Ana María Piquer-Píriz and Rafael Alejo-González (eds.)

Applying Cognitive Linguistics

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Applying Cognitive Linguistics
Figurative language in use, constructions and typology
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Applying Cognitive Linguistics

Figurative language in use, constructions and typology

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Applying Cognitive Linguistics

Identifying some current research foci (figurative language in use, constructions and typology)

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In recent years, Cognitive Linguistics (CL) has established itself not only as a solid theoretical approach but also as an important source from which different applications to other fields have emerged. In this introductory chapter, we explore some of the current, most relevant topics in applied CL-oriented studies grouped into three main strands: Analyses of figurative language (both metaphor and metonymy) in use, constructions and typology. An outline of the contents of the eight chapters included in this volume is provided, explaining their contributions to these research areas and highlighting their methodological rigour.

Keywords: Cognitive Linguistics, applications, figurative language, constructions, typology

1. Introduction[1]

In the last four decades, Cognitive Linguistics (henceforth, CL) has established itself as a solid discipline that has aroused a great interest, as shown by the large number of publications and conferences devoted to it each year (see Geeraerts & Cuyckens, 2007a, pp. 7–8, for an overview). A clear sign of the maturity of a theoretical approach is its ability to be applied to a varied number of contexts and this has, certainly, been the case of CL in recent years.

Under the title, *"Applied Cognitive Linguistics: New challenges"*, the main aim of the 9th International AELCO-SCOLA conference, held at the University of Extremadura in October 2014, was to serve as an international forum for

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discussion of the current, most important topics related to the application of the theoretical principles of CL to other fields. Starting from the basis of such an enriching research forum, this volume aims:

1. to identify some of the current, most relevant topics in applied CL-oriented studies and,
2. to present high-quality research papers that illustrate best practices in the research foci identified.

Three well-defined thematic strands emerged from the proposals accepted for presentation at the conference, which shows the current importance of these lines: (1) Analyses of figurative language (both metaphor and metonymy) in use; (2) Studies exploring how meaning is 'constructed' in language (L1 and L2 acquisition) and (3) Typological descriptions of language use.

In their overview of CL, Barcelona and Valenzuela (2011, pp. 23–29) identified construction grammar, polysemy, and metaphor, metonymy and blending as what they referred to as "main directions and current research tendencies in CL". As can be noted, their classification is close to our own.

This volume consists of eight chapters thematically grouped into the three strands that emerged from the papers presented at *AELCO/SCOLA IX*. In each section, applications to different fields are also illustrated: Intercultural communication, the psychology of emotions, second and first language acquisition, discourse analysis and translation studies.

The chapters in this volume also show how different methodologies (the use of linguistic corpora, psycholinguistic experiments or discourse analytic procedures) can shed some light on the basic premises of CL as well as providing insights into how CL can be applied in real world contexts. Furthermore, all the studies included in the volume are based on empirical data and there are some analyses of languages other than English (Japanese, Russian, Spanish, Danish, German and Polish), thus, overcoming the contentions that research based on the CL theoretical framework is often based on linguistic intuition and focused only on the English language.

2. From theoretical principles to practical applications

As is well-known, CL is not a homogeneous, uniform theoretical approach. For some comprehensive accounts of the main theoretical tenets of this linguistic model, see, for example, the introductory volumes by Croft and Cruse (2004), Dabrowska and Divjak (2015), Evans, Bergen, and Zinken (2007a), Evans and Green (2006), Geeraerts and Cuyckens (2007b), Littlemore and Taylor (2014)

or Ungerer and Schmid (1996)[2008]. There are also two introductions to CL written in Spanish[2]: Cuenca and Hilferty (1999) and Ibarretxe-Antuñano and Valenzuela (2012).

