Frame Semantics and Learner's Dictionaries: Frame Example Sections as a New Dictionary Feature

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Abstract

Frame semantics has so far been neglected or even been rejected in the context of EFL-lexicography, although lexicographic description within a frame semantics approach would have advantages for learners, e.g. the coherent presentation of several relevant lexical items at a time, as well as their conceptual connection, both of which would also further vocabulary acquisition. This proposal will detail how a frame semantics approach for the example section in English monolingual learner's dictionaries can contribute to the notion of cognitive lexicography, i.e. a lexicography that puts an emphasis on how users process language, which would in turn facilitate a user's understanding of an entry. For this purpose, so-called *frame example sections* were developed on agentive nouns (e.g. bridegroom, plaintiff); these are small coherent text passages that define and exemplify the noun in relation to its whole frame. The frame example sections mention related frame elements, collocating verbs and describe the typical scenario underlying a semantic frame, in order to promote decoding, i.e. understanding the meaning of lexical items, as well as encoding, i.e. learning words and finding related language material. The paper will be rounded off by presenting the results of a small user-study that was conducted on the frame example sections.

Keywords: frame semantics; learner's dictionaries; cognitive lexicography; user-study

1 Frame Semantics and Learner's Dictionaries

Frame semantics in Fillmore's terms (1982) has come to be a widely accepted notion of semantic description, and in relation to lexicography, it has inspired the FrameNet online project (cf. Fontenelle 2003). In traditional lexicography, however, the approach has been neglected so far and even deemed useless (Bublitz and Bednarek 2004: 50). This paper will, however, demonstrate how frame semantics can be used in English monolingual learner's dictionaries. The approach is part of the larger concept of cognitive lexicography (cf. Ostermann 2012 and fthc.), in which theories and semantic analyses of cognitive linguistics are used in common lexicographic practice in order to create dictionary features and entries which are more accessible to the dictionary user, since they use and describe language in the same way the users process it.

Frame semantics is a very useful tool for meaning description in lexicography: Fillmore and Atkins (1992, 1994, 2000) have demonstrated several times in how far a frame approach can help with distinguishing meanings of polysemous items ('risk') and ensure a more realistic display of their different senses. This is one example of what Geeaerts (2007: 1168) refers to by stating generally that cognitive linguistics can enrich lexicography by a more realistic conception of semantic structure.

The feature proposed here aims at a more vivid exemplification of lexemes within the context of their frame, enabling the user to acquire new vocabulary from the frame and find important collocates for encoding, e.g. writing purposes. The feature replaces or complements example sentences in traditional dictionary entries as a so-called *frame example section (FE-section)*. In the following, the structure and composition of FE-sections will be outlined, illustrating how they fit into a dictionary entry while at the same time offering an onomasiological access to the dictionary's macro-structure. A few remarks on a user-study conducted will round the paper off.

2 Frame Example Sections

2.1 Theory and Structure

For the application of frame semantics to a traditional dictionary entry the example section has been selected. Example sentences are especially suitable for being replaced or supported by *FE-sections* since they do not carry the main burden of rendering meaning but complement the definition by showing the meaning in context and offering typical collocations (cf. Drysdale 1987: 218-222). Since the FE-section is a small coherent text passage on a lexical item and mentions the frame with its frame elements and most important collocations, it additionally allows the user to grasp the meaning better. Regarding its language, the style of FE-sections is natural and typical, informative and intelligible, as good examples are supposed to be (Atkins and Rundell 2008: 458). This generally follows Fillmore's demands (2003: 283) that we should define "not words but only families of words that jointly express one frame".

For the writing of FE-sections, a suitable lexeme has to be chosen; in addition to the lexical items treated, the frame semantic content for each FE-section has to be established. The relevant frame and its frame elements are determined by using elicitation techniques, i.e. simple questions such as 'who', 'where', 'what', 'which aim'?. Superordinate place and collocating verbs are determined, and information from FrameNet is taken into consideration if the frame also figures there. Authentic language material is also collected from the BNC web, especially for collocations and related lexical items. Rundell (1988: 135) observed here very early that "(...) any account in a learner's dictionary of the word problem should at the very least mention as significant collocates the verbs pose and (especially) solve" and this can be ensured by an analysis of authentic language material. The FE-sections are written with the help of this collective input. Once the text has been produced, various perspectives in ac-

cordance with the various frame elements are created in order to be able to enter the FE-section at all the lexemes in the dictionary that are part of the frame. Finally, the potential for a related frame is checked, i.e. synonyms, antonyms or related semantic fields. The figure below summarizes the process of writing FE-sections.

