

In J. Evers-Vermeul & E. Tribushinina (eds) *Usage-based Approaches to Language Acquisition and Language Teaching*, pp. 47-71. Berlin: de Gruyter.

Applied cognitive linguistics and second/foreign language varieties: Towards an explanatory account

Gaëtanelle Gilquin

1. Introduction

Applied cognitive linguistics is a relatively recent addition to the theory of cognitive linguistics. One of the first book-length treatments of this topic is a collection of articles brought together in two volumes edited by Martin Pütz, Susanne Niemeier and René Dirven in 2001 and entitled *Applied Cognitive Linguistics*. In the introduction to the first volume, the editors note that “[e]ven if cognitive linguistics is a rapidly expanding linguistic paradigm, the impact of this new and revolutionary linguistic theory on various branches of applied research and on their pedagogical implications is only now beginning to be felt” (Pütz, Dirven, and Niemeier 2001: xiv). More than a decade later, despite the progress that has been made, it is still true that some branches of applied linguistics have not yet fully benefited from what Gibbs and Perlman (2006: 211) aptly call the “cognitive linguistic revolution” (cf. Achard and Niemeier 2004: 9; Gries and Wulff 2005: 184; Boers and Lindstromberg 2006: 305; Pütz 2007: 1139–1140). In this chapter I would like to focus on one such branch, namely second/foreign language learning, and show that introducing a cognitive dimension into the analysis (in the present case, a corpus analysis) may enhance its explanatory power.

The chapter starts by giving a broad overview of the field of applied cognitive linguistics, with special emphasis on second/foreign language teaching (which has attracted quite some attention in the cognitive literature) and second/foreign language learning (which tends to have been neglected). In Section 3, two case studies are used to illustrate how cognitive linguistics can account for some of the non-standard characteristics found in second and foreign language varieties. The first case study deals with transfer in English as a foreign language, using the concepts of prototypicality and psychotypology, whilst the second one adopts a Construction Grammar approach to study the misuse of prepositional complements in

institutionalized second-language varieties of English (New Englishes). The case studies, which both rely on corpus data, also serve to demonstrate that the explanatory power of cognitive linguistics represents a valuable complement to the descriptive adequacy of corpus linguistics, and that the combination of the two frameworks has much to offer from an applied perspective. The chapter ends with a brief discussion of what I see as promising avenues for research in applied cognitive linguistics, as well as some concluding remarks.

2. An overview of applied cognitive linguistics

The term ‘applied cognitive linguistics’, like the term ‘applied linguistics’, can be understood in various ways, from a very broad definition to a more restricted one. *The Oxford Handbook of Cognitive Linguistics*, for example, edited by Dirk Geeraerts and Hubert Cuyckens in 2007, has a section entitled ‘Applied and interdisciplinary perspectives’, which includes papers on lexicography, critical discourse analysis, cultural studies, cognitive poetics, philosophy, and psychology. Much narrower is Pütz’s (2007: 1139) definition, in which applied cognitive linguistics is restricted to “the acquisitional and pedagogical implications of Cognitive Linguistics in Second and Foreign Language Teaching/Learning”, and hence excludes the acquisition of a first language. Taking a middle-ground position, one can adapt the definition of applied linguistics found in the *Encyclopedic Dictionary of Applied Linguistics* (Johnson and Johnson 1998: 9), according to which applied linguistics refers “somewhat exclusively to the field of language teaching and learning, rather than to any field where language is a relevant consideration”, and thus define applied cognitive linguistics as the field concerned with the implications of cognitive linguistics for first (L1) and second (L2) language teaching and learning.

The implications of cognitive linguistics for first language acquisition have been explored in some detail over the last few years, and studies have demonstrated that the cognitive approach makes it possible to gain a better understanding of the processes underlying the acquisition of one’s mother tongue. In this section, however, I will not deal with first language acquisition (the reader is referred to, e.g., Tomasello 2003 or Tribushinina and Gillis, *this volume*), but will focus instead on second/foreign language teaching (Section 2.1) and second/foreign language learning (Section 2.2).

2.1. Cognitive linguistics and second/foreign language teaching

In Littlemore's (2009: 1) *Applying Cognitive Linguistics to Second Language Learning and Teaching*, we can read that "[c]ognitive linguistics is a relatively new discipline which is rapidly becoming mainstream and influential, particularly in the area of second language teaching." That the author mentions second language teaching, rather than second language learning, is probably not a coincidence, for the pedagogical applications of cognitive linguistics have far outnumbered the cognitive investigations into second/foreign language learning (see also Boers and Lindstromberg 2006 and De Rycker and De Knop 2009 for reviews of research into the pedagogical applications of cognitive linguistics).

In the two volumes on applied cognitive linguistics referred to earlier (Pütz et al. 2001a, 2001b), a large number of papers deal with the didactic applications of cognitive linguistics, and two subsequent collective volumes, published in 2008, specifically concentrate on this issue, one by Boers and Lindstromberg on vocabulary and phraseology instruction, and another one by De Knop and De Rycker on pedagogical grammar. The most frequently studied phenomena in this context are metaphors, idioms, phrasal verbs, and polysemous words (with metaphor often being a key element in the analysis of the other phenomena as well). Usually, the methodology proposed relies on the concept of semantic motivation, which claims that, although language is not fully predictable, it is not completely arbitrary either. It is argued that a number of forms can be motivated, i.e. retrospectively explained, that they somehow "make sense" (cf. Lakoff 1987: 448). The expression *She was fuming*, for example, can be explained by referring to the conceptual metaphor 'anger is fire' (anger is often understood in terms of fire, cf. *to be spitting fire*, *to be smouldering with anger*; Kövecses 2001: 93). The meaning of the idiom *jump the gun* (to start doing something too soon, especially without thinking about it carefully) can be motivated by revealing its original context of use, i.e. that of a contender in a running contest who leaves the blocks before the starting pistol has been fired (Boers and Lindstromberg 2006: 313). In phrasal verbs, the particle *across* normally describes motion from one side of a surface to another (cf. *walk across the road*). In *get one's ideas across*, it refers to figurative motion, the ideas crossing the space between the speaker and a human receiver (Rudzka-Ostyn 2003: 193). The polysemous verb *keep*, in its central sense, implies possession of an object, cf. *keep the change*. The motivation for using the same verb in *keep a secret* lies in the fact that when someone keeps a secret,

they do not let anyone else know/have it (Csábi 2004: 243). The same sort of reasoning has been applied to the different uses of prepositions (see, e.g., Evans and Tyler 2005).

Such motivational explanations are believed to help learners remember the words or expressions thus presented more easily. However, this belief sometimes seems more like an act of faith than a decision buttressed by empirical evidence. Tyler and Evans (2001: 98), talking about the teaching of tenses, state: “We **believe** that insights from cognitive linguistics have real merit in offering more systematic, motivated accounts of how English works” [emphasis added]. They also claim that “by assuming the perspective and methodology of cognitive linguistics it is possible to relate the non-temporal senses associated with tense with the time-reference meaning in a plausible way. This approach, **we suggest, should** facilitate language teaching by providing a systematic model of the links among the semantics of tense markers” [emphasis added] (Tyler and Evans 2001: 66). Other linguists, by contrast, take the time to experiment before making any judgement. Their findings, in some cases, augur well. Thus, Verspoor and Lowie (2003) show that an experimental group of learners who were taught figurative senses of polysemous words according to cognitive principles (i.e. by relating them to a core sense) performed significantly better than the control group. A study by Boers (2004) provides more mixed results, in that it questions the beneficial effects of the cognitive approach on vocabulary retention in the long term: while experimental students performed significantly better than the control group in a task involving metaphor awareness when the task took place as part of an immediate post-test, the results were no longer significantly different a year later, when both groups had to perform a similar task. As for Condon (2008), although she is generally favourable to the cognitive linguistic approach in teaching, she notes that one should be wary of the potentially negative effects of this approach. Her own qualitative data on the teaching of English phrasal verbs show that:

if the item has not been fully mastered, an active recall task may prompt the learners to retrieve the incorrect verb particle combination from memory but they believe the combination to be correct because they can justify their choice with an over-generalised Cognitive Linguistic explanation. This has the potential to lead to a situation in which the learner may be worse off than before with regard to certain phrasal verbs, because not only have they failed to learn the phrasal verb, but they are now unaware that they do not know it. (Condon 2008: 306)

All in all, however, the results are pretty encouraging, and as Boers and Lindstromberg (2006: 305) put it, “[a]lthough most controlled experiments reported so far have tended to be small-scale, taken collectively they are beginning to constitute a fairly robust body of evidence in favour of C[ognitive]L[inguistics]-inspired pedagogy.” This is an interesting conclusion for second/foreign language teaching, but also an important one for cognitive linguistics for, as Langacker (2008: 8) points out, “its effectiveness in language teaching [is regarded] to be an important empirical test for the framework.”

