

## Prepositions in Dictionaries for Foreign Learners: A Cognitive Linguistic Look

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*The paper is an attempt to look at the problems faced by lexicographers compiling prepositional entries in dictionaries for foreign learners, and to suggest ways in which these problems could be alleviated. After discussing some of the reasons why prepositions are difficult to deal with in a dictionary, and reporting on the results of metalexicographic studies examining the treatment of prepositions in monolingual English learners' dictionaries and in three bilingual English-Polish dictionaries, Cognitive Linguistics is suggested as a source of important insights which could be of assistance in solving practical lexicographic problems. Among those insights are: the idea that the linguistic structuring of space functions as a mental template for other domains; recognition of the polysemic sense network of prepositional meanings; preference for principled polysemy over earlier unrestricted polysemy approaches; introduction of rigid criteria for the recognition of separate senses; recognition of the fact that the overwhelming majority of spatial senses of prepositions are related through metonymy. Drawing on the cognitive linguistic analyses of the semantics of English prepositions offered by Tyler and Evans (2003), some practical recommendations are made regarding ways in which prepositional entries in dictionaries for foreign learners could be made more informative and useful. These include a considerable reduction of the number of senses and examples of usage, an introduction of semantic "profiles" at the beginning of entries, and supplementing verbal illustrations with simple graphics, highlighting the salient meanings of particular prepositions, the links between different senses, and the differences between semantically close and therefore frequently confused items.*

### 1. Prepositions as a lexicographic minefield

The present paper is an attempt to look at the problems posed by prepositional entries in dictionaries for foreign learners and to suggest ways in which some of these problems could be alleviated with the help of insights made within Cognitive Linguistics.<sup>1</sup>

Lexicographers dread prepositions, just as they dread function words in general (see, e.g., Kirkpatrick 1985: 11). Doubts have been expressed (e.g., by Sinclair 1991: 81) whether a dictionary is a good place for grammatical words to begin with, given that dictionaries tend to be used primarily for looking up lexical words, and that the accepted conventions of dictionary microstructure are based on semantic, not functional criteria.

Foreign learners have their own reasons for dreading prepositions. In some cases (e.g., *out of*), even locating the relevant entry in the dictionary may pose a problem. Less trivially, because different languages conceptualise space in different ways,<sup>2</sup> even seemingly equivalent prepositions (e.g., English *on* and Polish *na*) cease to act as such in contexts other than those involving the most basic spatial configurations. In more complex cases,

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<sup>1</sup> For a radical proposal concerning the way in which Cognitive Linguistics could revolutionise the theory and practice of dictionary making, see Rivelis (2007). For the most impressive demonstration to date of how Cognitive Linguistics can be applied to the teaching of foreign languages, see Janda's work on Slavic (e.g., <http://hum.uit.no/lajanda/aspect/aimr>).

<sup>2</sup> It is generally accepted that the primary uses of prepositions are spatial and, less generally so, that all other uses derive from the spatial ones.

such as that of *at*—“a typically English preposition” (Cuyckens 1984)—a decontextualised equivalent may not be available at all, since many languages do not conceptualise a spatial relation at a corresponding level of generality.<sup>3</sup> There are also, of course, differences at the level of grammatical structure: in languages such as Polish, for instance, relations are expressed not only by prepositions, but also by case inflection. All this makes reliance on the native language a poor guide to mastering the behaviour of prepositions in a foreign language.

## 2. Metalexigraphic studies of prepositions in dictionaries

Studies of prepositional entries—in monolingual English learners’ dictionaries (MLDs) by Swanepoel (1998) and Coffey (2006), in bilingual English-Polish dictionaries by Adamska-Sałaciak (in press)—indicate that none of the reference works examined offer foreign learners the help they need.

