example, the morphosemantic complexity of multi-word expressions requires phrasal verbs and fixed phrases to be described differently. Likewise, words expressing emotions and those used as pragmatic markers should be treated differently from a lexicographical point of view. Emphasising the lexicological adequacy of a diversified microstructural programme in dictionaries, Wiegand has offered the lexicographical practice some operative parameters to improve its quality. However, this diversification in the article information structure should be adequately described in the dictionary guide, because the underlying microstructure (or *abstract microstructure*) must be clear in order to be beneficial to the user who needs to interpret the concrete data displayed in the surface text (or the *concrete microstructure*). Only an "informed" user, in fact, "who is familiar with the article format, can conclude from the lack of an item [...] in a specific position" (Wiegand/Smit 2013, 167) that a specific feature is absent for one lemma sign. For cases like this, lexicographers speak of *zero items*.

On the contrary, users' previous knowledge and their education level can contribute a great deal to the reduction of the cognitive demands of condensed articles.

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[1] Despite the fact that all microstructural component parts are information pieces, the segmentation procedure adopted by Wiegand can cause the isolation of non-informative units (called *non-functional text segments*) when one informative element is put inside another one, segmenting it into two halves (Wiegand/Smit 2013, 152–155). Consider, for example, the semantic gloss put inside the *item giving the paraphrase of the meaning* in: "Harsher (*verharschter*) Schnee" (Wiegand/Smit 2013, 154).

For example, conventions regarding inflectional paradigms and the description of grammar are commonly used for the abridged explanations regarding the form of the lemma sign, and require no special effort on behalf of an educated native speaker in order to be correctly understood. In this respect, the introduction of comprehensive descriptions of inflectional paradigms by some online dictionaries seems to be aimed at increasing the number of their prospective users, since both non-native speakers and students may benefit from this feature. In printed dictionaries, a systematic allocation of the items describing the form of the lemma sign in the "first immediate constituent of the article text" (Wiegand/Smit 2013, 156) has allowed Wiegand to speak of a specific article component called *comment on form*, which can be separated from a second one containing the *comment on semantics*. According to Gouws (2014, 162), this traditional bipartition in printed dictionaries, which "establish[es] order and coherence in the article", seems to be vanishing in the electronic environment in favour of other guiding principles for data presentation, as will become clearer later.

For the moment, it is important to underline that the following discussion will still focus on the same topic of the user's ability to retrieve information from the dictionary, applying the same concepts presented so far to the analysis of major online dictionaries for the English, French, German, and Italian languages. In this respect, not only will the theory and the types of microstructures identified by Wiegand be suitable for the survey provided, but also the analysis offered by Gouws (2014) of online dictionary articles will prove to be relevant.

1.2 A short detour

The introductory concepts offered so far should suggest that microstructures exist when the dictionary is used as a tool for a quick reference: for example, a general language vocabulary is typically used to solve punctual communicative problems, mainly related to linguistic issues while reading or writing in an L1 or L2. Therefore, most of the time, the users' need is limited to obtaining a small piece of information as fast as possible. This, instead, may not be the case for other kinds of reference works.

The *Palgrave Dictionary of Economics*, for example, declares in its title that it is a 'dictionary', despite its encyclopedic nature. In fact, it does not allow users to solve communicative problems, but offers authoritative information on its topics to experts in the field of economics, treated as terminological units that are used as lemmatic items of accessible dictionary articles. Therefore, albeit the semasiological dictionary is a suitable organizational format for the reference needs fulfilled by the dictionary, condensed articles are not appropriate for them.

On the contrary, the importance of miscrostructures can be illustrated by referring to a debate among the British lexicographers on the usefulness of definitions written in a natural language that, therefore, are non-condensed. Answering John Sinclair's complaint (Sinclair 2004) about the fact that the kind of "full sentence defi-

nitions" used in the COBUILD learners' dictionary series have not become the norm in other learners' dictionaries, Michael Rundell (2006) contends that very often these definitions prove to be more difficult to process for the user than those written as condensed texts. In order to support his argument, he shows the long definition of "retreat" by the first edition of the *COBUILD* learners' dictionary:

> "A **retreat** is a change in your position when you have decided that you do not want to do what you have agreed or promised to do, usually because it has become too difficult, too expensive, or too embarrassing" (COBUILD l)

Apart from the extreme length of this sentence, Rundell finds many other linguistic inadequacies in this kind of definition, such as redundancy, circularity, and a difficult identification of anaphoric relations. However, what is not clearly acknowledged is that the main shortfall in these definitions is represented by the data distribution within the articles, thus their microstructures, and not by a stylistic choice between syntactically reduced and unreduced definitions. The condensation that takes place in the COBUILD definitions, in fact, essentially has to do with the amount of data that the lexicographer has decided to put inside them. Strictly speaking, they cover such a great number of different functions that they might be defined as 'multifunctional item texts'. Every definition, in fact, is conceived to illustrate not only the meaning of one word, but a lot of other grammatical and semantic data. The following are those that one can reconstruct from Rundell's criticism:

- typical argument structure of the word;
- typical cotext in which the word occurs;
- pragmatic aspects;
- collocational and colligational behaviours;
- semantic restrictions on the arguments of words.

Additionally, verbal definitions should illustrate also:

- time and voice restrictions, e.g. "lay up" is used almost exclusively in the passive (Rundell 2006, 326);
- time and voice preferences, e.g. the verb "slim" is typically used in the progressive form;
- morphological or syntactic variations expressing the same meaning, e.g. "to argue with another" and "two people argue" (Rundell 2006, 326).

Too much is required from a single component of the dictionary article that, on the contrary, is supposed to fulfil the single function of giving a paraphrase of one meaning of the lemma sign. In the programme set out by Sinclair, instead, the definition is a key component which includes a lot of different data that otherwise could be assigned to different items in the article microstructure. The criticism of Rundell proves that the aim is useless, since it is very difficult for the lexicographer to fulfil it, let alone for the user to infer all these pieces of information from a short text. Rundell himself wonders about the possible interpretations that users might make of the COBUILD definitions:

"the requirement of specifying lexical and syntactic environments often leads to defining state-ments which appear to exclude a wide range of completely regular behaviours. This could be an inherent weakness in the model, and it certainly presents users with a problem of interpretation: for example, when 'prove' is used in the definition of **innocence**, or 'gain' in that of **insight**, should the user infer that this is the only (or the overwhelmingly most frequent) collocate, or simply one of many typical collocates?" (Rundell 2006, 231)

Considering the issue from a strictly lexicographical point of view, one may say that the multifunctional condensation that the COBUILD has set out for its definitions compromises the microstructure of this dictionary. As a consequence, it is unclear to what extent users are able to retrieve any information from them.