2.2. Cognitive linguistics and second/foreign language learning

While language instruction is certainly a very important aspect when it comes to non-native varieties of a language, the question of the processes underlying the acquisition of a second or foreign language is equally important for, as Ellis (2003: 95) rightly points out, “one cannot properly understand something without knowing how it came about.” It is possible that the findings made by cognitive linguists for first language acquisition (see Tribushinina and Gillis, *this volume*) are to some extent applicable to second language acquisition (SLA). Ellis (2003: 87), talking about connectionist models, notes that “[t]o the considerable degree that the processes of learning L1 and L2 are the same, these L1 simulations are relevant to SLA.” However, he adds that “[t]he problem, of course, is determining this degree and its limits” (Ellis 2003: 87). This uncertainty means that L1 studies are not sufficient and that similar efforts for L2 acquisition cannot be dispensed with. In Sanz’s (2005: 3) words, “[l]ike their counterparts in the field of first language (L1) acquisition, scholars in the field of second language acquisition (SLA) need to explain both the nature of language and how it is acquired, that is, what is learned and how it is learned.”

A review of the literature reveals that, in contrast to what happens with teaching, relatively few studies have sought to investigate second/foreign language learning from a truly cognitive perspective, i.e. using the tools and concepts of cognitive linguistics (and, one could add, with a sound empirical basis). In this respect, it is quite symptomatic, for instance, that the *Handbook of Cognitive Linguistics and Second Language Acquisition* (Robinson and Ellis 2008), which, of all books, should contain examples of cognitive approaches to the acquisition (or learning) of a second or foreign

language, does not really offer much in terms of genuine integration of cognitive linguistics and SLA. Some of the chapters simply provide a general overview of certain cognitive concepts, with no or little consideration for SLA, e.g. Taylor's (2008) chapter on prototypicality, which hardly refers to acquisition at all. Goldberg and Casenhiser (2008), in a chapter entitled *Construction learning and second language acquisition*, only deal with first language acquisition, except for a paragraph in the conclusion which alludes to the "clear, but as yet untested, implications for second language learning and pedagogy" (Goldberg and Casenhiser 2008: 210). The handbook also includes some clearly SLA-oriented papers, but these sometimes seem to lose sight of the cognitive linguistic aspect and its relation to SLA. Gries's (2008) chapter on 'Corpus-based methods in analyses of Second Language Acquisition data', for instance, demonstrates that as a theoretical paradigm cognitive linguistics is compatible with the methodology of corpus linguistics, and then goes on to show how corpora can be exploited (in general and in SLA), but does not really relate SLA to cognitive linguistics. Truly cognitive SLA studies represent a minority in Robinson and Ellis's (2008) handbook, and not all of them rely on a sound empirical basis.

The few studies that have adopted a cognitive linguistic framework to tackle an SLA issue, however, have proved that this combination is a very fruitful one, especially when it is backed up by empirical evidence. To illustrate this, I would like to describe three related studies that examine L2 acquisition processes empirically and from a Construction Grammar perspective. Gries and Wulff (2005) performed several experiments in order to determine whether foreign language learners have mental representations of constructions, as claimed (and demonstrated) for native speakers by proponents of Construction Grammar (e.g. Bencini and Goldberg 2000). In one of their experiments, which they replicated from Bencini and Goldberg's (2000) study, they asked German learners of English as a foreign language to sort a number of sentences (see Table 1) on the basis of their overall meaning. The learners could adopt different strategies to sort these sentences, focusing on the verb (*throw, take, cut, get*), focusing on the construction (transitive, ditransitive, resultative, caused motion), or using a combination of these two methods. Although one could have expected learners to resort to the more transparent verb-based sorting, Gries and Wulff discovered that they actually preferred the construction-based sorting in a majority of cases, which suggests that learners, like native speakers, are able to abstract away from the utterances they hear to produce mental representations of constructions.

Table 1. Stimuli used in Gries and Wulff's (2005) sorting study.

Construction	Stimuli
Transitive	Anita threw the hammer. Audrey took the watch. Barbara cut the bread. Michelle got the book.
Ditransitive	Chris threw Linda the pencil. Paula took Sue a message. Jennifer cut Terry an apple. Beth got Liz an invitation.
Resultative	Lyn threw the box apart. Rachel took the wall down. Nancy cut the tire open. Dana got the mattress inflated.
Caused motion	Pat threw the keys onto the roof. Kim took the rose into the house. Meg cut the ham onto the plate. Laura got the ball into the net.

Liang (2002, cited in Goldberg 2006) conducted a similar experiment with Chinese learners of English and found out that the higher the learners' proficiency, the more likely they were to opt for construction-based sorting. This, interestingly, is in line with the usage-based trend in Construction Grammar (and in cognitive linguistics in general), according to which the more instances of a construction a learner gets exposed to, the more likely s/he is to generalize (see also Section 3.2). Finally, Valenzuela Manzanares and Rojo López (2008), besides replicating Bencini and Goldberg's (2000) experiment with Spanish learners of English (and with similar results), also used data from a learner corpus to investigate learners' lexical preferences in certain constructions and compare them with native speakers' preferences. Studies like these, however, are few and far between, and, although there are indications that interest in such issues may be growing (see Pütz and Sicola 2010 for another example), there is still a long way to go before cognitive linguistics has revealed (and realized) its full potential for second/foreign language learning.

3. The explanatory power of cognitive linguistics in SLA

In this section, I would like to make my own, modest contribution to the neglected field of 'cognitive second language acquisition' by showing how

adding a cognitive dimension may help gain deeper insights into the processes underlying the acquisition of an L2. In particular, I would like to argue that cognitive linguistics holds explanatory power for SLA, which allows it, among other things, to account for some of the distinctive features displayed by second and foreign language varieties. As an additional aim, since I will be using corpora as a resource to investigate L2 production, I would like to show that the explanatory efficacy of cognitive linguistics represents an ideal complement to the descriptive adequacy offered by the methodology of corpus linguistics.

Two case studies will contribute to achieving this double objective. The first one will deal with transfer and rely on the concepts of prototypicality and psychotypology, whilst the second one will adopt a Construction Grammar approach to study innovation in the use of prepositional complements. These two case studies will also give me the opportunity to illustrate the analysis of two types of non-native varieties, namely English as a foreign language (EFL), found in settings where English is learned through formal instruction in countries that do not have English as an official language, and English as a second language (ESL), representing institutionalized varieties of English that are emerging in countries where English is an official or semi-official language (also referred to as ‘New Englishes’).¹

3.1. Prototypical transfer in foreign language varieties

The concept of transfer, according to which learners may transfer features from one language (usually their mother tongue) to another, has a long history in applied linguistics. The early studies of transfer used to have a very thin empirical basis, being typically based on just a few texts produced by learners from a specific population and, most of the time, no contrastive data at all except those coming from the linguist’s intuition. This often led to broad generalizations, hasty conclusions, and, more generally, lack of reliability (see Gilquin 2008a). With the advent of corpora, transfer studies came to rely on more data, more representative and more reliable. Two types of corpora appeared to be particularly relevant to the investigation of transfer: learner corpora, which contain data produced by language learners, and bilingual corpora, which are made up of data in two different languages (either translations of each other, or simply texts that are comparable in terms of register, topic, etc.).