The varied foundational principles of CL "have led to a diverse range of complementary, overlapping (and sometimes competing) theories", as Evans, Bergen, and Zinken (2007b, p. 3) put it. Such rich variation is even more prominent if we look at the applications of the theoretical postulates of CL to different fields. Although a great deal of the attention has focused on applications to second/foreign language instruction and acquisition, applied CL-oriented studies can also be found in many other disciplines such as psychology, discourse studies, literature, philosophy, translation studies or artificial intelligence among others.

The importance of this line of research is reflected not only in the vast number of individual publications reporting applied CL studies but also in the fact that a specific book series, *Applications of Cognitive Linguistics (ACL)*, by one of the most prestigious publishing houses specialising in Linguistics, Mouton de Gruyter, has been devoted to it within the past 10 years launching thirty volumes between 2006 and 2015. The collective work (Kristiansen, Achard, Dirven, & Ruiz de Mendoza, 2006) that opened up this book series is one of the first accounts devoted specifically to methodological issues and research perspectives of the main fields of research that CL had covered to the date of its publication including anthropology, foreign language instruction, signed languages, multimodality, poetics, artificial intelligence and computational linguistics.

Some, although not all, of the best-known introductory volumes or state-of-the-art articles about CL also include sections on its applications: Schmid and Ungerer (2013), for instance, focus specifically on CL and language teaching. Evans and Green (2006) acknowledge the applications of CL to a wide range of areas including not only literature, language pedagogy and other social and cognitive sciences but also non-verbal communication explicitly mentioning gesture and signed language, two areas that have attracted a great deal of attention recently (see, for example, Cienki & Müller, 2008 for gesture or Wilcox, 2000 in relation to signed languages). Geeraerts and Cuyckens (2007b), Littlemore and Taylor (2014) and Dabrowska and Divjak (2015) also include sections dealing with applications of CL to the areas of cultural studies, discourse analysis, first and second language acquisition, lexicography, literary studies, philosophy, phonology, psychology usage-based construction grammar or variational linguistics.

2. Cognitive Linguistics has an important tradition in Spain. The Spanish Cognitive Linguistics Association (SCOLA/AELCO) was set up in 1998 and it aims to serve as a forum for all researchers working in Spain or in any of its languages also welcoming cognitive linguists from any other source or language interest (http://www.aelco.es).

Having acknowledged the influence of CL on other disciplines, it must be admitted that its applications to foreign language pedagogy have been the most numerous. A certainly ground-breaking, inspiring contribution to this field is Low's (1988) seminal article published in *Applied Linguistics* that was followed in the 1990s by many studies introducing CL-oriented teaching proposals (Boers & Demecheleer, 1998; Deignan, Gabrys, & Solska, 1997; Kövecses & Szabó, 1996; Lazar, 1996; Lindstromberg, 1996, 2010; MacLennan, 1994; Ponterotto, 1994 are among the best-known). A turning point in the early 2000s was the publication of the two collective volumes by Pütz, Niemeier, and Dirven (2001a, 2001b) that laid the way for a very fruitful tradition of either comprehensive accounts of how the main tenets of CL can be applied to second/foreign language instructions or edited volumes that combine sound theoretical accounts with some studies that report on practical applications (Achard & Niemeier, 2004; Boers & Lindstromberg, 2008; De Knop, Boers, & De Rycker, 2010; Holme, 2009; Littlemore, 2009; Littlemore & Juchem-Grundmann, 2010; Littlemore & Low, 2006; Robinson & Ellis, 2008). These theoretical accounts were accompanied by an ever growing literature analysing how the application of some of the findings from CL could have a positive influence on L2 acquisition and/or teaching (Alejo, 2010a; Boers, 2000, 2014; Boers, Piquer-Píriz, Stengers, & Eyckmans, 2009; Condon, 2008; Dirven, 2001; MacArthur & Littlemore, 2008; Piquer-Píriz, 2008 are just some examples). Boers (2011) reviews CL-inspired studies published between 1996 and 2010 that put to test the effectiveness of the model. However, very few attempts have been made to develop CL-oriented specific teaching materials (Boers & Lindstromberg, 2009; Lazar, 2003; Rudzka-Ostyn, 2003 are some exceptions) and the main findings from this line of research do not seem to have reached mainstream textbooks and practice (Boers, 2014). It is beyond the scope of this introduction to go into further detail about the contributions of CL to foreign language instruction. Highly recommendable articles on this issue are Bielak (2011), Boers, De Rycker, and De Knop (2010) or Boers and Lindstromberg (2006).