Dictionaries are in fact expected to convey information promptly, but this task can only be fulfilled as long as the information is also intelligible. For this reason, a proper data segmentation is necessary in order to offer items carrying as few pieces of information as possible, in order to safeguard the user's ability to retrieve them. For example, one can notice the systematic display of items *giving the competence example* after each *item giving the paraphrase of meaning* and the syntactic pattern in the *DWDS* dictionary for the entry of the verb "einschränken" ("reduce", "limit", "qualify", fig. 3).

Fig. 3. Partial dictionary entry for „einschränken" from *DWDS*

This debate proves how important it is for both the lexicographical practice and the metalexicographic reflection to be guided by a sound theory. However, the crit-icism made by Rundell demonstrates that he implicitly recognizes the importance of a coherent data distribution within the dictionary articles, and this can only be achieved with a well-planned microstructure, as his concluding remarks highlight:

"it is worth adding [...] that information which COBUILD packs into its FSDs can often be conveyed (arguably more clearly) through a combination of a simple definition, a list of frequent collocates, and a set of examples." (Rundell 2006, 335).

2 Additional concepts for microstructures in the electronic environment

Since the same kind of definitions discussed so far are published in the online edition of the COBUILD learners' dictionary (COBUILD 2), the previous criticism is also relevant to the current research on the microstructures of e-dictionaries.

Before discussing other online dictionaries in more detail, however, it is useful to refer to other proposals concerning how structures and concepts developed for printed dictionaries can improve the theory and practice of electronic lexicography. Gouws (2014), for example, discusses article structures, whilst Müller-Spitzer (2013) explains the nature of textual structures in the electronic environment, where two structuring levels can be identified: the database and the presentation level. According to Müller-Spitzer, "access structures, macrostructural, microstructural or mediostructural [textual] units" are to be found at the presentation level.

On the contrary, Gouws (2014) starts from the presentation level, discussing "search area structures", and concludes by addressing the database. Firstly, he points out the innovative presentation and distribution of data offered by some online dictionary articles, emphasising the role played by search area structures in the development of new lexicographical practices. Together with microstructures, search areas are one of the types of text constituent structures belonging to dictionary articles, they are considered as "potential search targets", which can be identified on the basis of the visual perception of the informative units of the article. According to Wiegand, Beer and Gouws:

"Search zones have the general genuine function to assist the knowledgeable active dictionary user by means of search zone indicators in making the search for the items regarded as search targets easier." (Wiegand/Beer/Gouws 2013, 64)

In the most innovative e-dictionaries one notes the clearer "demarcation of slots accommodating different data types" (Gouws 2014, 169), which improves the user's ability to identify the desired data and makes searches faster. Moreover, the attention paid to the data localization has sometimes transformed the traditional dictionary articles into a "multi-layered" structure. In particular, some dictionaries employ a special data distribution, also called a "tab view, which allows selective switching between different components ('tabs') of the word entry" (Müller-Spitzer/Koplenig/Töpel 2012, 437), while the whole article is never displayed on a single page, as in the *elexiko* or the *Larousse*[2], see figures 10 and 7.

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2 On the contrary, *Le Grand Robert* offers both a multi-layered view and a complete display of its articles.

Gouws does not adopt the same term, but describes the structure of these articles in more detail, explaining that, the buttons that allow the user to switch from one layer to another "function as data-identifying entries [...and...] have the same function as structural indicators in printed dictionaries" (Gouws 2014, 170–171). The term *entry* is used to denote "individual parts of dictionary articles" therefore, these buttons indicate specific parts of articles containing diverse data types that, in the existing general language e-dictionaries, are distinguished on the basis of linguistic criteria. In his conclusions, however, Gouws does not exclude the possibility of setting up "function based search zones", which would probably determine a qualitative improvement in the availability of data for the users:

> "The data distribution allocating items to hierarchically-ordered multi-layered search zones needs to be planned in accordance with the user needs and specific situations of use in order to enhance the success of the dictionary consultation process." (Gouws 2014, 175-6)

This may be realized by means of the functional partitions of monofunctional dictionaries (Bergenholtz 2011), which might be further improved with special setting features by the user, in order to obtain results that are more suited for his/her profile.

Along these lines of reasoning, one can imagine that personalized searches can even display a single lemma together with a single item type, because the "occurrence [of the data] as only complement to the lemma qualifies the presentation as a fully-fledged article in its own right" (Gouws 2014, 175).

The customization improvement that Gouws has in mind is achieved, in the first place, by means of different microstructures that allow the lexicographer to select and arrange the most adequate data in the articles of different monofunctional dictionaries, designed for the fulfilment of diverse functions. In fact, these dictionaries offer users not what they want, but rather what they really need in order to accomplish their tasks, as Tarp has explained on different occasions quoting a well-known aphorism by Henry Ford (Tarp 2011, 2012, Fuertes-Olivera/Tarp 2014, 12–18). Secondly, other setting options could allow the user to restrict his profile to such an extent that he could obtain one article displaying exclusively the single piece of information he really needs, thus an article consisting in one microstructural item and one search zone only.

3 Microstructural features of online monolingual dictionaries

Some online dictionaries, such as the innovative *elexiko*, compiled at the *Institut für Deutsche Sprache* of Manheim which has also been analyzed by Gouws, can already retrieve restricted microstructures containing one item at a time. Despite the fact that *elexiko* does not offer any functional or personalized customization, data are distributed on the basis of linguistic categories in different restricted articles. As Gouws explains, the "multi layered structure" of this dictionary is realised by a heterogene-

ous article structure, consisting of many restricted articles that, at the presentation level, are displayed in different screenshots. If one also wants to analyze its microstructure, however, existing categories proposed for printed dictionaries seem to falter, according to Gouws.