The Integrated Contrastive Model (see Granger 1996; Gilquin 2001) proposes to combine these two types of corpora, as well as two methodologies they can be exploited with (contrastive analysis and contrastive interlanguage analysis), in an attempt to make more reliable claims about transfer. Contrastive analysis, which consists in comparing different languages in comparable corpora of original texts or in parallel corpora of source texts in one language and their translations in another language, enables the linguist to make predictions about the learner's interlanguage: identity between the L1 and the L2 is hypothesized to lead to error-free use by the learner, whereas mismatches between the L1 and the L2 are hypothesized to result in errors in the interlanguage through transfer of the L1 patterns into the L2. Next to this predictive power, the model also has diagnostic power. Through contrastive interlanguage analysis, that is, the comparison of learner data with native data or with data produced by learners from other mother tongue backgrounds, one can identify the specific features of the interlanguage of one or several learner populations, and then try to explain these features by examining the bilingual data. A slightly refined version of the model (see Gilquin 2008a) suggests adding one type of comparison, viz. a comparison between the learner's interlanguage and his/her native language, in order to establish transfer with even more certainty.

While this model is a powerful one and, unlike the first transfer studies, is based on authentic and representative data, it presents some problems. In particular, it exclusively relies on performance data, which show what learners produce, and hence only provides indirect information about competence (what learners actually know). It also neglects the cognitive dimension of transfer, that is, what happens inside the learner's mind. This is especially striking in the way the equivalence between the L1 and the L2 is determined in the model, namely by resorting to texts produced by expert (native) writers and translators, instead of considering the (sometimes incorrect) equivalents found in the learner's mental lexicon, which is what one should arguably do when studying an essentially cognitive phenomenon like transfer. Consider the case of false friends (see also Lowie and Verspoor 2004). While in a parallel corpus, the French word *actuellement* may be linked to English translations such as *at present*, *these days*, *nowadays*, *now*, *at the moment*, or *presently* (with perhaps stronger links with some of these translations), in the learner's mental lexicon it may very well be that the word *actuellement* is (incorrectly) linked with *actually*. In the normal course of events, such a correspondence will never appear in a corpus of translations

produced by expert (native) writers and translators, and could only emerge through a more experimental approach.

Transfer being a phenomenon that takes place first and foremost in the learner's cognitive system, it is important to consider what Kellerman (1983) calls the learner's psychotypology, that is, the learner's perception of the target language and of its relation with (and especially distance from) his/her mother tongue. In other words, as against corpus data, which reflect the objective distance between the L1 and the L2, psychotypology looks into the subjective distance between the two languages. Studies which have taken into account the element of psychotypology have underlined its importance (see, for example, Singleton 1987), but such studies are still, unfortunately, too rare. In what follows, I suggest combining the concept of psychotypology with that of prototypicality, and using elicitation techniques to probe into learners' competence and to integrate subjective distance (i.e. learners' perceptions) into the study of transfer.

Prototypicality implies that some members of a category are more representative of the category – more 'prototypical' – than others, which are more peripheral or marginal. The prototype is the most representative exemplar, the one most typically associated with the category. Prototypes have been shown to exist for natural categories (e.g. fruit or birds, cf. Rosch 1975), but also for linguistic categories (e.g. meanings or constructions, cf. Taylor 2003). The noun *ring*, for instance, is said to prototypically refer to a circular object (Langacker 2002: 2), and transitivity, which is traditionally defined by the presence or absence of an object, also presents prototype effects (cf. Hopper and Thompson 1980). Following these examples, it is reasonable to assume that in the mental lexicon of those who know (or learn) a foreign language, a word in one's mother tongue is prototypically associated with a certain equivalent in the foreign language. To come back to an earlier example, a French translator may know that the word *actuellement* has several translations in English, including *at present*, *these days*, *nowadays*, *now*, *at the moment*, and *presently*, but for some reason (which may have to do with his/her experience of the English language, orthographic or phonological resemblance, or other reasons), the translator may prototypically associate *actuellement* with, say, *at the moment*. That is, when asked to translate the word *actuellement*, s/he would spontaneously produce the phrase *at the moment* rather than any other possible translation. Note that, except perhaps for expert translators (especially those who are used to working with parallel corpora), the prototypical equivalent of a word does not necessarily correspond to its most frequent translation (see Gilquin

2008b for a similar remark about prototypicality in general). In this sense, the notion of prototypicality is closely akin to that of psychotypology: the prototypical equivalence established between two words reflects, not objective, but subjective closeness.

In order to elicit this perceived ‘prototypical equivalent’, I used the technique of the “first-come-to-mind” item (Ungerer and Schmid 2006: 41), which has also been employed in psychology to identify prototypes. In her psychological experiments, Rosch (1975) established prototypicality, among others, by asking subjects to name the first member of a category that they could think of (e.g. the first vehicle or the first piece of furniture that came to mind). The most frequently named entity across individuals was considered the prototype. Likewise, I asked learners to name the first L1 equivalent of an L2 word (or vice versa) that they could think of (e.g. “What is the first French equivalent of *besides* that you can think of?” or “What is the first English equivalent of *donc* that you can think of?”). The equivalent most frequently given by the subjects was regarded as the perceived prototypical equivalent.

My case study focuses on the use of *indeed* by French-speaking learners of English. On the basis of a simple corpus analysis, we can say that it presents all the signs of transfer. Table 2, based on data from the International Corpus of Learner English (ICLE, see Granger et al. 2009) and on the academic component of the British National Corpus (BNC_Acad), shows that *indeed* is significantly overused by French-speaking learners when compared to native speakers (836.78 vs 297.44 occurrences per million words, $\chi^2 = 131.29$, $p < .001$), and that its frequency in the French component of ICLE (ICLE-FR) is very different from its frequency in all the other components, none of which displays a significant overuse of the adverb.

In addition, a comparison of the results in Table 2 for native speakers (BNC_Acad) and French-speaking learners (ICLE-FR) with a corpus of native French (Corpus de Dissertations Françaises, CODIF, see Gilquin 2001) reveals that the intuitive equivalent of *indeed* in French, *en effet*, is much more frequent than its English counterpart: 1,209 occurrences per million words, as against 297 for *indeed* in native English (see Figure 1). In fact, its frequency is closer to that of *indeed* in ICLE-FR (837 occurrences per million words), which might point to a quantitative transfer (cf. Mougeon and Beniak’s (1991) concept of “covert transfer”). This, together with the idiosyncratic behaviour of French-speaking learners compared to the other populations of learners, suggests that transfer is a very plausible explanation for the overuse of *indeed* in French-speaking learners’ production.

Table 2. Frequency of *indeed* in learner and native English (absolute and relative frequency per million words).

L1	Absolute frequency	Relative frequency
French	115	836.78
Dutch	53	323.36
English	4787	297.44
Japanese	5	233.09
Swedish	11	227.18
Finnish	20	157.98
German	17	153.31
Chinese	4	145.71
Italian	7	144.98
Polish	15	88.27
Spanish	6	60.06
Turkish	6	57.14
Russian	9	53.56
Czech	4	30.43

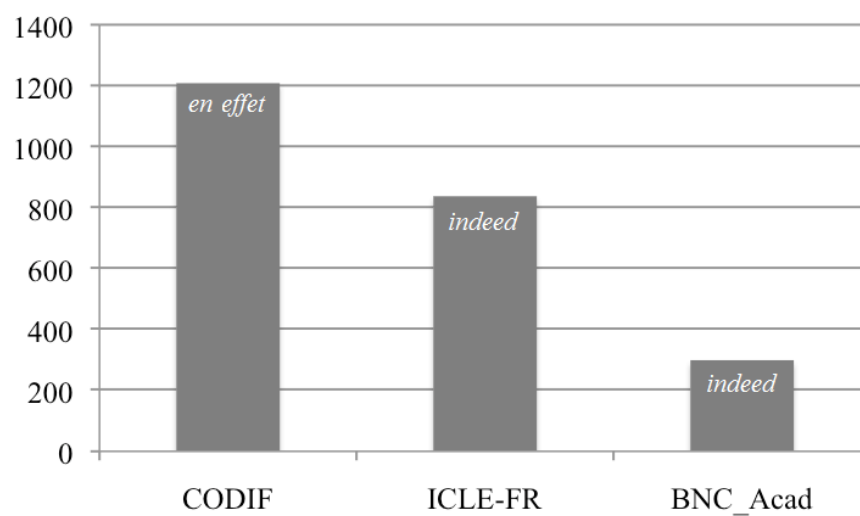


Figure 1. Relative frequency (per million words) of *indeed/en effet* in native French (CODIF), French learner English (ICLE-FR) and native English (BNC_Acad).