In our view, CL has had such a great impact on so numerous and varied disciplines due to its understanding of language. For cognitive linguists:

1. Language cannot be separated from other basic human cognitive abilities.
2. Language is symbolic in nature but grounded in our physical and social experiences.
3. Meaning is central in language.

CL has identified the inextricable interrelation among cognition, language and communication and has shown how despite the great complexity of the linguistic phenomenon (in which cognition, experience, embodiment, human interaction, society, culture and history are intertwined), patterns emerged (Ellis & Robinson, 2008).

All the chapters in this volume illustrate the emergence of these patterns in different areas. The central section is, perhaps, the most clearly focused on the identification of patterns as it analyses specific constructions in L1 (Ellis) and L2 acquisition (Ibarretxe, Cadierno & Hijazo-Gascón and Alonso). But the first and last sections also show how patterns emerged in both oral (Section I) and written (Section III) different types of discourse with examples in cross-cultural communication (MacArthur), and literary manifestations in different languages (Caballero and Lewandosky & Mateu) and with illustrations of how speakers systematically understand and speak about specific concepts in different cultures (Littlemore, Arizono & May and Ogarkova, Soriano & Gladkova).

3. Analyses of figurative language (metaphor and metonymy) in use

The analyses of figurative language in use (metaphor and metonymy) are, for obvious reasons (a very wide scope), one of the most fruitful areas of CL-oriented research in recent years.

Since Lakoff and Johnson's (1980) *Metaphors we live by*, both the conceptual and linguistic realms have been present in the CL-model and scholars have referred to conceptual metaphors and their linguistic instantiations. As is well-known, in the earliest accounts of this view (Lakoff, 1987; Lakoff & Johnson, 1980), figurative language is explained not as a 'deviant' linguistic manifestation but as a natural product from conceptual metaphors in which an abstract concept is understood in terms of a concrete element, the well-known Conceptual Metaphor Theory; for further details see Gibbs (1994, 2008), Kövecses (2002, 2005) or Lakoff (1993). But it was soon acknowledged that 'metaphor' (or conceptual comparison/analogy) was not the only mechanism underlying the relation between concrete (source) and abstract (target) domains. Metonymy (or conceptual association/contiguity) has also been shown to play an important role in figuration (Barcelona, 2000, 2003; Benczes, Barcelona, & Ruiz de Mendoza, 2011; Kövecses & Radden, 1998; Littlemore, 2015; Panther & Radden, 1999).

Thus, for cognitive linguists, figurative language – including not only metaphor and metonymy but also irony, synaesthesia or hyperbole among others (for further details, see the special issue published in *Metaphor and Symbol* in 2001 and, in particular, the chapter by Gibbs, 2001) – is understood as a continuum from everyday uses to the most creative products of the conceptual structures mentioned above which are also physically, socially and culturally motivated and help us to conceptualise, understand and talk about the world. As pointed out above, CL has identified and explored the inextricable interrelation among cognition, language and communication showing how there are patterns in language,

despite the great complexity of the linguistic phenomenon in which cognition, experience, embodiment, human interaction but also society, culture and history. Cognitive linguists have investigated these patterns both universally and cross-linguistically but also within particular cultures, particular languages and particular individuals concluding that "the functions of language in discourse determine language use and language learning" (Ellis & Robinson, 2008, p. 3). This approach to language is the link between CL and another strand more concerned with the linguistic utterances than the conceptual mechanisms (Deignan, Littlemore, & Semino, 2013) that has developed in parallel focusing mainly on the analysis of figurative language in different types of discourse. This has been a very fruitful line of research with important contributions in areas such as, for example, educational and academic discourse (Cameron, 2003; Low, Littlemore, & Koester, 2008; Beger, 2011; Herrmann, 2013), business and economics (Koller, 2004; Alejo, 2010b; Herrera-Soler & White, 2012), politics (Musolff, 2004; Charteris-Black, 2005) architecture (Caballero, 2006) or wine discourse (Caballero & Suárez-Toste, 2008). In our view, the conceptual and the linguistic strands are complementary and have produced important findings, mutually enriching each other.