Swanepoel (1998), who has looked at LDOCE, COBUILD and COD (editions not specified), notes that all three dictionaries present prepositions as long lists of numbered senses, thus creating the impression that these are completely arbitrary and must therefore be learnt by heart. The inclusion of COD in the study indicates that this way of presentation is not restricted to pedagogical lexicography, but is part of a long and respected tradition.<sup>4</sup>

Coffey (2006), who has examined the treatment of function words (including *at, by, for, from, in, of, on, to, with*) in CALD (2003), COBUILD (2003), LDOCE (2003), MEDAL (2002) and OALD (2005), argues that the detailed polysemic analysis offered by these dictionaries is superfluous from the point of view of advanced learners, as is information on basic uses, which such learners are unlikely ever to look up.

The analysis of entries for twenty-nine English prepositions (*about, above, after, along, around, at, before, below, beside, between, by, down, for, from, in, into, of, off, on, onto, over, since, through, to, under, up, with, within, without*) in three large English-Polish dictionaries (NKFD, PWNO, WSAP) carried out by Adamska-Sałaciak (in press) reveals a number of shortcomings. The adoption of source-language-based sense structure and the concomitant no-lumping policy result in absurdly long entries: PWNO has 29 senses and 160 illustrative phrases in its entry for *for*. What is more, a lot of the information is simply redundant, the same phenomenon being illustrated many times in different places. Several non-interchangeable equivalents are often listed one after another in a single sense without any attempt at differentiation. Even when sense discrimination is present, it is of little help to the Polish user when given in the dictionary’s source language. Explicit information concerning the English-Polish interface (e.g., that a given English preposition plus noun regularly corresponds to a particular inflectional case of a Polish noun) is typically lacking. The semantic connections among different senses are only sporadically visible, thanks to the spatial sense being given first (perhaps the only clearly discernible rule as far as sense ordering is concerned), to a label signalling a figurative extension, or to a gloss pointing to a given equivalent as appropriate for both spatial and temporal uses.

It does not seem too far-fetched to suppose that a study of the treatment of prepositions in other bilingual dictionaries (with or without English as one of the object languages) would yield similar results.<sup>5</sup> There is thus plenty of room for improvement, in monolingual as well as bilingual learners’ dictionaries.

<sup>3</sup> For a comprehensive analysis of *at* within the cognitive framework, see Kokorniak (2007).

<sup>4</sup> The effects of applying this policy are perhaps most striking in period dictionaries: DOE, e.g., presents the prepositions *for* and *from* as having more than 100 senses each (Healey 2002: 139).

<sup>5</sup> To give just one example, Pedersen (1984) identifies the following problems with the prepositional entries in DEO: excessive length, proliferation of senses, and great discrepancies between the ordering of senses and the frequency of English equivalents of Danish prepositions in translated texts.

### 3. Cognitive Linguistics as a possible way forward

Authors of traditional grammars, while confident that, in general terms, a preposition expresses a relation between two entities, admit defeat when it comes to details: “[o]f the various types of relational meaning, those of PLACE and TIME are the most prominent and easy to identify. Other relationships such as INSTRUMENT and CAUSE may also be recognized, although it is difficult to describe prepositional meanings systematically in terms of such labels” (Quirk and Greenbaum 1973: 143). One reason for the difficulty may be that prepositional meaning is among those aspects of language which, according to Talmy (In press), are characterised by a very low degree of accessibility to introspection.

Until recently, theoretical linguists did not have much to offer, either. Basing the semantic analysis of prepositions solely on notions such as dimensionality, contiguity, support, or containment was recognised as an oversimplification, since many prepositional uses are highly abstract. Moreover, “the individual meanings of the prepositions overlap, creating a lexical nightmare for anyone trying to represent prepositional meaning on the basis of semantic contrast and a syntactic nightmare for anyone trying to characterize their occurrence on the basis of lexical meaning or grammatical category alone” (Rice 1992: 90).