3.1 Microstructures without comments

In this respect, Gouws notes that in e-dictionaries grammatical descriptions are no longer always placed in the specific article constituent concerning the *comment on form*, which in printed dictionaries is typically separated from the *comment on semantics*.

This is unquestionably true for the *Duden* dictionary, which generally contains the type of data reported in the lists below for the lexicographical treatment of verbs and nouns. The inventory accounts for the article sections usually displayed for monosemous words or for polysemous words belonging to the same part of speech, and it reports the headings of dictionary article sections, signalled by dots "•", and of structural indicators, marked with dashes "–":

MONOSEMOUS LEMMA SIGN	POLYSEMOUS LEMMA SIGN
– part of speech (Wortart);	– part of speech (Wortart);
– frequency (Häufigkeit);	– frequency (Häufigkeit);
• orthography (Rechtschreibung);	• orthography (Rechtschreibung);
– syllabification (Worttrennung);	– syllabification (Worttrennung);
• meaning (Bedeutung);	• meanings (Bedeutungen);
• synonyms (Synonyme);	• synonyms (Synonyme);
• pronunciation (Aussprache);	• pronunciation (Aussprache);
– accent (Betonung);	– accent (Betonung);
• origins (Herkunft);	• origins (Herkunft);
• grammar (Grammatik);	• grammar (Grammatik);
• typical combinations (Typische Verbindungen);	• typical combinations (Typische Verbindungen);
• browse (Blättern).	• meanings and examples (Bedeutungen und Beispiele)
	• browse (Blättern).

Referring to the previous inventory, it is necessary to underline that the sections ("•") which have no structural indicators inside them ("–") exhibit the kind of data signalled by the heading of the section itself. On the contrary, when indicators appear inside one section, the data reported belong to the class of items displayed by the indicator itself. For example, the items in the „Rechtschreibung" section ("ortography") are necessary *items giving the syllable division*, as the structural indicator shows; likewise, the „Aussprache" ("pronunciation") section necessarily registers *items giving the word accent*. Moreover, the number of items may increase, or decrease, according

to the type of word treated in the article. As stated above, the current discussion refers to the entries generally displayed for lemmata belonging to noun and verb classes, in order to reconstruct the general organizing principles of the data distribution within this dictionary. Figures from 4.1 to 4.3 display the article for „einschränken" ("reduce", "limit", "qualify") as an example of the dictionary articles to be found in the *Duden* dictionary.

It is immediately clear that polysemous lemma signs have one section more than the articles addressed to monosemous words: it is called „Bedeutungen und Beispiele" ("meanings and examples") and is devoted to the extended semantic description of the lemma sign. The meanings of polysemous lemmata are, in fact, also abridged for quick reference in the section called "meanings" („Bedeutungen"). Here the user can select one of the meanings and skip directly to its extended treatment in the "meanings and examples" section („Bedeutungen und Beispiele") at the bottom of the page. Quoting Wiegand, the first semantic search area, "Bedeutungen" ("meanings"), "is an orientating comment, which functions in a similar way as an 'article list of contents'" (Wiegand/ Smit 2013, 171). In the microstructural classification proposed for printed dictionaries, the presence of any additional comment rather than the usual *comment on form* and *comment on semantics* is regarded as a structural implementation, and is registered as an *expanded* microstructure (Wiegand/Smit 2013, 170–176). However, this typological category does not seem to apply here, because the strict division between form and semantic comments has been dismissed. On the contrary, in the *Duden* dictionary, data on the word form are given in many separate sections, while semantic aspects are not exhaustively conveyed by a single section of the article, thus in one of its "immediate text constituents": synonyms, in fact, are treated outside the section called „Bedeutungen und Beispiele" ("meanings and examples"). Moreover, the option to skip items and go directly to the meaning section establishes a 'prominence' relation among the data of polysemous words. The part of speech, word frequency, and its syllabification are always the first items displayed to the user together with the word meanings. The other data, instead, can easily be ignored because the user immediately accesses the semantic explanation, which can be further investigated in the "meanings and examples" section. Therefore, it can be outlined the item distribution displayed in figure 5.

DUDEN

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Suchen

Drucken Zitieren Hilfe zum Wörterbuch Wortvorschlag

einschränken

Wortart: schwaches Verb
Häufigkeit: ▮▮▮▮

Rechtschreibung ⓘ   Nach oben

Worttrennung:
ein|schrän|ken

Bedeutungen ⓘ   Nach oben

1. a. verringern, reduzieren; auf ein geringeres Maß herabsetzen
   b. in etwas einengen

2. aus einer Zwangslage heraus, um etwas zu erübrigen, die Ausgaben für den Lebensunterhalt klein halten, sich mit wenigem begnügen; bescheiden leben

Synonyme ⓘ zu einschränken   Nach oben

- sich begnügen, sich beschränken, haushalten, keine Ansprüche stellen, kürzertreten, sparen, vorliebnehmen, sich zufriedengeben, zufrieden sein, sich zurückhalten; (gehoben) sich bescheiden; (bildungssprachlich) downshiften; (veraltend) fürliebnehmen
- Abstriche machen, begrenzen, beschneiden, beschränken, die Grenze bilden/ziehen, drosseln, eindämmen, einengen, eingrenzen, herabmindern, herabsetzen, kürzen, reduzieren, schmälern, streichen, verkleinern, verkürzen, vermindern, verringern, zurücknehmen, zurückschrauben; (gehoben) mäßigen, mindern; (bildungssprachlich, Fachsprache) dezimieren, lokalisieren, restringieren; (umgangssprachlich) [he]runtergehen; (besonders Fachsprache) limitieren; (besonders Wirtschaft) kontingentieren
- abschnüren, bedrücken, beengen, beklemmen, beschränken, einengen, einzwängen; (landschaftlich) stemmen

Aussprache ⓘ   Nach oben

Betonung:
einschränken
Lautschrift:
[ˈai̯nʃʁɛŋkn̩] 🔊

Herkunft ⓘ   Nach oben

zu Schranke

Grammatik ⓘ   Nach oben

schwaches Verb; Perfektbildung mit »hat«

Präsens	Indikativ	Konjunktiv I	Imperativ
Singular	ich schränke ein	ich schränke ein	
	du schränkst ein	du schränkest ein	schränk ein, schränke ein!
	er/sie/es schränkt ein	er/sie/es schränke ein	
Plural	wir schränken ein	wir schränken ein	
	ihr schränkt ein	ihr schränket ein	
	sie schränken ein	sie schränken ein	