The problem, however, lies in the results of a corpus-based contrastive analysis which seem to refute this explanation. French-English parallel corpus data from the Poitiers-Louvain Échange de Corpus Informatisés (PLECI, see Gilquin 2001) uncover a very low degree of correspondence between *indeed* and *en effet*, with only four out of forty-eight occurrences of *indeed* translated as *en effet*. Thus, cases of correspondence like (1) are relatively rare. An equivalent such as *même*, in fact, is even more common than *en effet* in the corpus data, e.g. (2). This lack of correspondence between *indeed* and *en effet* in the bilingual corpus testifies to the great objective distance between the two expressions. This distance, according to Ellis (1994: 327), should act as a constraint on transfer, thus making transfer unlikely in this case. We are therefore faced with a problem, since the bilingual corpus predicts absence of transfer, whereas the learner corpus shows quite clear traces of transfer.

- (1) **Indeed**, it is in this period that poets step forth and speak with distinct, individual voices.
‘C’est à ce moment-là, **en effet**, que les poètes entrent en scène et s’expriment chacun d’une voix distincte, singulière.’ (PLECI-ng003)
- (2) **Indeed**, a cable under Walker’s signature is said to have been sent to Washington.
‘Un câble signé Walker serait **même** parvenu à Washington.’ (PLECI-mod01)

This apparent contradiction can be resolved by considering the subjective correspondence between *indeed* and *en effet*, rather than the objective correspondence transpiring from the translation corpus data. In an attempt to establish subjective correspondence, and more precisely the perceived prototypical equivalent of *indeed*, twenty-three French-speaking learners of English, with profiles similar to those represented in ICLE-FR, were asked to give the first equivalent of *indeed* that came to their minds. The answers clearly show that *en effet* is the most prototypical equivalent of *indeed*, since it was chosen by twenty of the informants. Two learners translated it by *en fait* (‘in fact’), and one by the rather formal adverb *certes* (‘admittedly’), each of which occurs twice in the parallel corpus data. This perceived closeness between *indeed* and *en effet* explains why there is no constraint on transfer, and why, therefore, transfer is possible, although the two expressions are, objectively (i.e. in the corpus data), quite different.

This ‘prototypical-psychotypological’ approach would be the first step of the explanatory account of transfer. After explaining why transfer takes

place, one would have to explain why learners tend to associate a word in the L2 with a translation that hardly ever corresponds to it in reality. In the case of *indeed*, I suspect that this may be teaching-induced. Instructed learners are still very often given lists of words in the target vocabulary with their translations in the native language (often limited to one translation per word), and typically, the translation of *indeed* in such lists would be *en effet*. Teaching-induced effects may be combined with conceptual factors, especially in the case of content words: the learner transfers the conceptual representation of the L1 word onto the L2 equivalent, without realizing that the L2 word may have a different conceptual structure; the L2 expression is thus encoded according to the conceptual system of the L1. A good example of conceptual transfer can be found in Jarvis and Pavlenko (2008: 124), who explain that, although the word *cup* is the equivalent of *chashka* in Russian, the two words differ in terms of the contents of the conceptual category. While in English a paper cup is considered a (peripheral) member of the conceptual category of cups, this is not the case in Russian, where the word *stakany* ‘glasses’ (or rather, a derived form of it, *stakanchiki*, meaning ‘little glasses’) is used to refer to a paper cup. An English learner of Russian using the term *chashka* to refer to this object would thus be guilty of conceptual transfer (see also Danesi 2008). Such conceptual problems could be investigated by means of techniques like word association, as advocated by Verspoor (2008), who uses bilingual word associations to demonstrate that Vietnamese, Dutch, and English speakers may have different conceptualizations when it comes to an apparently simple word like *career*.

To summarize this first case study, we have seen that, in the investigation of transfer, one can benefit from the combined use of learner corpora, which reflect learners’ performance, and elicitation techniques, which give more direct access to their competence. More particularly, it has been argued that the comparison between mother tongue and target language should rely on elicitation tests aimed at determining the prototypical equivalents found in the learner’s mental lexicon. The case study of the use of *indeed* by French-speaking learners has shown that such a cognitively-oriented model can explain cases of transfer which could not be accounted for by means of a model exclusively relying on corpora.

3.2. Innovative constructions in second language varieties

The second case study is a Construction Grammar approach to innovation in institutionalized second-language varieties of English (ESL). Construction Grammar holds that grammar is an inventory of constructions, i.e. form-function pairings, which have their own meanings. In the by now classic example *He sneezed the napkin off the table*, it is the construction in which the word occurs which gives *sneeze* a caused motion reading (Goldberg 1995: 9). In line with its usage-based view, Construction Grammar also holds that repeated exposure to a construction leads to its entrenchment in the cognitive system (cf. Bybee 2008): the more instances of a particular construction one gets exposed to, the more likely one is to form an abstract representation of the construction. For instance, after hearing or reading sentences such as *Mary pushed the trolley to the car*, *She threw the ball onto the roof*, *He took the dog into the house* or *Joe moved the saucepan onto the table*, a person may form a representation of the caused motion construction, consisting of a subject, a verb, an object, and an oblique argument, and expressing the fact that the causer argument directly causes the theme argument to move along a path designated by the directional phrase. This construction, in turn, will enable the person to create sentences similar to the above.

In what follows, I will focus on the case of *discuss about*, a form which is unacceptable according to the rules of standard English and should normally be replaced by the simple transitive verb *discuss something* (see, e.g., Turton and Heaton 1996: 101). Yet, the form *discuss about* is regularly found in non-native varieties of English, especially in institutionalized second-language varieties of English. Thus, Mukherjee (2007: 175) notes about Indian English that an “interesting phenomenon at the lexis-grammar interface is the formation of new prepositional verbs such as *approach to*, *comprise of*, ***discuss about***, *order for*, and *visit to*” [emphasis added]. Nesselhauf (2009), using data from the International Corpus of English (ICE), found fourteen occurrences of *discuss about* in the Indian component of the corpus, nine in the Singaporean component, and seven in the Kenyan component. She states that the form is also reported for Nigerian and Zambian English. My own investigations brought to light eighteen occurrences of *discuss about* in ICE Hong Kong, eight in ICE Philippines, and seven in ICE Tanzania, e.g. (3). What is interesting is that, although this form is perhaps not extremely frequent, it is shared by several institutionalized varieties of English which are unlikely to have influenced

each other or to have been influenced by the same language such as the speakers' L1. One can therefore expect this feature to be linked to general cognitive processes, rather than being due to the influence of some other language (including a substrate language).

- (3) *That was the year when Margaret Thatcher representing Britain went up to China to **discuss about** the future of Hong Kong with the Chinese officials.* (ICE-HK-S2A-031)

The processes underlying this innovation can be explained if we accept the assumption that non-native speakers, like native speakers, may have mental representations of certain constructions (cf. Section 2.2) and if we use the framework of Construction Grammar and its usage-based approach, combined with the tools of corpus linguistics (see Hartford 1989 for an account which is somewhat similar in spirit, but not grounded in the theory of Construction Grammar). First, it should be noticed that, when it comes to constructions with verbs of speaking, one is more likely to have entrenched the constructions related to verbs like *talk* or *speak* than the constructions related to *discuss*. This is because, as appears from Table 3, which is based on data from the British National Corpus, the verb *talk* (and, to a lesser extent, *speak*) is much more frequent than the verb *discuss*, especially in speech. This means that one is more likely to transfer the patterns of *talk* to the verb *discuss* than the other way round.

Table 3. Relative frequency (per million words) of the verbs *talk*, *speak*, and *discuss* in the whole BNC and in the conversational component of the BNC.