SET-UP OF FRAME EXAMPLE SECTIONS:

- 1. Choice of the lemma: person-denoting noun.
- 2. Identification of the frame and frame elements.
- 3. Collection of authentic language material from the BNC, esp. of collocations.
- 4. Writing of the (main) frame example section with its annotations.
- 5. Check for perspectives of the frame example section.
- 6. Check for semantic 'spin-offs', i.e. related frames.
- 7. Decision of places to enter in the dictionary (in line with perspectives).

Table 1: Set-up of frame example sections.

2.2 The Set of Frame Example Sections

The FE-sections developed in this proposal centre on so-called person-denoting nouns. These are nouns that occupy an agentive slot in a frame, denoting a person and its habitual activities, and therefore provide a good perspective as a start, especially since they comprise actions and objects, as well as people or places that interact. The table below lists all the lexemes with their respective frame for which FE-sections have been produced. These 17 lexemes can also be divided into three groups: EVENT-frames (where something happens, usually starting with a preposition of time), ACTIVI-TY-frames (starting with *when* and introducing the setting of the frame), and PLACE-frames (taking place at typical locations).

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bridegroom WEDDING = caretaker BUILDING = conductor ORCHESTRA = conductor TRAIN = landlord RENT = librarian LIBRARY = mayor CITY = midwife BIRTH = pawnbroker MONEY = plaintiff COURT = striker FOOTBALL = surgeon OPERATION = suspect POLICE = umpire SPORT = undertaker FUNERAL = usher PERFORMANCE = waiter RESTAURANT
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Table 2: Person-denoting nouns and their frames.

For the lexeme *bridegroom*, the FE-section is reproduced below with annotations: the WEDDING-frame is an event frame, i.e. one where something happens. *Bridegroom*, *bride*, *husband* and *wife* are frame-constitutive elements, i.e. those which are necessary to understand the frame, and are printed in small capitals. Frame-supportive elements, i.e. those which are optional for an understanding of the frame and rather expand it, here *priest/pastor*, *church*, *reception*, are underlined. Collocations (*on the wedding day*, *to get married*) are given a dotted underlining. The full annotations including sources of au-

thentic language material (here from BNC web and FrameNet) and perspectives for the FE-section on *bridegroom* can be found in the appendix, as well as the FE-sections for all the other items.

bridegroom - WEDDING

On their wedding day, the <u>Bride</u> and the <u>Bride</u> and <u>get married</u> and become Husband and wife. A <u>priest or pastor</u> in <u>church</u> traditionally marries them with family and friends present. Afterwards, there often is a <u>wedding reception</u>.

ANNOTATION:

 $[\underline{On^{coll}}]$ their wedding day]^{Event}, the $\underline{bride^{Partner1/WhoColl}}$ and the bridegroom $\underline{Partner2/Who}$ get $\underline{married^{CollActivity}}$ and become $\underline{Partner2/Who}$ husband and wife $\underline{Partner3}$. A \underline{priest} or \underline{pastor} in $\underline{church}^{Where}$ traditionally marries them with family and friends present. Afterwards, there often is a $\underline{Wedding}$ reception $\underline{Partner3}$.

Table 3: FE-section for bridegroom.

2.3 A Cognitive Macro-structure

Many of the person-denoting nouns are rather rare items (cf. pawnbroker, plaintiff, usher) or only supposedly transparent lexical items (caretaker, landlord), which makes them very interesting in a language-learning perspective. It would be ideal if, once these items are looked up, they would become attached to a user's mental lexicon, possibly via familiar material and links within their frame. This is also the reason why the various perspectives of FE-sections are written und the FE-sections should be entered repeatedly at the entries of all their participating lemmata.

In this way, all the person-denoting nouns also contribute to a macrostructure that exhibits more links between single items than traditional dictionaries do, and one that also allows for onomoasiological access. Every FE-section spans a small net over the macro-structure with its single frame elements; all FE-sections together span an even larger net since they often share elements or deal with polysemy (cf. the two FE-sections for *conductor*).

This is also in accordance with Geeraerts' assumption (2007: 1169) that "Cognitive Linguistics may also suggest ways of dealing with the links between the senses of lexical items that go beyond common practice". If we suppose that the FE-section is – whether incorporated within the dictionary entry or in a box nearby – clearly delimited regarding its layout (e.g. use of colours, etc.), it almost automatically leads the user to related entries, especially since the same information of one frame can be found in all the places of the frame in the dictionary. In an electronic, online or CD-ROM-version of a dictionary, this could even be achieved more effectively by hyperlinking. FE-sections therefore also fulfill lexicographically the function of signposts (the capital print of the frame as a meaning indication via synonym, cf. DeCesaris 2012) and of component-internal implicit cross-references (cf. Svensén 2009: 388 and 391), in which many entries of one frame, but also across frames are linked.