Präteritum	Indikativ		Konjunktiv II
Singular	ich schränkte ein		ich schränkte ein
	du schränktest ein		du schränktest ein
	er/sie/es schränkte ein		er/sie/es schränkte ein
Plural	wir schränkten ein		wir schränkten ein
	ihr schränktet ein		ihr schränktet ein
	sie schränkten ein		sie schränkten ein

Partizip I	einschränkend
Partizip II	eingeschränkt
Infinitiv mit zu	einzuschränken

Typische Verbindungen (computergeneriert) ⓘ   Nach oben

Substantive   Adjektive

Grundgesetz
Freiheit
Bewegungsfreiheit   Pressefreiheit

einschränken

Grundrecht   Beweglichkeit
Versammlungsfreiheit
Bürgerrecht
Grundrecht

Bedeutungen und Beispiele ⓘ   Nach oben

1. a. verringern, reduzieren; auf ein geringeres Maß herabsetzen
   Beispiele
   - seine Ausgaben [auf das Notwendigste], den Zugverkehr einschränken
   - jemandes Macht, Rechte einschränken
   - eine eingeschränkte (begrenzte) Vollmacht

   b. in etwas einengen
   Beispiel
   jemanden in seinen Rechten, seiner Bewegungsfreiheit einschränken

2. aus einer Zwangslage heraus, um etwas zu erübrigen, die Ausgaben für den Lebensunterhalt klein halten, sich mit wenigem begnügen; bescheiden leben
   Grammatik
   sich einschränken
   Beispiele
   - ich muss mich sehr einschränken
   - eingeschränkt, in eingeschränkten Verhältnissen leben

Blättern ⓘ   Nach oben

Im Alphabet davor   Im Alphabet danach
einschnitzen   Einschränkung
einschnüren   einschrauben
einschnuren   Einschreibbrief
Einschnürung   Einschreibebrief
einschöpfen   Einschreibegebühr

Fig. 4.1, 4.2, 4.3: Three screenshots for the *Duden* entry „einschränken"

- part of speech;
- frequency;
- orthography;
  - syllabification;
- meaning; / meanings;
- synonyms;
- pronunciation;
  - accent
  - phonetic transcription;
- origins;
- grammar;
- typical combinations;
  - adjectives;
  - verbs;
  - substantives;

cross-links
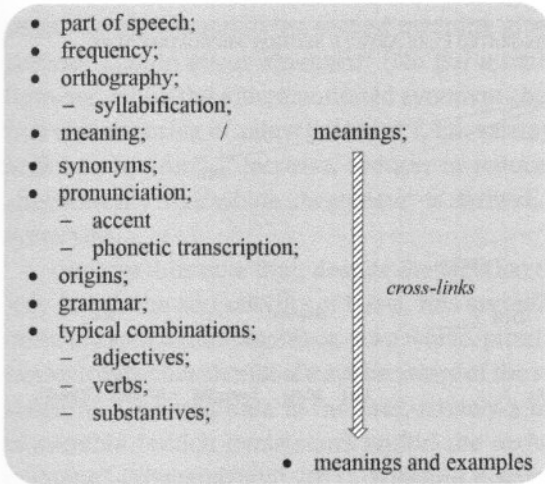
- meanings and examples

Fig. 5: Item distribution in the *Duden*

Lastly, with careful inspection of the kind of data provided in the articles, and a thorough microstructural analysis of the section "Bedeutungen und Beispiele" (meanings and examples), one can attempt to reconstruct the organizing principles followed in this dictionary.

In fact, if one refers to the microstructural typologies identified by Wiegand, it is possible to recognize in the "meanings and examples" section of the lemma sign „einschränken" a hierarchical para-integrated microstructure, outlined by the structural graph given in figure 6.

In fact, this section displays a division between core senses and sub-senses but it is "not consistently" para-integrated, because only the first core meaning (SCS) also has two sub-meanings (^{2}SCS.cs and ^{2}SCS.ss). Additionally, the section offers an *integrated* organization of its data, because each meaning and sub-meaning is complemented by specific additional data that integrate the semantic description or, stated more formally:

> "all article-internal items and item texts stand in the field of validity regarding the contents and in the textual scope [...] of precisely one specific item giving the meaning, and belong to the particular sub-comment on semantics to which also this item giving the meaning belongs". (Wiegand/Smit 2013, 176)

For example, for the second core meaning of „einschränken" a grammar item is displayed, which is a "scope-restricting [item] for the form of the lemma sign" (Wiegand/Smit 2013, 187): „Grammatik: sich einschränken". Stated less formally, this grammar item specifies the inflectional paradigm associated with this meaning of the lemma.

On the contrary, additional data are provided by means of example sentences for the first core meaning, namely:
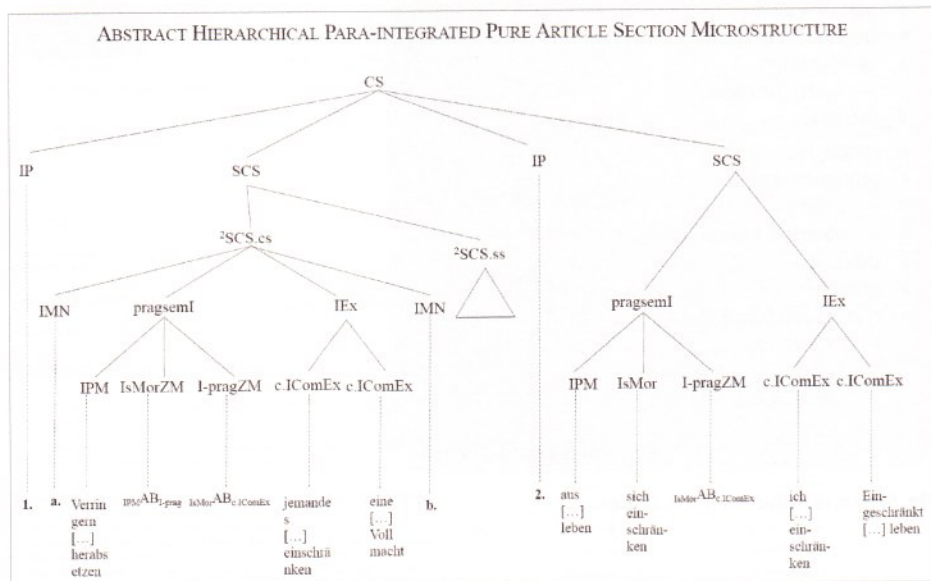
ABSTRACT HIERARCHICAL PARA-INTEGRATED PURE ARTICLE SECTION MICROSTRUCTURE