Of the three chapters included in the section devoted to figurative language in use in this issue, it could be said that the closest to the conceptual tradition would be the article by Ogarkova, Soriano and Gladkova whereas the contributions by MacArthur, on the one hand, and Littlemore, Arizono and May, on the other, would belong to the more applied linguistic tradition.

The chapter by **MacArthur** opens up this section by offering an account of the role of metaphorical language in cross-cultural communication with a methodology based on the analysis of a corpus. In fact, this article is one of the first pieces of work arising from EuroCoAT (the European Corpus of Academic Talk), a corpus specifically designed to analyse metaphor in academic conversation. Starting from previous research on the topic that had shown that lecturers often use metaphorical language (Beger, 2011; Low et al., 2008; among others) and, furthermore, that this language can prove to be extremely challenging for international students who often misinterpret these metaphors (Littlemore, Chen, Koester & Barnden, 2011), MacArthur concentrates on an underexplored area, i.e., office-hour consultations, and focuses specifically on how ideas are framed metaphorically by the lecturers and the responses these ideas produced on the students. In the data analysed, the author identifies two possible ways in which lecturers may metaphorically convey the advice they give to their students: overtly (when they signal their analogies) or covertly (by using conventional metaphorical expressions that are not flagged by any words that would help students identify them as non-literal). Although the author's initial hypothesis was that overt metaphors would lead to more effective communication, the results of the study actually showed that

communicative success was more dependent on the collaboration among both conversational partners rather than on the signalling or non-signalling of the figurative expression. Her findings have important implications for student and staff mobility in Europe, an increasingly important phenomenon.

In their chapter, **Littlemore, Arizono and May** explore how Japanese learners of EFL understand metonymy-motivated expressions, a type of figurative language use that, as is well-known, has traditionally been paid less attention. In a two-part study, they confronted these L2 learners with English metonymies in context. They ensured the authenticity of their data by identifying all the metonymic expressions in the British National Corpus (BNC) and Webcorp and they also rated them for imageability. Their analysis of the learners' responses focused on identifying: (1) the strategies employed; (2) the factors that contribute to successful comprehension; (3) the errors they made; and (4) the factors that present obstacles for successful comprehension of the expressions. In the second part of their study they also classified the metonymies according to the function they performed in the context (irony, evaluation, indirect reference and humour) in order to check the extent to which the effect the function being performed by the metonymy affected comprehension. Their results not only show that metonymic uses can pose serious challenges for L2 learners but also shed light on (1) the types of problems that may arise; (2) how these difficulties may be different when compared to the interpretation of metaphorical expressions; and (3) how the function of the figurative expression in context affects its understanding. All these findings are a very valuable starting point for any attempt to develop a CL-inspired methodology to teach metonymies to L2 learners.

The chapter that closes this section, authored by **Ogarkova, Soriano and Gladkova**, is a clear example of how CL can both contribute to and benefit from the methods and findings of other disciplines. The authors explore how people with a different linguistic background (English, Spanish and Russian) use and understand figurative expressions in the domain of 'anger'. In order to do so, they employ three different methods: A quantitative, corpus-based analysis of 'anger' metaphors in the three languages (that would be the most commonly found in CL-inspired studies) is complemented with two other methodologies of a more psycholinguistic kind (a feature-rating and a labelling task). They posed different hypotheses on the cross-cultural differences in anger experiences, specifically, they predicted that there will be differences among the L1 speakers of these three languages in the way they (1) evaluate, express and regulate anger; (2) perceive the causes and social status of the offender in anger scenarios; (3) perceive the frequency of anger occurrence in society; and (4) perceive the intensity of the emotion. The three methodologies were used independently to test these predictions and their results provided convergent evidence supporting all of them, thus,