That we should turn for clues to Cognitive Linguistics is by no means a novel proposal. Geeraerts (e.g., 1990, 2001) has long argued that the cognitive framework can shed new light on the lexicographic treatment of polysemy, while Swanepoel (1998) has explicitly suggested employing the theoretical apparatus of Cognitive Linguistics in the presentation of prepositions. Indirect confirmation that this may be a step in the right direction has come from Tyler and Kim (In press), who show that prior instruction in the meanings of prepositions—presented in cognitive linguistic terms, i.e., as polysemy networks—significantly increased the performance of Korean learners of English in tasks involving the use of the relevant items.

What, then, stands behind the belief that Cognitive Linguistics can illuminate the sense relations coded by individual prepositions and thus suggest potential solutions for pedagogical lexicography? For a start, within Cognitive Linguistics grammar is claimed to be meaningful and to form a continuum with the lexicon. It follows that a grammatical word can and should be described not only in terms of its function(s), but also with regard to its meaning(s); in fact, the description of meaning ought to be given priority, since it is a word’s semantics which motivates its grammatical behaviour.

Spatial prepositions constitute one of the canonical research topics of Cognitive Linguistics, it being taken as axiomatic that the linguistic structuring of space functions as a mental template for other, more abstract domains. While the belief as such is not restricted to any one school, linguistic or otherwise,<sup>6</sup> cognitive linguists go significantly further: “[t]here is general agreement that spatial prepositions involve a network of interrelated senses, some of which are more prototypical or central than others, although [...] there is little consensus on specific details” (Goddard 2002: 278). It would therefore appear that what we must look at is not Cognitive Linguistics *sensu largo*, but a specific version (or versions) thereof.

Among the most promising strands of research is the “principled polysemy” approach championed by Tyler and Evans (2003). The approach has been put forward as a way of overcoming the “polysemy fallacy”<sup>7</sup> which is widely believed to mar earlier cognitive linguistic treatments of prepositions. In those early—by now classic—studies, such as Brugman (1981) or Lakoff (1987), failure to distinguish between truly distinct senses and minor variations of a single sense (the latter being exemplified by *The bird flew over the yard*, *The plane flew over the hill*, *The bird flew over the bridge*) led to postulating an excessive number of senses for a particular item (Sandra and Rice 1995: 99).

<sup>6</sup> As noted by Itkonen (2005: 27), “[t]hat space (and motion) constitute the (analogical or metaphorical) basis for abstract notions, is a very old idea”, present already in the writings of Leibniz.

<sup>7</sup> A term coined by Sandra (1998).

On the methodological level, the principled polysemy approach can thus be seen as a way of imposing discipline upon the semantic analysis of prepositions, in line with the universally acclaimed principle of Occam's Razor. From the strictly linguistic point of view, it rests on the assumption that not every aspect of an utterance's meaning must be explicitly coded in the lexical items which make it up. Part of the meaning always resides in the (linguistic) co-text and the (situational) context, combined with the world knowledge shared by the interlocutors.<sup>8</sup> Thus, instead of postulating a high degree of polysemy for a particular preposition, we should expect many different uses thereof to be derivable from a few basic senses plus the relevant co(n)text and our knowledge of the world.

Tyler and Evans (2003: 59) argue that a distinct sense of a preposition must either involve a different spatial configuration or prompt for an additional, non-spatial meaning. Also, there must be instances thereof that are context-independent, that is, instances in which that sense could not be inferred from another plus the context of occurrence (Tyler and Evans 2003: 42f.). The detailed semantic analysis they offer of the twenty or so most common English prepositions can, in my view, constitute a reasonable point of departure for presenting the polysemic sense networks of prepositions in pedagogical dictionaries.

Other (and better-known) cognitive linguistic ideas which can be exploited by lexicographers include the identification of mechanisms responsible for the links between particular prepositional senses. As observed, e.g., by Taylor (2003: 329), the majority of spatial senses of prepositions are related to one another through metonymy. Among the most frequent types of conceptual metonymy are such correspondences as whole: part, e.g., path followed: any point on the path, especially salient being the end-point (e.g., *He walked across the street: He lives across the street*); goal: place (e.g., *We hung the picture over the sofa: The picture hangs over the sofa*); multiplex conceptualisation: mass conceptualisation (e.g., *There were soldiers posted along the road: The railway track ran along the road*). When it comes to linking the concrete senses of prepositions with their abstract senses, the primary mechanism is metaphor, sometimes combined with metonymy, e.g., MORE IS UP (e.g., *It cost me over 200 Euro*).