Fig. 6: A partial commented structural graph for the abstract hierarchical para-integrated article section microstructure of "einschränken" dictionary article from *Duden*. Abbreviations: CFS = comment on form and semantics; IP = item giving the polysemy; IMN = item giving the meaning nuance; SCS = sub-comment on semantics; ²SCS.cs = sub-comment on semantics on the secondary level for the main meaning (core sense); ²SCS.ss = sub-comment on semantics on the secondary level for the subordinate meaning (sub-sense); pragsemI = pragmatic-semantic item; IEx = item giving the example; IPM = item giving the paraphrase of meaning; IsMorZM = item giving the morphology zero marking; I-pragZM = tem for pragmatic zero marking; c.IComEx = condensed item giving the competence example; IsMor = item giving the morphology.

(3) seine Ausgaben [auf das Notwendigste], den Zugverkehr einschränken
(4) jemandes Macht, Rechte einschränken
(5) eine eingeschränkte (begrenzte) Vollmacht

In (3), the item enclosed in square brackets gives the connecting preposition for a typical adjunct to this verb; (5) instead displays the adjectival use of the past participle of the same verb. Additionally, the same competence example shows an inner semantic gloss „(begrenzte)" ("limited"), which is also a synonymic item. In the article, however, synonyms are treated in a specific, separate section but, as the dictionary guide warns, they are distributed into sub-sections that are not strictly correspondent to the division adopted in the main semantic section: „Die Untergliederung der Synonyme kann von der Bedeutungsgliederung im Gesamtartikel abweichen" ("The subdivision of synonyms can differ from the meaning division adopted in the entire article").

This, in fact, is the case with the „einschränken" article, where the section dealing with synonyms contains exactly three text blocks, among which only the second

seems to correspond to the second meaning given in the "meanings and examples" section: „1.b. in etwas einengen" ("to put a limit on something"). Unfortunately, however, while the aforementioned synonym „begrenzte" ("limited") belongs to the first core meaning of „einschränken" („1.a. verringern, reduzieren; auf ein geringeres Maß herabsetzen", "decrease, reduce; to reduce to a smaller measure"); the verb „begrenzen", from which „begrenzte" is derived, is listed in the second sub-block of synonyms.

One can thus note that, despite the fact that the article division in many sections may favour the accessibility of items, this segmentation should be done carefully, in order to avoid redundancies or, even worse, puzzling information. In order to do that, the lexicographer should always be aware of the stringent necessity of providing consistently integrated data to the user, namely a microstructure in which it is clearly discernible "which items stand within the textual scope of which item giving the meaning" (Wiegand/Smit 2013). Wiegand discusses the issue whilst presenting the *non-integrated microstructures* of the Wahrig dictionaries, which are characterized by an item division based on linguistic criteria. For cases like this, "the reconstruction of the scope relations is a problem" (Wiegand/Smit 2013) for the user, as the previous example extracted from the *Duden* dictionary also demonstrates.

With respect to the same issue of data integration, one can collect other significant examples in the monolingual e-dictionaries for the languages considered here. The *Larousse* dictionary, for example, offers a partial integration of its data. Adopting the multi-layered architecture of 'tab-views', the fixed phrases («Expressions») and the quotations («Citations») provided are not explicitly linked to the different meanings listed in the section called «Définitions», which contains the items giving

Fig. 7: Dictionary entry for «réduire» from *Larusse*

the paraphrase of meaning. On the contrary, sometimes the synonyms section („Synonymes"), explicitly shows the meanings for which alternative expressions are provided, sometimes together with antonyms (see fig. 7).

3.2 Adapting existing descriptive categories

With reference to the features discussed so far, one can recognise the presence, among the immediate text constituents of the *Duden* articles, of a specific section devoted to the treatment of lexical meanings, offering the necessary semantic disambiguation and description. Therefore, its textual and functional unity are probably sufficient to consider this article section as a "comment" in its own right, even though additional semantic data can also be found in the synonyms section. A better evaluation of how the category of "comment" can be applied to imperfect structural components such as these can be carried out considering the main features attributed to comments. They must be immediate text constituents of the article and display similar linguistic and metalexicographical features, as the following remarks show:

> "[comments] put items together that are seen as belonging together from a linguistic and a metalexicographical perspective; their representation as immediate text constituents by means of article structural schemes (also: structural schemes for dictionary articles) and general microstructural images, guarantee a quick overview for the microstructural type and the type of dictionary article to which it belongs." (Wiegand/Feinauer/Gouws 2013, 343–344)

Both conditions seem to be fulfilled by the "meanings and examples" section of the „einschränken" article, since all items illustrate the word meanings and they are grouped together in a specific search area, which in turn represents one of the immediate text segments of the article.

Through this inspection, it is possible to identify the overall microstructural organization of the *Duden* dictionary and to recognize its basic features and inconsistencies. In this respect, existing typologies have proved their descriptive efficacy also to reveal critical aspects in the data distribution and organization of online dictionaries. Therefore, unless the strict division in two comments proves to be inadequate for new types of data arrangement offered by the electronic environment, the general concept of comment should still be maintained, in order to capture some recognizable organizing principles that make dictionary articles more coherent and intelligible.

This careful examination has provided a better understanding of the guiding principles adopted for the data distribution within the *Duden* dictionary. The basic aim pursued here seems, in fact, to be that of conveying data briefly, giving the user the opportunity to elaborate on the specific details.

Therefore, the essential data are given in the first four text blocks called „Wortart" (part of speech), „Häufigkeit" (frequency), „Worttrennung" (syllabification), „Bedeutung" (meaning). These are probably considered to be the essential properties that

allow the user to infer the necessary information in order to perform both receptive and productive tasks. Obviously, the more educated and proficient the user is, the more useful these data can be. On the contrary, when the user is less skilled and experienced, additional items are probably necessary.