Verb	BNC (all)	BNC (conversational)
<i>Talk</i>	301.32	682.35
<i>Speak</i>	254.82	220.40
<i>Discuss</i>	151.23	16.40

Among the different constructions associated with the verb *talk*, it is the [V *about* NP] construction that is most likely to influence the use of *discuss*. Again, we can turn to corpus data to explain why this is so. Figure 2 represents part of a Word Sketch, which summarizes the different constructions in which a target word commonly occurs and which shows the verbs, adjectives, nouns, etc. recurring in a certain grammatical slot of the construction (see Kilgarriff and Tugwell 2002 and

www.sketchengine.co.uk). The Word Sketch is based on the BNC and displays the most frequent patterns that the verb *talk* occurs in. It appears that the [V *about* NP] construction (pp_about-p) is the most frequent one, with a total of 5,074 occurrences (and an overall ‘salience score’ of 216.8).²

talk British National Corpus freq = 29332									
and/or 913 0.5		unary rels		pp_about-p 5074 216.8		pp_to-p		3462 16.7	
laugh	69 8.5	prep_wh	334 69.7	sex	36 6.16	stranger	17 6.48	part_over-a_obj	41 13.4
joke	9 7.57	prep_ing	618 32.8	thing	148 5.52	mum	30 6.16	time	8 0.27
talk	88 7.14	prep_Sing	223 29.9	weather	18 5.49	daddy	11 6.09	part_trans	345 4.2
listen	24 6.59	np_adv	212 9.4	childhood	9 5.0	doctor	38 5.83	through	45 7.35
relax	9 6.46			poetry	9 4.98	mate	11 5.66	over	137 7.13
pray	7 6.32			past	14 4.92	guy	12 5.54	round	15 5.29
drink	17 6.23			feeling	23 4.84	people	272 5.51	down	56 4.64
walk	36 6.12			experience	38 4.79	reporter	9 5.47	about	8 4.08
sing	13 5.95			boyfriend	6 4.76	journalist	11 5.33	out	32 2.89
sit	40 5.67			percent	6 4.64	outsider	6 5.3	up	35 2.8
smile	9 5.25			future	20 4.63	press	23 5.25	back	7 1.72
subject 2777 3.4		pp_with-p 373 2.9		part_intrans 188 1.3		object 1710 1.1		pp_in-p 389 1.1	
Clare	10 5.96	boss	6 4.64	through	18 6.05	nonsense	68 9.4	riddle	10 8.86
speaker	20 5.79	mouth	10 4.11	back	40 4.24	rubbish	25 7.63	whisper	12 8.13
Emma	7 5.71	friend	8 2.16	over	18 4.21	gibberish	10 7.53	sleep	9 5.68

Figure 2. (Truncated) Word Sketch of the verb *talk* in the BNC: frequencies (underlined) and salience scores.

Not only is *talk* more frequently associated with the *about* construction, but it turns out that the *about* construction is often associated with verbs expressing the conveying of information on a certain subject. Consider Figure 3, from the Erlangen Valency Patternbank,³ a database based on Herbst et al. (2004) that provides a list of all the patterns of a number of verbs, adjectives, and nouns. Figure 3 shows all the verbs from the database that occur with the [V *about* NP] construction in a large corpus (the Bank of English). Besides *talk*, we find verbs such as *speak*, *tell*, *chat*, or *write*, all of which express the conveying of information on the subject of something.

Active patterns:	
NP + VHC_{act} + about_NP	
Passive patterns:	
NP + VHC_{pass} + about (+ by_phrase)	with verbs marked in grey
advise (A recommend) - argue (A dispute) - argue (B discuss) - ask (A inquire) - care (A consider important) - chat - complain - cry (A ... tears) - deceive - decide - dream - enquire - fight - forget - forget (special use 2) - go (idiomatic phrasal verb) - go (θ) - hang (idiomatic phrasal verb) - hear (B ... news) - hesitate - inquire - joke - joke (α) - knock (idiomatic phrasal verb) - know (A INFORMATION) - know (special use 1) - laugh - lay (C attack) - learn (A acquire a skill / knowledge) - learn (B discover) - lie [lied lied] - mention - mind (B be bothered) - mind (D never ..) - phone - pray - pretend - protest - read - realize (A become aware) - realize (A become aware) - reason - remember (A PERSON/EXPERIENCE) - remember (B TASK) - ring (B telephone) - see (E organize) - see (special use 9) - set (D start) - set (E attack) - shout (α) - sing - smile - speak (B FORMAL ADDRESS) - speak (D TOPIC) - talk (B TOPIC) - talk (D SPEECH) - talk (special use 3) - teach - tell (A INFORMATION) - think (A THOUGHT) - think (B consider) - warn - whisper - wonder - wonder (α) - worry - write	

Figure 3. The [V *about* NP] construction in the Erlangen Valency Patternbank.

Given this, it is not surprising that non-native speakers of English should be influenced by the construction [TALK *about* NP] when trying to use the verb *discuss*. Instead of using the standard construction [V NP] (*discuss something*), which is a construction more prototypically used to express causation (e.g. *kill somebody* or *break something*, cf. Kemmer and Verhagen 1994: 126), they use a construction that is typically associated with the conveying of information, yielding the non-standard form *discuss about*

something. In fact, the ESL speakers in this case may be said to select a constructional template that corresponds better to the meaning of the verb *discuss*, thus bringing syntax and semantics more in line with each other. Figure 4 illustrates this process of ‘remapping’. Other examples of innovative constructions, taken from Nesselhauf (2009) and Gilquin (2009) and which could be explained in similar ways, include *comprise of* (probably built by analogy with *consist of*), *demand for* (which uses the construction of *ask for*), *enter into a place* (imitating the pattern of *go into* or *come into*), or *complete up* (where the particle *up* is telic, presenting an action or event as being complete, as in *eat up* or *dry up*).

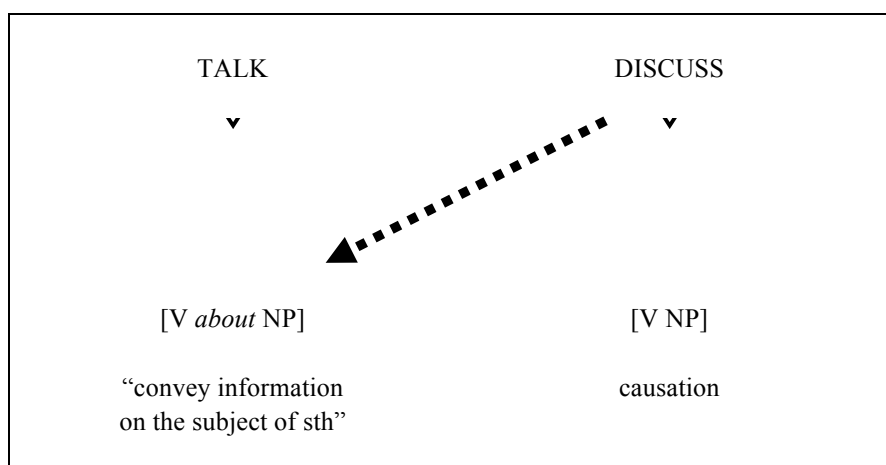


Figure 4. Remapping of the verb *discuss* on the model of the *talk* construction.

One way this approach could be extended is through the concept of blending, as suggested by Waara (2004). Blending, following Fauconnier (1997), “is the combination of two inputs in mental space that yield a third mental space that is called the ‘blend’” (Waara 2004: 52). In our case, the two mental spaces could be two constructions, the combination of which yields a ‘blended construction’. For example in (4), a sentence produced by a Tswana learner (see Gilquin and Granger 2011),⁴ *take into seriousness* can be interpreted as a blend of *take into consideration*, the first input, and *take seriously*, the second input (cf. Figure 5).