#### 4. Practical recommendations

It is impossible to mention all the cognitive linguistic insights implicit in the proposals made below.<sup>9</sup> It will be obvious to anyone even vaguely familiar with Cognitive Linguistics that the semantic analyses underlying the suggested lexicographic solutions rely on notions such as conceptualisation, construal, profile/base, trajector/landmark (more generally, figure/ground organisation), or perspective.<sup>10</sup> It should be equally obvious that none of these need to be explicitly referred to in a dictionary. They are, however, essential for the lexicographer's understanding of the relevant semantic distinctions, an understanding without which s/he can hardly hope to be able to explain those distinctions to the dictionary user.<sup>11</sup>

So what can be done to make the dictionary treatment of prepositions more useful and user-friendly? To begin with, I would recommend an overall shortening of entries, a shortening involving not just the elimination of redundant examples, but, most importantly, a reduction in the number of

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<sup>8</sup> Cognitive Linguistics holds that there is no clear-cut distinction between linguistic and extralinguistic knowledge (or between semantics and pragmatics): "the only viable semantics is one that avoids such dichotomies and is consequently *encyclopedic* in nature" (Langacker 1987: 154).

<sup>9</sup> Some solutions similar to those I propose in this section have been put into practice in MPVP, a dictionary of English phrasal verbs. I am grateful to an anonymous reviewer for bringing this publication to my attention.

<sup>10</sup> For definitions see Langacker (e.g. 1991, 1999).

<sup>11</sup> If the lexicographer in question does not feel comfortable consulting theoretical linguistic literature, the alternative might be to take a look at Lindstromberg (1998), a book cognitive in spirit but relatively free of technical detail (though, as a result, not entirely free from terminological confusion).

senses. For MLDs, the rationale behind this proposal is that, in line with the principled polysemy approach, we should separate genuine sense distinctions from instances of contextual modulation. In the case of bilingual dictionaries, for which I am generally in favour of target-language-based entry structure,<sup>12</sup> the reduction would follow automatically from lumping senses where the same equivalent applies. Irrespective of dictionary type and of the linguistic and/or metalexigraphic justification for reducing the size of entries, adoption of this policy should increase the likelihood of the entries actually being consulted.

The space thus saved could be put to better use. Instead of multiplying senses and examples, we should consider preceding the entry proper with a descriptive profile of a given preposition, similar to what might appear in a good pedagogical grammar.<sup>13</sup> The profile would be constructed in accordance with the precepts of Cognitive Linguistics, showing the primary sense and the (metonymic and metaphorical) links leading from it to other senses.

The descriptive section would be followed by what is traditionally found in a dictionary entry, i.e., definitions or equivalents, set phrases, and examples of usage. Some entries would also include notes on the relations within the prepositional system (e.g., functionality in *over/under* vs lack of functionality in *above/below*; primary goal in *to* vs oblique goal in *for*; bounded landmark in *through* vs planar landmark in *across*). Additionally, a bilingual dictionary should feature information on the relevant interlingual contrasts, spelling out the differences between the source-language preposition and its target-language equivalent(s), and formulating general grammatical correspondences (e.g., English *of* plus noun: Polish noun in the genitive).

In terms of the macrostructure, there are good grounds for combining the dictionary treatment of a given preposition with that of a corresponding adverb or particle. (In fact, some dictionaries already do that, but not systematically, and probably often for no other reason than convenience). It does not take a professional linguist to realise that the meaning of a preposition like *over* (or, rather, the concept behind it) cannot be unrelated to that of the adverb *over*, the particle *over*, or the prefix *over-*.<sup>14</sup> Accordingly, it makes eminent sense to discuss a given concept in one place and show how it is realised by different parts of speech. By doing so, we avoid repeating the same information in different entries and at the same time make the dictionary user aware of the semantic motivation of grammar; hopefully, we also make things easier to learn.