These are in fact provided in the lower sections of the article and they typically display: synonyms, data on correct pronunciation, etymology, grammar, and other words that usually appear in the same context, the so called "typical combinations". All items outside the meaning section are addressed to the lemma sign and are generic by nature, because they do not specifically belong to any of its senses. Additionally, the items given before the word meanings acquire greater relevance than the others that are listed below the semantic comment section. As a matter of fact, in the articles for momosemous words, the additional, or secondary data are provided after the word meaning explanation, and the user can simply ignore them, if the previous information has successfully fulfilled his/her information void. For polysemous words, instead, the user is given the opportunity to skip the secondary data, by means of a cross-linking system that allows him/her to get to the information on the desired meaning.

Information technology offers many ways to conceal parts of a Web page and the dictionary items therein contained. The user therefore must undertake specific actions in order to access complementary data sometimes. Text expansion, by means of menus, is the most common of these actions. However, the *Zingarelli* dictionary adopts a different mixed strategy: it shows two data-identifying entries above the lemma sign. The first, "Flessione" ("inflection"), is a button that opens up a different page where inflectional paradigms are displayed; the second, "Sillabazione" ("syllabification"), activates a tooltip containing the corresponding *item giving the syllable division* (see fig. 8).

Fig. 8: Dictionary entry for "correre" from *Zingarelli*

Since similar options are extremely widespread, one wonders if the ordering relations established by Wiegand as essential properties governing the item distribution in printed dictionary microstructures, e.g. precedence and partitive, should not be implemented by a *prominence relation* in electronic dictionaries. As the previous discussion demonstrates, prominence relations allow the lexicographer to establish an order of relevance among the items by means of concealing strategies that overshadow secondary data. This is extremely evident in the *MacMillan* dictionary, which offers synonyms in menus below the semantic comment text blocks. A button with the heading "Show less" on the left side of the page also gives the user the option to remove the menus from the display of the dictionary page.

On the basis of the previous considerations, one can outline the microstructural image of the *Duden* article discussed so far in the structural graph of figure 9. The square brackets enclose the secondary items in order to show the prominence relation between the different data in the article. One must also be aware that the initial shortened section on meaning has not been considered as a "comment", but only as an abridged version (CFSA in the graph below) of the more extended comment on form and semantics to which it belongs. This choice has been determined by the scarce applicability of existing definitions that are based on the division between the two basic comments, i.e. on form and semantics. Additional comments are considered, in fact, to be "one comment more than a basic dictionary article" (Wiegand/Smit 2013, 170), therefore at least one comment on form and one comment on semantics must be displayed in order to identify an additional comment.
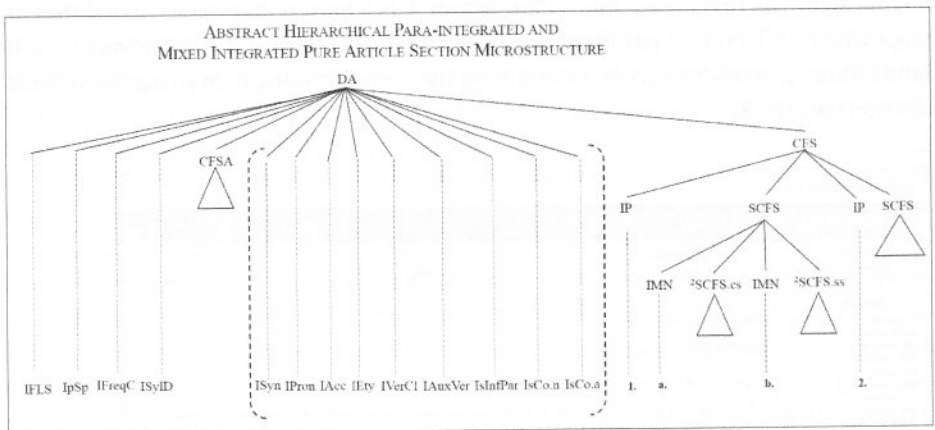

Fig.9: Microstructural image of the *Duden* dictionary article for „einschränken". Abbreviations: IFLS = item giving the form of the lemma sign; IpSp=item giving the part of speech; IFreqC = item giving the frequency class; ISylD = item giving the syllable division; CFSA = comment on form and semantics abridged; ISyn = item giving the synonym; IAcc = item giving the accent; IPron = item giving the pronunciation; IEty = item giving the etymology; IsMor.v = items giving the morphology in verbs; IVerCl = item giving the verb class; IAuxVer = item giving the auxiliary verb; IsInfPar = items giving the inflectional paradigm; IsCo = items giving the cotex; IsCo.n = items giving the cotex with nouns; IsCo.a = items giving the cotex with adjectives.

3.3 Lexical units and lemma signs

Even though a strict division of item types into single dictionary sections is realized also in the *elexiko*, the organizing principles of data distribution in this dictionary are different, and display a more coherent data integration than those analyzed so far. This is done by means of a guided access to the data, based on a preliminary semantic disambiguation that takes place in the first dictionary layer (fig. 10.1).

Fig. 10.1: Screenshot of the *elexiko* entry for „einschränken". First layer

Fig. 10.2: Screenshot of the *elexiko* entry for „einschränken". Second layer, meaning variant („Lesart") „verringern"

Fig. 10.3: Screenshot of the *elexiko* entry for „einschränken". Second layer, meaning variant („Lesart") „zurücknehmen"

Fig. 10.4: Screenshot of the *elexiko* entry for „einschränken". Second layer, meaning variant („Lesart") „sparsam leben"

Then the user is allowed to consult a comprehensive description of the lexical meaning that he/she has selected, which are located on a second layer partitioned in different sub-blocks, or 'tabs' (fig. from 10.2. to 10.4). Each of these contains only the type of data signalled by the data-identifying entries. Thus, a comprehensive description of the different word meanings is made possible by the items contained in the restricted sub-blocks of the second layer, i.e. meaning, collocations, synonyms, and grammar. This data arrangement resembles the type of *mixed integrated microstructure*, described by Wiegand and Smit as follows:

> "Hierarchical integrated article microstructures are called *mixed integrated* when they belong to dictionary articles of which the second position comment is a comment on form and semantics." (Wiegand/Smit 2013, 187)

Moreover, in order to be "mixed integrated", the "second position comment" must contain data on the word form that must "open up [...] the textual scope of items" already given in the "first comment" (Wiegand/Smit 2013, 187). Again, what is inadequate in this definition is the strict division of dictionary articles in two comment units whose type and order is strictly predetermined. On the contrary, one could assume that comment functions and positions may vary, despite a clear demarcation and recognisability of search areas that are devoted to a specific lexicographical descriptive aim. These search areas may also be split into different sub-blocks that are clearly dependent on a main section. In the e-dictionaries discussed so far, the first items displayed in the article offer a description of the most general features of the lemma sign, which are independent from any of its specific meanings.