- (4) *Africa is by and by moving towards its last grave, this is due to the following unnoticed [unnoticed] facts, yet not **taken into seriousness** [seriousness].* (ICLE-TS-NOUN-0286.1)

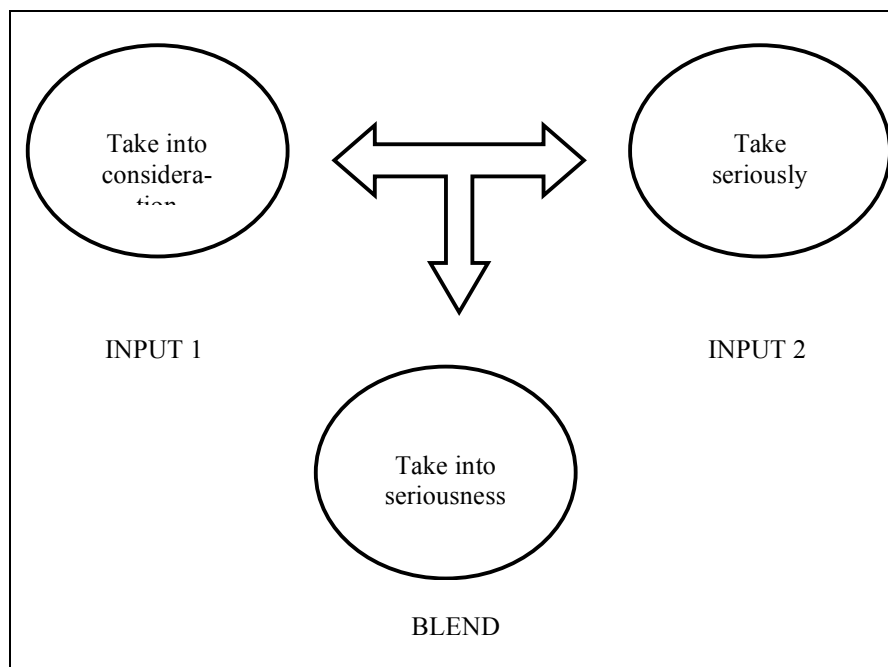


Figure 5. Conceptual blending of *take into seriousness*.

In summary, this second case study has shown that the use of Construction Grammar (and/or conceptual blending theory) may explain some of the innovations found in institutionalized second-language varieties of English, and at the same time account for their presence in several non-related varieties. In particular, we have seen that the cognitive approach gives valuable insights into the (probable) processes leading to the production of non-standard constructions like *discuss about* or *take into seriousness*. More generally, as was the case with the first study (Section 3.1), the explanatory efficacy of the cognitive framework appears to be a nice complement to the descriptive adequacy offered by corpus linguistics.

4. Some promising avenues for research

Before turning to the conclusion of this chapter, I would like to briefly discuss some avenues for research that seem particularly promising from an applied cognitive linguistic perspective. The first one would be to adopt a longitudinal approach to the cognitive study of second/foreign language varieties, making it possible to see how a second or foreign language develops from a cognitive point of view. This evolution could then be compared to that of L1 acquisition. The main obstacle to implementing this type of evolutionary approach is a lack of appropriate data. As Ellis (2003: 73) observes with respect to constructions, “[t]here are lamentably few longitudinal acquisition data for SLA that are of sufficient detail to allow the charting of construction growth.” The LONGDALE (Longitudinal Database of Learner English) project, when completed, should provide the kind of data that are necessary for such studies. This project, initiated in 2008 by the Centre for English Corpus Linguistics at the University of Louvain, Belgium, aims at building a large longitudinal database of learner English with data produced by learners from a wide range of mother tongue backgrounds, followed over a period of at least three years (from year 1 to year 3 of their studies at university).⁵ Ideally, this time window would need to be expanded further, so as to cover the whole cognitive development of L2 learners, from beginner to advanced level.

Next, one should strive for a truly usage-based model in L2 acquisition. Cognitive linguistics asserts that language is learned from usage (cf. Ellis and Robinson 2008: 5). In this regard, it is of crucial importance to know precisely what language learners are exposed to. It will always be an approximation, of course, as experience of a language is necessarily personal, but using a general corpus of native English to approximate EFL learners’ experience with language (cf. Lowie and Verspoor 2004) may not be close enough (see also Gries 2008: 416 on this issue). A better approximation could be found in a corpus such as TeMa (see Meunier and Gouverneur 2009), which contains the pedagogical material of textbooks selected among bestsellers on the English language teaching market. Better still, one should expand the context by also taking into account classroom conversation for instance, including not only the teacher’s talk, but also what the other students say. Ultimately, it is the whole of a person’s interactions that one should attempt to record, as suggested by Adolphs, Knight, and Carter (2009) for native English, creating a database that reflects the

exposure to TV programs in the target language, radio broadcasts, emails, websites, etc.

Finally, it would be interesting to broaden the paradigm by considering different types of language development together and comparing them from a cognitive linguistic perspective. One of Ellis's (2003) above-mentioned quotations suggests that the processes of L1 and L2 learning may be (at least partly) similar. Parallels have also been drawn between ESL and EFL (Nesselhauf 2009), as well as between ontogeny and phylogeny (Osawa 2003), i.e. between L1 acquisition (language learning) and historical development (language change). It might be interesting to establish whether there are any cognitive processes that are common to any type of language evolution, including L1 acquisition, L2 acquisition, pidginization, and diachronic development. We might thus be able to propose a unified developmental model, taking account of the specificity of each type of development.

5. Conclusion

This chapter has examined the role of the cognitive approach in applied linguistics, and more precisely in the study of second and foreign language varieties. The first conclusion to be drawn is that applied cognitive linguistics is in need of further research, especially as far as the processes underlying the acquisition of a second or foreign language are concerned. Ideally, such research should rely on a sound empirical basis, which could involve corpus data and elicitation data, as I have illustrated here, but also more sophisticated experimental techniques such as reaction time measurements or eye tracking.

Secondly, the two case studies have underlined the relevance of combining cognitive linguistics with corpus linguistics and the complementarity of the two frameworks: corpora offer privileged access to the final state of the production, whilst the cognitive approach gives insights into the actual acquisition processes (see also Ellis 2003: 64); corpora reflect performance, whilst cognitive linguistics is closer to competence; and corpus linguistics provides descriptive adequacy, whilst cognitive linguistics allows for explanatory efficacy. This last point proves the relevance of cognitive linguistics for second language acquisition (SLA), over and above foreign language teaching (FLT), where applied cognitive linguistics has been most prevalent up to now.

Of course, insights into language acquisition processes such as those revealed by cognitive linguistics are only a first step, which can lead to practical applications. The better one understands why learners get something wrong, the easier it is to help them solve the problem, so that these insights can themselves result in improvements in second/foreign language teaching, in the form of “well-informed language pedagogy”, as Odlin (2008: 333) calls it. The explanatory power of applied cognitive linguistics, in other words, allows for anticipation, diagnosis, and remediation (Verspoor 2008: 263), all of which are important aspects of the learning and teaching of a language. This alone should encourage both SLA and FLT specialists to engage more actively in the field of applied cognitive linguistics.

Notes

1. The term ESL is also used to refer to the situation of a learner of English living and learning English in an English-speaking country (e.g. in Great Britain or in the USA). Here, I restrict the term to countries where English is not a native language, but an official (or semi-official) one. In Kachru’s (1985) model of the three concentric circles, this corresponds to the outer circle, whereas EFL corresponds to the expanding circle.
2. Salience in the Sketch Engine is “a statistical measure of how salient a word or lemma is in a given context, given the frequency of the word and the context. This is measured with logDice” (Sketch Engine help file).
3. The Erlangen Valency Patternbank is available at <http://www.patternbank.uni-erlangen.de/>.
4. Note that, although the sentence is taken from the International Corpus of Learner English, an essentially EFL corpus, the situation of the Tswana learners is close to an ESL one, because they have access to English-speaking media and are instructed through the medium of English from the fifth grade in primary school.
5. See <http://www.uclouvain.be/en-cecl-longdale.html> for more information about the LONGDALE project.

References

- Achard, Michel, and Susanne Niemeier
 2004 Introduction: Cognitive linguistics, language acquisition, and pedagogy. In *Cognitive Linguistics, Second Language Acquisition, and Foreign Language Teaching*, Michel Achard, and Susanne Niemeier (eds.), 1–11. Berlin/New York: Mouton de Gruyter.