3 A User-Study on Frame Example Sections

3.1 Methodology

In order to determine the usefulness of FE-sections, a small-scale user-study was conducted with 50 university students of English. The hypothesis was that in a two-part production-oriented primed vocabulary task, the group of students in the target group (n^t =25) who received dictionary entries of the respective lexemes, complemented by FE-sections, would perform better than those in the control group (n^c =25) who worked with traditional dictionary entries only.

The participants received in the first part of the experiment a randomised reading booklet with the LDOCE5-dictionary entries of 12 of the above-mentioned lexemes as a prime (two groups of six items: caretaker, midwife, pawnbroker, plaintiff, umpire, usher and conductor¹, conductor², landlord, striker, surgeon, undertaker). The participants in the target group worked with reading-booklets in which the dictionary entries were complemented by the FE-sections; the participants in the control group received dictionary entries complemented by reading material on the lexemes taken from the BNC, so that both groups had the same amount of reading material to master. On each page of the booklet, they found one entry and were supposed to read it carefully within ca. 25 seconds, turning the page only when being told to do so and not going backwards. This session was devised as primed input for the second part of the experiment, which followed after a break of approximately 45 minutes. In this second part, the test subjects received a worksheet on the 12 person-denoting nouns, on which they were supposed to give a German translation of each noun, define it in their own words and tick off in a list whether they had known the word before.

It must be noted generally, however, that the hypothesis could not be verified, since the experiment yielded inconclusive, statistically non-significant results.

3.2 Results and Discussion

Regarding the knowledge of the test items, it can be concluded that the test was conducted in a homogeneous group with approximately the same level of knowledge of all the items across the participants. The items from the first group, such as *pawnbroker*, *plaintiff*, *usher* and *umpire*, were rated very low and were fairly unknown, whereas the items from the latter six received higher ratings.

For the results of the translation task (reproduced in the chart below), the scores of correct translations were counted for each item in both groups and compared; the significance of difference was checked with the help of the χ^2 -test. The numbers of correct translations are approximately equal for all items, with the exceptions of *pawnbroker* and *landlord*, which proved to be statistically significant (χ^2 = 2.01, p<0.20 and χ^2 = 3.57, p<0.10). It should be noted, however, that many students seemed to have had problems in coming up with a good translation, since a certain number of the participants suggested e.g German 'Torschütze' instead of 'Torjäger' for *striker* and did not even seem to be aware of the

semantic difference. Therefore, demanding a German translation might not have been the best measure, as it yielded problems of its own, even when the concepts behind the lexical items were apparently understood, since in many cases, correct paraphrases were given.

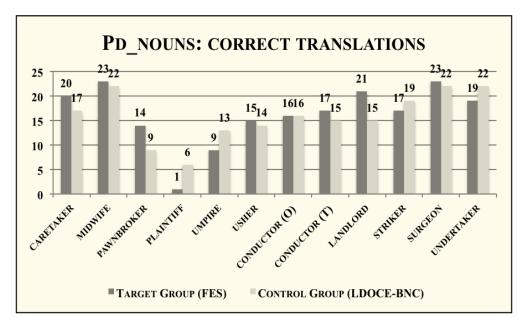


Figure 1: Results of translation task

In order to evaluate the results of the paraphrasing task, a point system was devised. Points were assigned in the participants' paraphrases to a correct paraphrase in general, to the frame mentioned and to all the frame elements reproduced. Generally, the participants in the target group scored higher for each item and in general (36.22 points on average compared to 29.34 points for the participants in the control group), and their paraphrases were also longer (14.97 words on average compared to 11.48 words in the control group). It has to be admitted, however, that there is a certain correlation between the amount of input and output, which, on the other hand, admits the conclusion that more input in the form of FE-sections is indeed beneficial. It should be noted that a learning effect (i.e. when people indicated that they had not known the word before but gave a correct definition) could be achieved more often in the target group and that the number of paraphrases given compared to the number of correct paraphrases given was equal in more instances in the target group. The non-transparent item *landlord* ('Vermieter' in German, but its parts often translated literally as 'Landherr' / 'Lehensherr') caused fewer misunderstandings among the participants in the target group, the effect of which can also be attributed to the cognitive FE-sections. Therefore, the FE-sections did score an effect, even if it was small and statistically not significant.