corroborating the validity of both the predictions and the methods. The authors acknowledge the usefulness of CMT-based analyses as "a viable addition to the current repertoire of quantitative language-based methods in the interdisciplinary study of emotion" (this volume, p. 96).

4. Constructing meaning in language (L1 and L2 acquisition)

If, as we have seen, the CL literature has paid more and more attention to the application of its tenets to a wide array of research areas and topics, the study of constructions has generated a locus of collaboration and cross-fertilisation with the field of language acquisition. It is not surprising that the *Oxford handbook of Construction Grammar* (Hoffmann & Trousdale, 2013) devotes one of its five sections to acquisition and cognition.

The importance of this connection is established by Butler (2009) when he points out that, for CL, a major issue is whether the developments of a theory of grammar have 'acquisitional adequacy', i.e. they help in the understanding of "how the properties of languages proposed in that theory can be learned" (Butler, 2009, p. 34).

In our view, there are two main ways in which constructions have served as a springboard to make CL turn its attention to aspects related to language acquisition and to psychological issues. On the one hand, the area of constructions has become a significant area of debate with advocates of nativist grammars, especially by paying attention to arguments proposed by Universal Grammar such as the autonomy of syntax, and on the other, constructions is an area where we have been able to see the most straightforward application of psychological concepts and models to explain the processes of acquisition both in a first and a second language, a movement championed by one of the authors in the present volume, N. C. Ellis.

Different theories of construction grammar – i.e construction grammar (e.g. Goldberg, 1995), Construction Grammar (e.g. Fillmore & Kay, 1993), CL as Construction Grammar (e.g. Langacker, 1987) and Radical Construction Grammar (Croft, 2001) – are separate and focus on different issues (cf. Croft, 2007, Section 5), but most of them share principles (Gonzálvez-García & Butler, 2006) relating, among other things, their definition of constructions as form-meaning pairings, the link between language and cognition and a usage-based approach recognising different levels of abstraction in the definition of language units (cf. Croft, 2007; Ellis & Cadierno, 2009; Goldberg, 2013).

However, the link between language and cognition, although repeatedly acknowledged in theory by CL, has a long way to go. Constructionist approaches

have undoubtedly been enriched by psychological concepts, and we are beginning to become accustomed to the use of concepts such as 'entrenchment', 'recency', 'redundancy', 'contingency of cue-outcome', 'salience' or 'preemption', which the literature has come to recognize as determinants of language acquisition (cf. Ellis, 2010; Ellis & Cadierno, 2009; Ellis & Ferreira-Junior, 2009; Dabrowska & Divjak, 2015; Blumenthal-Dramé, 2012). Nevertheless, the opinion of leading figures in the field is clear: "the psychological reality of VACs [Verb Argument Constructions] needs further work" (Ellis, O'Donnell, & Römer, 2015, p. 175) and "there's a huge amount of work to do both in terms of linguistic research and in terms of building bridges between linguistics and other disciplines" (Goldberg, 2013, p. 31).