It might be objected that following the suggestions made in this section means violating the principle that entries should be uniformly structured across the dictionary. I think it is worth sacrificing this general principle in view of the potential gains for the student which made-to-measure entries can generate.

Finally, to assist those dictionary users who favour the visual learning style, both entry-initial profiles and entry-final notes could sometimes feature simple graphics of the type commonly employed in cognitive linguistic literature and exemplified by Figures 1-5 (adapted from Tyler and Evans 2003).

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<sup>12</sup> See Adamska-Sałaciak (2006: 66 ff) for arguments.

<sup>13</sup> In the spirit of Sinclair (1991: 83), who believed that prepositions occupied a territory where lexicon and grammar met, and that the distinction between dictionaries and reference grammars would become blurred in the future (Sinclair 1987: 107).

<sup>14</sup> Tyler and Evans (2003: 62) use the term “spatial particle” to cover all four classes: prepositions (e.g., *over the rainbow*), particles in verb-particle constructions (e.g., *The fence fell over*), adpreps (e.g., *The game is over*), and particle prefixes (or bound spatial particles, e.g., *overflow*).

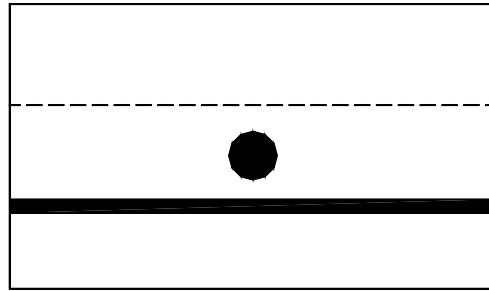


Figure 1. Proto-scene for *over*

- shaded circle – TR (trajector, or entity being located)
- heavy line – LM (landmark, or entity serving as a reference point or locator)
- dashed line – boundary of the region conceptualised as being within reach

Figure 1 diagrams the primary sense of *over*, viz., a spatial configuration where the trajector is higher than the landmark but still within potential contact with it (e.g., *The picture is over the mantelpiece, The tree is leaning over the river, The bee hovered over the flower*).

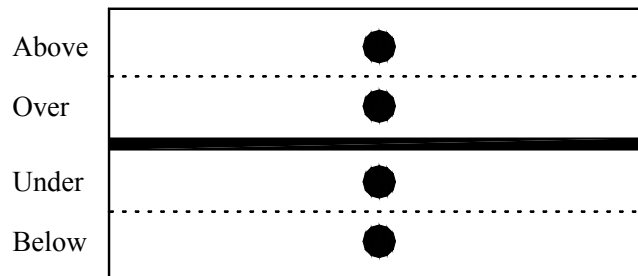


Figure 2. Comparison of *above, over, under* and *below*

- shaded circle – TR (trajector, or entity being located)
- heavy line – LM (landmark, or entity serving as a reference point or locator)
- dashed line – boundary of the region conceptualised as being within reach

Figure 2 demonstrates how the concepts realised linguistically by *above, over, under* and *below* divide the vertical dimension. It also shows that—while *over* and *above* share the meaning HIGHER THAN, and *under* and *below* share the meaning LOWER THAN—*over* and *under* conceptualise relative proximity of the trajector and the landmark, whereas *above* and *below* conceptualise relative distance between them. Put differently, in the case of *over* and *under*—unlike in the case of *above* and *below*—the trajector and landmark are within each other’s “sphere of influence” (Dewell 1994).