Overall, it can be concluded that the complexity of the task probably made it difficult to measure the effect that FE-sections can have. The reading time might not have been sufficient for vocabulary acquisition, especially since "lexical acquisition is not immediate" (Béjoint 1988: 145), and vocabulary items will not get a real foothold in one's mental lexicon through decoding alone (Atkins and Rundell

2008: 410). The more difficult the items were (e.g. *plaintiff* compared to the simpler *midwife*), the poorer the results were, or the more blanks could be found on the worksheets; only single instances of a better performance with one item or another, or cases of real vocabulary acquisition in the target group could be ascertained. Possibly, the wealth of information in the FE-sections also hindered immediate acquisition with difficult items. These effects could be elucidated in another test condition or in a longer testing phase with repeated tasks or dictionary training of the participants.

4 Conclusion

All in all, it can be concluded that FE-sections are a new approach for EFL-lexicography which would probably work best in an individual look-up situation. Although no superior results over traditional dictionary entries could be proven statistically, the benefits still come into play, and this is one step on the way to a more cognitive and more onomasiological dictionary of encyclopaedic nature.

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Appendix 1: An Annotated Example for *bridegroom*

bride, bridegroom, husband, wife, church, priest / pastor ⇒ superordinate place: church ⇒ collocating verb: marry ⇒ kind of frame: EVENT 2.a Elicitation techniques ⇒ who, where, activity, goal? Forming_relationships ⇒ Partner 1, Partner 2, Partners; Epistemic stance ⇒ Partner 1 interacts with Partner 2 (also collectively called Partners) to change their social relationship. 3.Authentic language material Collocations from BNC to get married; (on their) wedding day, wedding reception, bride 4.Frame example section On their wedding day, the BRIDE and the BRIDEGROOM get married and become HUSBAND and WIFE. A priest or pastor in church traditionally marries them with family and friends present. Afterwards, there often is a wedding reception. ANNOTATION [Oncoll their wedding day] Pressor, the bride Partners Mysbool and the bridegroom Partner 2000 get married collectivity and become change relationship/ Josel husband and wife Partners. A priest or pastor in church where traditionally marries them with family and friends present. Afterwards, there often is a wedding reception. 5. Different perspectives BRIDE On their wedding day, the BRIDE gets married to her BRIDEGROOM and they become HUSBAND and WIFE. A priest or pastor in church traditionally marries them with family and friends present. Afterwards, there often is a wedding reception. On their wedding day, the BRIDE groom gets married to his BRIDE and they become HUSBAND and WIFE. A priest or pastor in church traditionally marries them with family and friends present. Afterwards, there often is a wedding reception. On their wedding day, the BRIDEGROOM gets married to his BRIDE and they become HUSBAND and WIFE. A priest or pastor in church traditionally marries them with family and friends present. Afterwards, there often is a wedding reception.	2. Frame: WI	EDDING	
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Table 4: Full annotation for bridegroom.