More importantly, there is a need to use the methodologies that are tuned to the psycholinguistic reality of constructions and are typically used in L2 acquisition research. Thus, corpus linguistic analyses, which are already frequent, would benefit from the incorporation of methodologies such as *collostructional analyses* especially designed for the analysis of constructions (Stefanowitsch & Gries, 2003; Gries & Wulff, 2005). Besides, the use of the experimental methodology, so typical of psychological studies and with many precursors in CL (cf. for example Brooks & Tomasello, 1999a, 1999b; Kaschak & Glenberg, 2000), needs to be extended. In this sense, the work by Ellis and collaborators is a good example of how these different methods can be combined in the ambitious enterprise of explaining and modelling the acquisition of the whole range of possible constructions in English (over 700 of which they have accounted for 20). Thus, on the one hand, they have carried out corpus analyses involving the frequency of constructions, the contingency of form-function mappings and the prototypicality of their meaning. But they have also undertaken the exploration of the cognitive correlates of the constructions identified in usage and have shown that in association tasks both native speakers' and advanced L2 learners' responses are influenced by the same determinants found in the analysis of corpora (cf. Ellis & O'Donnell, 2011; Ellis, O'Donnell, & Römer, 2015). The chapter by **Ellis** in the present volume is the continuation of the above lines of research by using experimental techniques – i.e. visual pattern masking and a naming task – affording a closer approach to the actual representation of constructions in the speakers' mind, thus providing further evidence of the psychological reality of constructions.

As claimed by Dabrowska (2009), there is also a need to bridge the gap between the research on the acquisition of L1 and L2 constructions, as many of the dimensions in which these two acquisition processes are claimed to be different can be seen in terms of "continua rather than dichotomies" (Dabrowska, 2009, p. 280). The one aspect where this idea does not hold is in the L2 learner's prior experience of another linguistic system, an area which under the name of

Language Transfer (Odlin, 1989) or Cross-Linguistic Influence (Jarvis & Pavlenko, 2008) has a long tradition of research, but to which CL has brought new insights. As expressed by Ellis and Cadierno (2009), L2 learners need to 'reconstruct' the new system they are acquiring by paying attention to the new ways of construing events inscribed in L2 constructions and by disregarding the attentional processes entrenched in their L1 constructions. This line of research has proven fruitful in CL research (Cadierno, 2004; Cadierno & Lund, 2004; Cadierno & Ruiz, 2006; Robinson & Ellis, 2008; see also Jarvis & Pavlenko, 2008; Han & Cadierno, 2010 for an overview).

The chapters by **Ibarretxe-Antuñano, Cadierno and Hijazo-Gascón** and by **Alonso** further explore this area by incorporating analyses not included in the literature so far. The first of these articles explores the lexicalization patterns of placement events, a subcategory of caused-motion constructions, by both native and non-native speakers of two typologically different languages, Spanish and Danish. As recognized by Jarvis and Pavlenko (2008), motion is one of the eight major conceptual domains where differences in conceptual representations between languages can be found. However, this article deals with a subdomain of caused-motion events where very little research has been done using the bidirectional design employed in this article. Thus, the contrast between the patterns used by both learners and native speakers of a pair of languages allows us to establish whether cross-linguistic influence can be predicted by comparing the conceptualizations of the two typologically different languages, a hypothesis preliminary not supported by the data obtained. The article by Alonso compares the choice of lexicalization patterns made by L1 English speakers as opposed to Spanish L2 learners of English when they were shown pictures of boundary-crossing motion events, a specific type of motion events whose linguistic construal has been shown to clearly distinguish typologically different languages (cf. Aske, 1989; Özçaliskan, 2015). The results show that Spanish L2 learners differ in their choices from English native speakers, as predicted by the constraints imposed by these two different languages as representative of the verb-framed (Spanish) and satellite-framed (English) categories.

5. Typology

As we can see from the chapters by Ibarretxe-Antuñano, Cadierno and Hijazo-Gascón and by Alonso, the fields of L1 and L2 acquisition have greatly benefited from the CL typology initially developed by Talmy (1985), as it provides a solid analysis of the different ways in which languages encode the basic semantic elements of motion events (Figure, Ground, Locatedness or Motion and Path) and establishes a distinction between satellite-framed and verb-framed languages which has been shown to be enlightening in the explanation of language transfer phenomena (see for example the application of the typology to phrasal verbs by Alejo, 2010a). As also shown by Alonso (this volume), L2 acquisition can also incorporate later developments, such as the boundary-crossing constraint (Slobin, 1996; based on Aske, 1989) and therefore it could be concluded that applied CL has a legitimate interest in the advance of contrastive linguistics and typology.