- Adolphs, Svenja, Dawn Knight, and Ronald Carter
 2009 Redefining context in communication: A multi-modal perspective. Paper presented at the 30th ICAME conference, Lancaster.
- Bencini, Giulia M.L., and Adele E. Goldberg
 2000 The contribution of argument structure constructions to sentence meaning. *Journal of Memory and Language* 43 (4): 640–651.
- Boers, Frank
 2004 Expanding learners' vocabulary through metaphor awareness: What expansion, what learners, what vocabulary? In *Cognitive Linguistics, Second Language Acquisition, and Foreign Language Teaching*, Michel Achard, and Susanne Niemeier (eds.), 211–232. Berlin/New York: Mouton de Gruyter.
- Boers, Frank, and Seth Lindstromberg
 2006 Cognitive linguistic applications in second or foreign language instruction: Rationale, proposals, and evaluation. In *Cognitive Linguistics: Current Applications and Future Perspective*, Gitte Kristiansen, Michel Achard, René Dirven, and Francisco J. Ruiz de Mendoza Ibáñez (eds.), 305–355. Berlin/New York: Mouton de Gruyter.
- Boers, Frank, and Seth Lindstromberg (eds.)
 2008 *Cognitive Linguistic Approaches to Teaching Vocabulary and Phraseology*. Berlin/New York: Mouton de Gruyter.
- Bybee, Joan
 2008 Usage-based grammar and second language acquisition. In *Handbook of Cognitive Linguistics and Second Language Acquisition*, Peter Robinson, and Nick C. Ellis (eds.), 216–236. New York/London: Routledge.
- Condon, Nora
 2008 *Investigating a Cognitive Linguistic Approach to the Learning of English Phrasal Verbs*. Ph.D. diss., Université catholique de Louvain.
- Csábi, Szilvia
 2004 A cognitive linguistic view of polysemy in English and its implications for teaching. In *Cognitive Linguistics, Second Language Acquisition, and Foreign Language Teaching*, Michel Achard, and Susanne Niemeier (eds.), 233–256. Berlin/New York: Mouton de Gruyter.
- Danesi, Marcel
 2008 Conceptual errors in second-language learning. In *Cognitive Approaches to Pedagogical Grammar: A Volume in Honour of René Dirven*, Sabine De Knop, and Teun De Rycker (eds.), 231–256. Berlin/New York: Mouton de Gruyter.
- De Knop, Sabine, and Teun De Rycker (eds.)
 2008 *Cognitive Approaches to Pedagogical Grammar: A Volume in Honour of René Dirven*. Berlin/New York: Mouton de Gruyter.

- De Rycker, Antoon, and Sabine De Knop
2009 Integrating cognitive linguistics and foreign language teaching: Historical background and new developments. *Journal of Modern Languages* 19 (1): 29–46.
- Ellis, Nick C.
2003 Constructions, chunking, and connectionism: The emergence of second language structure. In *The Handbook of Second Language Acquisition*, Catherine J. Doughty, and Michael H. Long (eds.), 63–103. Oxford: Blackwell Publishing.
- Ellis, Nick C., and Peter Robinson
2008 An introduction to cognitive linguistics, second language acquisition, and language instruction. In *Handbook of Cognitive Linguistics and Second Language Acquisition*, Peter Robinson, and Nick C. Ellis (eds.), 3–24. New York/London: Routledge.
- Ellis, Rod
1994 *The Study of Second Language Acquisition*. Oxford: Oxford University Press.
- Evans, Vyvyan, and Andrea Tyler
2005 Applying cognitive linguistics to pedagogical grammar: The English prepositions of verticality. *Revista Brasileira de Linguística Aplicada* [Brazilian Journal of Applied Linguistics] 5 (2): 11–42.
- Fauconnier, Gilles
1997 *Mappings in Thought and Language*. Cambridge: Cambridge University Press.
- Geeraerts, Dirk, and Hubert Cuyckens (eds.)
2007 *The Oxford Handbook of Cognitive Linguistics*. Oxford: Oxford University Press.
- Gibbs, Raymond W. Jr., and Marcus Perlman
2006 The contested impact of cognitive linguistic research on the psycholinguistics of metaphor understanding. In *Cognitive Linguistics: Current Applications and Future Perspectives*, Gitte Kristiansen, Michel Achard, René Dirven, and Francisco J. Ruiz de Mendoza Ibáñez (eds.), 211–228. Berlin/New York: Mouton de Gruyter.
- Gilquin, Gaëtanelle
2001 The Integrated Contrastive Model: Spicing up your data. *Languages in Contrast* 3 (1): 95–123.
2008a Combining contrastive and interlanguage analysis to apprehend transfer: Detection, explanation, evaluation. In *Linking up Contrastive and Learner Corpus Research*, Gaëtanelle Gilquin, Szilvia Papp, and Maria Belén Díez-Bedmar (eds.), 3–33. Amsterdam/Atlanta: Rodopi.
2008b What you think ain't what you get: Highly polysemous verbs in mind and language. In *Du fait grammatical au fait cognitif. From Gram to Mind: Grammar as Cognition*, Vol. 2, Jean-Rémi Lapaire,

- Guillaume Desagulier, and Jean-Baptiste Guignard (eds.), 235–255. Pessac: Presses Universitaires de Bordeaux.
 - 2009 The (non-)use of phrasal verbs in L2 varieties of English. Paper presented at the 30th ICAME conference, Lancaster.
- Gilquin, Gaëtanelle, and Sylviane Granger
- 2011 From EFL to ESL: Evidence from the *International Corpus of Learner English*. In *Exploring Second-Language Varieties of English and Learner Englishes: Bridging a Paradigm Gap*, Joybrato Mukherjee, and Marianne Hundt (eds.), 55–78. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Goldberg, Adele E.
- 1995 *Constructions: A Construction Grammar Approach to Argument Structure*. Chicago: University of Chicago Press.
 - 2006 *Constructions at Work: The Nature of Generalization in Language*. Oxford: Oxford University Press.
- Goldberg, Adele E., and Devin Casenhiser
- 2008 Construction learning and second language acquisition. In *Handbook of Cognitive Linguistics and Second Language Acquisition*, Peter Robinson, and Nick C. Ellis (eds.), 197–215. New York/London: Routledge.
- Granger, Sylviane
- 1996 From CA to CIA and back: An integrated approach to computerized bilingual and learner corpora. In *Languages in Contrast: Papers from a Symposium on Text-based Cross-linguistic Studies*, Karin Aijmer, Bengt Altenberg, and Mats Johansson (eds.), 37–51. Lund: Lund University Press.
- Granger, Sylviane, Estelle Dagneaux, Fanny Meunier, and Magali Paquot
- 2009 *International Corpus of Learner English: Handbook and CD-ROM, Version 2*. Presses universitaires de Louvain: Louvain-la-Neuve.
- Gries, Stefan Th.
- 2008 Corpus-based methods in analyses of second language acquisition data. In *Handbook of Cognitive Linguistics and Second Language Acquisition*, Peter Robinson, and Nick C. Ellis (eds.), 406–431. New York/London: Routledge.
- Gries, Stefan Th., and Stefanie Wulff
- 2005 Do foreign language learners also have constructions? Evidence from priming, sorting, and corpora. *Annual Review of Cognitive Linguistics* 3 (1): 182–200.
- Hartford, Beverly S.
- 1989 Prototype effects in non-native English: Object-coding in verbs of saying. *World Englishes* 8 (2): 97–117.
- Herbst, Thomas, David Heath, Ian Roe, and Dieter Götz
- 2004 *Valency Dictionary of English*. Berlin/New York: Mouton de Gruyter.
- Hopper, Paul J., and Sandra A. Thompson