Unfortunately, in the *Duden* dictionary these items are located in many sections, thus they are scarcely recognizable as a single structural unit, despite the prominent position of the meaning section. On the contrary, in the *elexiko*, the first layer offers a clear display of two types of introductory data, as one can read in the corresponding section headings, also described in the guide glossary[3].

The first is labelled as „Lesartenübergreifende Angaben", which can be translated as "information on all meaning variants", and thus corresponds to comprehensive information on the lemma sign. The second section offers instead „Lesartenbezogene Angaben", or "information on specific word meanings". The term „Lesart" corresponds in fact to „Einzelbedeutung", or "single meaning", as is explained in the users' guide glossary, thus the variants addressed are of a semantic type.

This strict semantic organization, offering grammar and collocational items in the same layer hosting meaning descriptions, seems to adhere to the comprehensive and relational conception of lexical meaning that has been formalized in current lexicology by the notion of "lexical unit", or the "pairing of a word with a meaning" (Ruppenhofer et al. 2010, 5). In short, one may say that lexical meanings change whenever any significant variation takes place in the word morphological paradigm, or in its syntagmatic properties, which include both lexical and syntactic aspects. Therefore, in order to describe all the senses of one word, one must account for the syntagmatic and morphological variations that occur along with significant semantic variations.

In the *elexiko*, the "grammar" („Grammatik") section is in fact a key component of the semantic description and highlights this strict form-meaning integration, through a proper lexicographical organization. Different morphological and syntactic descriptions are clearly provided for every meaning of the same lemma sign in the corresponding grammar („Grammatik") sub-block (see fig.10.2–10.4). The different types of data integration offered by this dictionary, which belongs to the "mixed integrated" type, and by the "integrated" microstructural type can be more easily recognized by

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3 The „Glossar" can be consulted at http://www.owid.de/wb/elexiko/glossar/index.html.

comparing *items giving the auxiliary verbs* in the *elexiko* and the *Zingarelli* dictionary, displayed by the screenshots in figure 10.2, 10.3, 10.4 and figure 8 respectively.

In *elexiko*, the item giving the simple past („Perfekt") for each meaning explicitly shows the necessary auxiliary. On the contrary, in the *Zingarelli* dictionary, when the use of auxiliary verbs follows special rules, these are explained in the initial comment on form and no specific integration is provided in order to explain to which of the word meanings listed in the sub-comments on semantics these rules apply:

> "aus. *essere* quando si esprime o sottintende una meta; aus. *avere* quando si esprime l'azione in sé e nel sign. di partecipare a una corsa" [aux. "essere" when a final destination is clearly expressed or implicitly assumed; aux. "have" when reference is made to the concrete action of 'running' and to the meaning of taking part to a running competition]. (*Zingarelli*, sub *correre*)

The user is thus required to infer the correct form-meaning correspondence.

On the contrary, in the elexiko, the strict adherence to the partition into sections describing, on the one hand, the lemma sign and, on the other, its different lexical units is also proved by the fact that no word class indications are displayed in the first dictionary layer, but rather in the sub-blocks of the "meaning explanation" section („Bedeutungserläuterung"). In this respect, one can briefly outline the general microstructure of the *elexiko* dictionary articles by referring to its basic comments on the lemma sign and its associated lexical units as is illustrated in figure 11.
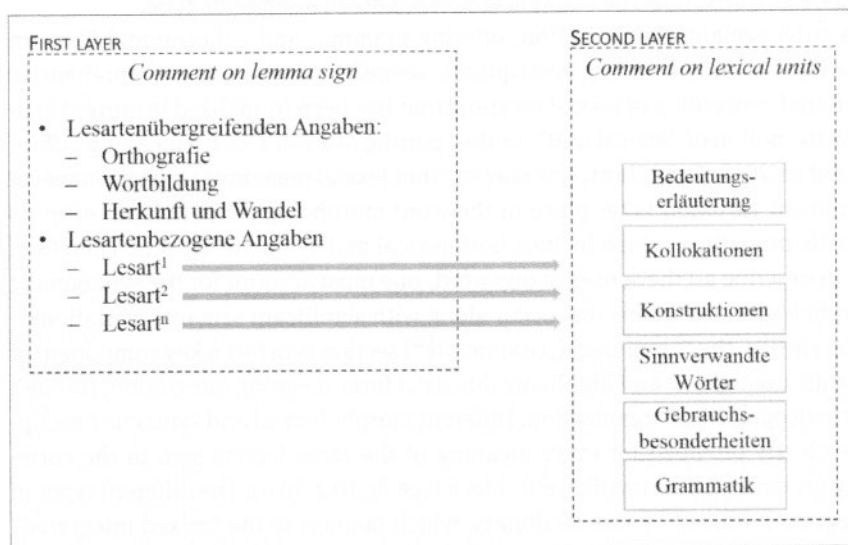

Fig.11: General outline of microstructural organization in the *elexiko*

3.4 Reversed functions

The basic microstructure of the *elexiko* is shown systematically using data-identifying entries that are always displayed, even when the corresponding data are absent. On such occasions, only the colour of the heading changes from black to grey. Generally speaking, in fact, the absence of some data is marked by means of specific typographical and non-typographical indicators. Therefore, the colour of typographical characters used in the headings of the sub-blocks indicators marks two types of information voids.

The first is used to signal items that do not belong to the microstructure programme of a specific kind of word, thus they are non-typographical indicators highlighting that some data types are simply irrelevant for the lexicographical description of a specific lexical unit. It is in fact reasonable to think that the grey heading of "Kollocationen" and "Sinnverwandte Wörter" in the corresponding sub-blocks belonging to the lemma „du" ("you", both as a personal and indefinite pronoun) signal the absence of these item types from their abstract microstructures.