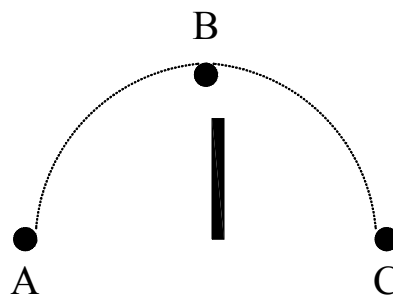
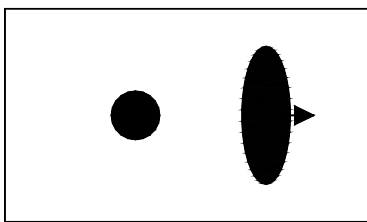
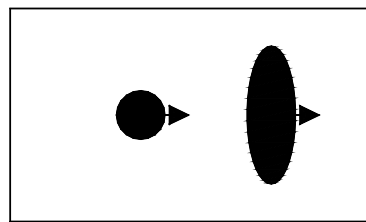


Figure 3: Links between different senses of *over*

- – TR (trajector, or entity being located)
- – LM (landmark, or entity serving as a reference point or locator)
- ABC – trajectory, i.e., path of TR’s movement

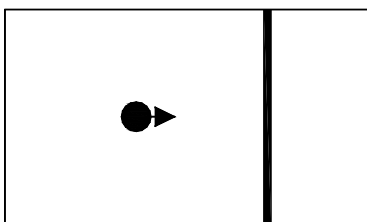
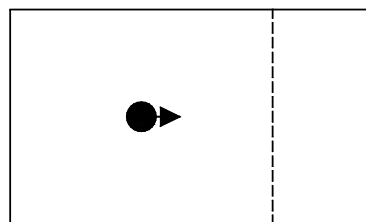
Figure 3 shows how the PATH sense of *over* (e.g., *The cat jumped over the wall*) is related through whole-part metonymy (depending on which part of the trajectory is profiled) to its (primary) HIGHER THAN sense (see Fig. 1) and to its ON THE OTHER SIDE OF sense (e.g., *They live over the hill*).<sup>15</sup>

Figure 4a. Proto-scene for *behind*Figure 4b. Proto-scene for *after*

smaller shape – TR (trajector, or entity being located)

larger shape – LM (landmark, or entity serving as a reference point or locator)

Figures 4a and 4b illustrate the most salient difference between the primary senses of *behind* and *after*: while in both cases the landmark is oriented (has an inherent front/back), the trajector is unoriented in the former (e.g., *Behind them stood a large table covered with presents*) and oriented in the latter (e.g., *The police came after the robbers*).

Figure 5a. Proto-scene for *to*Figure 5b. Proto-scene for *for*

shape on the left – TR (trajector, or entity being located)

vertical line – LM (landmark, or entity serving as a reference point or locator)

Figures 5a and 5b depict an important difference in conceptualisation between *to* and *for*: in the former case, the landmark—profiled, shown as a solid line—is the primary target or goal of the action described (e.g., *He ran to the hills*); in the latter, the landmark—not profiled, shown as a dashed line—is a secondary or oblique goal (e.g., *He ran for the hills*), facilitating the primary purpose of the action.

If any, or indeed all, of this should seem rather obvious, it is because the semantic analyses proposed by cognitive linguists largely agree with our pre-theoretical intuitions. As noted, among others, by Geeraerts (1988), Cognitive Linguistics continues and develops traditional (pre-generative, or even pre-structuralist) reflection on language. To my mind, this increases rather than diminishes its appeal, not to mention its potential for informing practical pursuits such as pedagogical lexicography and language teaching in general.

<sup>15</sup> This is a slight departure from Tyler and Evans (2003), who do not recognise a separate PATH sense for *over*. They argue that the interpretation of *The cat jumped over the wall* is constructed on-line, from the proto-scene for *over* (Fig. 1) combined with the knowledge of real-world force dynamics, viz., the knowledge that cats “cannot hover above walls and that they are subject to gravity, and that walls cannot be jumped through” (Tyler and Evans 2003: 57). Even if this particular sense is not instantiated in native speakers’ semantic memory, I still think that presenting *over* as having an established PATH sense can benefit foreign learners.

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