Appendix 2: The set of frame example sections

bridegroom WEDDING	On their wedding day, the <u>Bride</u> and the <u>Bride</u> and <u>get married</u> and become <u>Husband</u> and <u>wife. A priest or pastor</u> in <u>church</u> traditionally marries them with family and fri ends present. Afterwards, there often is a <u>wedding reception</u> .	
caretaker BUILDING	In a <u>public</u> building, e.g. a <u>school</u> , a <u>caretaker</u> (or also janitor) is the person who <u>looks after</u> the <u>building</u> . S/he takes care of the <u>building</u> 's <u>maintenance</u> and makes sure that everything is in order, that broken things are <u>repaired</u> or that <u>rules</u> are obeyed. The <u>caretaker</u> usually has his or he own office in the <u>building</u> where s/he can be found.	
conductor TRAIN	In a train, a conductor (or also guard) is responsible for <u>checking and collecting</u> or also selling the passengers' tickets; s/he furthermore is in <u>charge</u> of the train, making sure everything is in order or answering the passengers' questions. Conductors also travel on buses where they collect the <u>fare</u> .	
ORCHESTRA	When an Orchestra of Choir performs, either as a <u>rehearsal</u> or in front of an audience, a conductor stands <u>in front</u> on a <u>podium</u> and conducts, i.e. directs the musicians' performance with a <u>baton</u> (small thin stick). The musicians follow the conductor's movements so that all play in a coordinated way and the <u>performance</u> sounds good.	
landlord RENT	When you rent a place to live, i.e. an <u>apartment/flat or a house</u> , you pay money, the rent, to the Landlord who owns the <u>building</u> and lets you live there. You are then the Tenant and a formal <u>contract</u> , the <u>lease</u> , guarantees your rights as a Tenant.	
librarian LIBRARY	In a Library, a Librarian is the person who is in charge of running the <u>institution</u> , i.e. <u>lending</u> BOOKS or other <u>materials</u> to <u>Library users</u> . People can <u>read</u> the BOOKS there or they can <u>borrow</u> them. <u>Schools and universities</u> usually have their own libraries and their use is often free of charge.	
mayor CITY	In a CITY OF TOWN, the MAYOR is the head of the local GOVERNMENT. S/He is <u>elected</u> directly by the <u>citizens</u> and resides in a <u>city of town hall</u> . S/he fulfils official <u>duties and functions</u> and makes decisions in local <u>politics</u> .	
midwife BIRTH	When a <u>pregnant</u> woman <u>goes into labour</u> and is about to give birth to a <u>baby</u> , she usually goes to <u>hospital</u> . There, she gets help from a MIDWIFE, who is a <u>nurse</u> helping women to get through <u>labour</u> <u>pains</u> and who also takes care of the MOTHERS and their <u>Babies</u> before and after birth.	
pawnbroker MONEY	When you are in urgent need of Money, but cannot or do not want to <u>borrow</u> money from a <u>bank</u> , you may turn to a pawnbroker in a pawnshop. S/he will <u>lend</u> you money in exchange for <u>valuable</u> objects, e.g. <u>jewellery or electronic devices</u> . If you cannot pay back the money after a certain while, the pawnbroker will <u>sell</u> what you have <u>Pledged</u> .	
plaintiff COURT	In court, a plaintiff <u>brings</u> a <u>case</u> against another person, the <u>defendant</u> . The plaintiff is usually supported by a <u>laywer</u> (in Britain a <u>solicitor</u> in the lower courts of law) to fight the case successfully, and the <u>judge</u> or a <u>jury</u> has to decide on the <u>verdict</u> .	
striker FOOTBALL	In a football <u>Match</u> , the striker is the player whose main task on the pitch it is to <u>score</u> a goal and help his team to <u>win</u> , which the other <u>team's</u> players and especially the <u>goalkeeper</u> try to prevent.	
surgeon OPERATION	During an Operation, a surgeon is the doctor who <u>cures</u> and <u>rescues</u> patients by performing surgery, i.e. by operating on patients in a hospital in an Operating theatre with <u>nurses</u> and other doctors assisting. Patients who <u>undergo</u> surgery are seriously ill and usually stay in hospital to <u>recover</u> .	
suspect POLICE	When the POLICE think that a person took part in a CRIME, they <u>arrest</u> this person, who is a suspect. After the Arrest, the suspect is taken into <u>custody</u> at the POLICE STATION for a <u>police</u> <u>interview / an interrogation</u> .	
umpire SPORT	During a sports competition in an <u>arena</u> , an umpire is the person who <u>makes sure</u> that rules are obeyed. There is an umpire present in e.g. <u>baseball</u> , <u>tennis</u> , <u>cricket</u> , <u>hockey</u> , <u>or athletics</u> competitions; s/he also <u>calls</u> the <u>score</u> , <u>decides</u> on <u>penalties</u> , <u>starts</u> races, or <u>reports irregularities</u> to chief umpires (depending on the discipline).	
undertaker FUNERAL	After somebody's death, a funeral is held at a cemetery. An undertaker of funeral director prepares the deceased person's <u>burial or cremation</u> and <u>arranges</u> the funeral <u>service</u> , so that people can attend the ceremony and <u>mourn</u> the loss of the <u>deceased</u> .	
usher PERFOR-MANCE / EVENT	When people go to see a <u>public</u> Performance or event, e.g. in a <u>theatre</u> , a <u>cinema</u> , a <u>concert hall</u> , <u>or a sports stadium</u> , they show their tickets to an usher (or usherette) who <u>shows</u> them their seats or even <u>guides</u> them there. Often, the usher also keeps order during a <u>show</u> .	
waiter RESTAURANT	In a restaurant, people sit at tables and eat a meal for which they have to pay the <u>bill</u> at the end. A waiter or waitress <u>brings customers</u> the <u>menu</u> first and later <u>serves</u> the <u>food</u> they <u>ordered</u> .	

Table 5: The Set of Frame Example Sections.