The second void is related to the absence of specific word features, thus they are structural indicators of zero items. This interpretation can be applied each time "usage peculiarities" („Gebrauchsbesonderheiten") are not shown, and therefore one can deduce that the word has no remarkable feature to be described.

Additionally, zero items can be signalled by specific non-typographical indicators as well. For example, the passive use of a verb is always clearly shown in the grammar sub-block, where one can read if it is "allowed" („Perfektbildung: bildbar") or "not allowed" („Perfektbildung: nicht bildbar"). In other cases, items may be signalled as absent from the dictionary corpus („nicht im elexiko-Korpus belegt").

For cases like those that have just been mentioned, the typical function of structural indicators is reversed, since they do not denote "microstructural text constituents" (Wiegand/Smit 2013, 153) but rather what is absent from the microstructure. They mark in fact the type of data that are not included in a specific article microstructure, as well as the features that do not belong to a specific lexical unit.

However, it is important to underline that the chief innovation of this e-dictionary consists in the appropriate lexicographical design chosen for the descriptive lexical model that has been adopted. The access route to data is based, in fact, on a preliminary disambiguation that allows the user to access a comprehensive treatment of one lexical unit at a time, by means of restricted sub-articles dealing with single data types: „Bedeutungserläuterung" ("semantic explanation"), „Kollokationen" ("collocations"), „Konstruktionen" ("constructions"), „Sinnverwandte Wörter" ("meaning-related words"), „Gebrauchsbesonderheiten" ("usage peculiarities"), „Grammatik" ("Grammar").

As a result, the user has access to rich lexicographical descriptions without suffering from information overload because different data types are displayed one at a time in single articles. However, to improve the intelligibility of dictionary data it

would undoubtedly be beneficial to use different typographical indicators to signal zero items and those that are, instead, irrelevant for the lexicographical description of some lexical units.

4 Conclusions

The present discussion has covered two closely related topics, namely data condensation and data distribution within monolingual e-dictionaries available for the English, French, German, and Italian languages, focusing on the most innovative reference tools available. This analysis has been carried out by applying some typological classification criteria developed for printed dictionaries to the e-dictionaries in question, in order to evaluate the usefulness of the aforementioned criteria for the electronic resources. The existent types of microstructures still seem to be valuable investigative models as long as the concept of their basic components, or "comments", is accepted in a broader sense.

Whilst, in fact, one can retain the general features of comments, namely the fact that they are immediate text constituents with a clearly identifiable linguistic and metalexicographical function, other aspects must be considered as non-discriminative, such as their typology and number.

The type, for example, is not predetermined but depends on the main organizing criteria chosen by the lexicographer.

The number is also variable, since other devices can be used in order to make item types intelligible, not only the basic form-meaning division typically used in printed dictionaries. Considering the most innovative layouts of online dictionaries, one can immediately note the abandonment of the traditional bipartition into comments on form and comments on semantics in favour of a more fragmented item distribution. As Gouws explains, the coherence that was previously assured by the comment bipartition is balanced in the new e-dictionaries by the presence of structural indicators "that introduce each section [and] help with explicit and rapid access to the relevant data" (Gouws 2014, 167).

Therefore, it is legitimate to ask whether comments and the microstructural types based upon them should be retained also in the theory of e-lexicography.

In order to answer this question, it is important to underline that, in the current investigation, the basic types of microstructures outlined for printed dictionaries have proved to offer still valuable examples of how different types of items can be coherently integrated also in e-dictionaries. In fact, two opposing risks in the lexicographical arrangement of data do not seem to be dependent on the medium that the dictionary uses, namely item condensation and item distribution.

On the one hand, data may be condensed to the point that no information can be inferred from them by the user. Proof of this has been given here by referring to a lexicographical debate among British lexicographers. The arguments listed by Rundell

have shown that it is hard to deduce an exhaustive microstructural programme from the articles made up of items that are supposed to simultaneously convey many different data by the lexicographer, as in *COBUILD learners' dictionaries*.

More limited problems of data interpretability emerge, instead, when one considers the data identifying function of some structural indicators in the innovative *elexiko*. This dictionary has, in fact, identical structural indicators, i.e. the grey colour of the data-identifying entry characters, signalling both zero items, thus the absence of some features, and the abstract microstructural arrangement of some articles. The multiple functions of these indicators weaken the interpretability of some data, since the user should infer which ones are irrelevant, thus absent from the abstract microstructure, and which are missing altogether for a specific lexical unit, thus being zero items.

On the other hand, experimental e-dictionaries also give some evidence of the possible inconsistencies deriving from a non integrated distribution of data into different items. The main shortfall may consist in a lack of proper item integration within the dictionary article, namely the absence of clear demarcations on how different data are linked to each other, for example which fixed expressions or synonyms belong to a specific word meaning.

Data coherence is typically ensured in printed dictionaries by different ways of linking together the comments on form and semantics by means of the so-called integrated, mixed integrated and semi-integrated microstructures (Wiegand/Smit 2013). These organizing types aim to guarantee an intelligible lexicographical description of the multi-layered word properties, using the bidimensional space of the paper medium. As long as the electronic environment has extended the possibilities of item distribution, mainly by means of clear headings of non-typographical indicators, the informative value of microstructural data arrangements has certainly become lower for the user, but it is undeniably still existent. Moreover, the microstructural typologies of printed dictionaries still seem to be valuable for those e-dictionaries in which semantic items are chiefly located in a clearly identifiable search area, even though the items on form are more fragmentally provided and do not display any comment status.

From the brief analysis carried out so far it has also been possible to recognize at least one more kind of microstructural arrangement realized in the *Duden* dictionary, using what has been called here „a prominence" relation among the items. This type of organization allows the user to consult the more general data first and demonstrates that if the microstructure is no longer mainly responsible for marking the general data typology, such as items on form and on meaning, it can easily provide other types of coherent arrangements, which the user would probably understand quite easily.

On the contrary, the *elexiko* has proved that different grounding linguistic models can shape the dictionary microstructural typology and, additionally, that the electronic environment can improve data accessibility to such an extent that an experienced user can directly access the desired data in order to perform a specific task quickly.

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