- 1980 Transitivity in grammar and discourse. *Language* 56 (1): 251–299.
- Jarvis, Scott, and Aneta Pavlenko
2008 *Crosslinguistic Influence in Language and Cognition*. New York/London: Routledge.
- Johnson, Keith, and Helen Johnson (eds.)
1998 *Encyclopedic Dictionary of Applied Linguistics: A Handbook for Language Teaching*. Oxford: Basil Blackwell.
- Kachru, Braj B.
1985 Standards, codification and sociolinguistic realism: The English language in the outer circle. In *English in the World: Teaching and Learning the Language and Literatures*, Randolph Quirk, and Henry G. Widdowson (eds.), 11–30. Cambridge: Cambridge University Press.
- Kellerman, Eric
1983 Now you see it, now you don't. In *Language Transfer in Language Learning*, Susan Gass, and Larry Selinker (eds.), 112–134. Rowley, MA: Newbury House.
- Kemmer, Suzanne, and Arie Verhagen
1994 The grammar of causatives and the conceptual structure of events. *Cognitive Linguistics* 5 (2): 115–156.
- Kilgariff, Adam, and David Tugwell
2002 Sketching words. In *Lexicography and Natural Language Processing: A Festschrift in Honour of B.T.S. Atkins*, Marie-Hélène Corréard (ed.), 125–137. Euralex. Available online at <http://www.kilgariff.co.uk/Publications/2002-KilgTugwell-AtkinsFest.pdf>.
- Kövecses, Zoltán
2001 A cognitive linguistic view of learning idioms in an FLT context. In *Applied Cognitive Linguistics II: Language Pedagogy*, Martin Pütz, Susanne Niemeier, and René Dirven (eds.), 87–115. Berlin/New York: Mouton de Gruyter.
- Lakoff, George
1987 *Women, Fire, and Dangerous Things: What Categories Reveal about the Mind*. Chicago: University of Chicago Press.
- Langacker, Ronald W.
2002 *Concept, Image, and Symbol: The Cognitive Basis of Grammar*. 2nd ed. Berlin/New York: Mouton de Gruyter.
- 2008 The relevance of Cognitive Grammar for language pedagogy. In *Cognitive Approaches to Pedagogical Grammar: A Volume in Honour of René Dirven*, Sabine De Knop, and Teun De Rycker (eds.), 7–35. Berlin/New York: Mouton de Gruyter.
- Liang, Junying
2002 Sentence comprehension by Chinese Learners of English: Verb-centered or construction-based. MA thesis, Guangdong University of Foreign Studies.

- Littlemore, Jeannette
 2009 *Applying Cognitive Linguistics to Second Language Learning and Teaching*. Basingstoke: Palgrave Macmillan.
- Lowie, Wander, and Marjolijn Verspoor
 2004 Input versus transfer? The role of frequency and similarity in the acquisition of L2 prepositions. In *Cognitive Linguistics, Second Language Acquisition, and Foreign Language Teaching*, Michel Achard, and Susanne Niemeier (eds.), 77–94. Berlin/New York: Mouton de Gruyter.
- Meunier, Fanny, and Céline Gouverneur
 2009 New types of corpora for new educational challenges: Collecting, annotating and exploiting a corpus of textbook material. In *Corpora and Language Teaching*, Karin Aijmer (ed.), 179–201. John Benjamins Publishing Company: Amsterdam/Philadelphia.
- Mougeon, Raymond, and Edouard Beniak
 1991 *Linguistic Consequences of Language Contact and Restriction: The Case of French in Ontario, Canada*. Oxford: Oxford University Press.
- Mukherjee, Joybrato
 2007 Steady states in the evolution of New Englishes: Present-day Indian English as an equilibrium. *Journal of English Linguistics* 35 (2): 157–187.
- Nesselhauf, Nadja
 2009 Co-selection phenomena across New Englishes: Parallels (and differences) to foreign learner varieties. *English World-Wide* 30 (1): 1–25.
- Odlin, Terence
 2008 Conceptual transfer and meaning extensions. In *Handbook of Cognitive Linguistics and Second Language Acquisition*, Peter Robinson, and Nick C. Ellis (eds.), 306–340. New York/London: Routledge.
- Osawa, Fuyo
 2003 Syntactic parallels between ontogeny and phylogeny. *Lingua* 113 (1): 3–47.
- Pütz, Martin
 2007 Cognitive linguistics and applied linguistics. In *The Oxford Handbook of Cognitive Linguistics*, Dirk Geeraerts, and Hubert Cuyckens (eds.), 1139–1159. Oxford: Oxford University Press.
- Pütz, Martin, René Dirven, and Susanne Niemeier
 2001 Introduction. In *Applied Cognitive Linguistics I: Theory and Language Acquisition*, Martin Pütz, Susanne Niemeier, and René Dirven (eds.), xiii–xxiv. Berlin/New York: Mouton de Gruyter.
- Pütz, Martin, Susanne Niemeier, and René Dirven (eds.)
 2001a *Applied Cognitive Linguistics I: Theory and Language Acquisition*. Berlin/New York: Mouton de Gruyter.

- 2001b *Applied Cognitive Linguistics II: Language Pedagogy*. Berlin/New York: Mouton de Gruyter.
- Pütz, Martin, and Laura Sicola (eds.)
 - 2010 *Cognitive Processing in Second Language Acquisition: Inside the Learner's Mind*. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Robinson, Peter, and Nick C. Ellis (eds.)
 - 2008 *Handbook of Cognitive Linguistics and Second Language Acquisition*. New York/London: Routledge.
- Rosch, Eleanor
 - 1975 Cognitive representations of semantic categories. *Journal of Experimental Psychology: General* 104 (3): 192–233.
- Rudzka-Ostyn, Brygida
 - 2003 *Word Power: Phrasal Verbs and Compounds. A Cognitive Approach*. Berlin/New York: Mouton de Gruyter.
- Sanz, Cristina
 - 2005 Adult SLA: The interaction between external and internal factors. In *Mind and Context in Adult Second Language Acquisition. Methods, Theory, and Practice*, Cristina Sanz (ed.), 3–20. Washington, DC: Georgetown University Press.
- Singleton, David
 - 1987 Mother and other tongue influence on learner French: A case study. *Studies in Second Language Acquisition* 9 (3): 327–345.
- Taylor, John R.
 - 2003 *Linguistic Categorization*. 3rd ed. Oxford: Oxford University Press.
 - 2008 Prototypes in cognitive linguistics. In *Handbook of Cognitive Linguistics and Second Language Acquisition*, Peter Robinson, and Nick C. Ellis (eds.), 39–65. New York/London: Routledge.
- Tomasello, Michael
 - 2003 *Constructing a Language: A Usage-Based Theory of Language Acquisition*. Cambridge, MA: Harvard University Press.
- Turton, Nigel D., and Heaton, J.B.
 - 1996 *Longman Dictionary of Common Errors*. 2nd ed. London: Longman.
- Tyler, Andrea, and Vyvyan Evans
 - 2001 The relation between experience, conceptual structure and meaning: Non-temporal uses of tense and language teaching. In *Applied Cognitive Linguistics I: Theory and Language Acquisition*, Martin Pütz, Susanne Niemeier, and René Dirven (eds.), 63–105. Berlin/New York: Mouton de Gruyter.
- Ungerer, Friedrich, and Hans-Jörg Schmid
 - 2006 *An Introduction to Cognitive Linguistics*. 2nd ed. Harlow: Pearson Education.
- Valenzuela Manzanares, Javier, and Ana María Rojo López
 - 2008 What can language learners tell us about constructions? In *Cognitive Approaches to Pedagogical Grammar: A Volume in Honour of René*

- Dirven*, Sabine De Knop, and Teun De Rycker (eds.), 197–230.
Berlin/New York: Mouton de Gruyter.
- Verspoor, Marjolijn
2008 What bilingual word associations can tell us. In *Cognitive Linguistic Approaches to Teaching Vocabulary and Phraseology*, Frank Boers, and Seth Lindstromberg (eds.), 261–289. Berlin/New York: Mouton de Gruyter.
- Verspoor, Marjolijn, and Wander Lowie
2003 Making sense of polysemous words. *Language Learning* 53 (3): 547–586.
- Waara, Renee
2004 Construal, convention, and constructions in L2 speech. In *Cognitive Linguistics, Second Language Acquisition, and Foreign Language Teaching*, Michel Achard, and Susanne Niemeier (eds.), 51–75. Berlin/New York: Mouton de Gruyter.