However, in recent years CL-inspired research has debated over the suitability of the initial typology opposing satellite-framed and verb-framed language. To use Imbert's expression, we could say that the boundary-crossing constraint (Slobin, 1996) was not the only 'leak' in Talmy's initial classification and that as Talmy (2000) himself recognized there are some languages such as Greek which could be described as parallel framing languages as they allow verb-framed and satellite-framed structures (Imbert, 2012, p. 245). Besides, the way some apparently verb-framed languages encode path and manner has led to the proposal of a new type 'equipollently' framed languages (Slobin, 2004). In fact, as shown by Filipović and Ibarretxe-Antuñano (2015), the number of typological proposals is ever growing. This growth could be said to be the result of the incorporation of the analysis of more languages to the typological analysis of cognitive linguists, who have been criticised by a certain degree of ethnocentrism and lack of a representative mass of languages (cf. for example Van der Auwera & Nuyts, 2007). One could easily ask oneself whether the methodology used by many of the so-called CL approaches to languages typology can only be ascribed to the area of contrastive linguistics.

Given these critical developments, the more recent literature is proposing a change of approach where it is not so much a question of establishing clear-cut typologies of languages but rather, as suggested by Imbert (2012, p. 245), framing types used to "classify Path-encoding constructions rather than 'languages'". As a result, research on intratypological variation is becoming more and more prominent and languages belonging to the same language group are analysed to see how they differ in the way they construct motion events in language (see for example Hijazo-Gascón & Ibarretxe-Antuñano, 2013). By the same token some researchers have also emphasized the importance diatopic variation (cf. Filipović

& Ibarretxe-Antuñano, 2015) as different dialects of the same language may differ in their lexicalization patterns of motion events and, we could add that, if some of the conclusions regarding genre specific differences within the same language (cf. the study of metaphorical motion by Caballero & Ibarretxe-Antuñano, forthcoming) are borne out, there would also be room to talk about diaphasic variation. All in all, the research is opting for a framework where dichotomies are replaced by gradients where languages are defined by the degree of salience they afford for the different elements encoding Manner or Path (cf. Imbert, 2012; Ibarretxe-Antuñano, 2009; Filipović & Ibarretxe-Antuñano, 2015).

The first chapter in this section, written by **Lewandowski and Mateu**, precisely explores the area of intratypological variation as their aim is to compare the translations of Chapter 6 of *The Hobbit* in two Satellite-framed languages, i.e. German and Polish. Their analysis focuses on two elements identified by the bibliography as central in the study of motion events and in the salience cline characterizing certain languages – Manner (Slobin, 2004) and Path (Ibarretxe-Antuñano, 2009) – and shows that German strategies for encoding these two semantic components are closer to the English original, whereas Polish translations make use of strategies that are closer a Verb-framed-language such as Spanish. These differences reinforce the idea that language typologies should not be considered as close taxonomies but rather, in an idea so dear to CL, as classifications following the principles of prototypicality.

The chapter by **Caballero** expands the scope of application of this typological framework in the line of other authors who have applied it to other meaning areas outside motion events (e.g. fictive motion or metaphorical motion; cf. Gibbs, 2015, and Özçaliskan, 2004, 2005, cit. in Filipović & Ibarretxe-Antuñano, 2015, p. 529). In the case of Caballero, the typology is applied to the analysis of quotatives, i.e. the verbs used to report speech events, found in a corpus of written fiction stories in English and their corresponding translations into Spanish. By performing both a quantitative and qualitative analysis of all the instances found, the author emphasizes the importance of the difference in the rhetorical style used to report speech events between these two typologically different languages. In the same way as, in describing motion events, English narratives offer a richer vocabulary of Manner and greater elaboration of Path than Spanish narratives, when reporting speech events the English language pays more attention to the message and the context thus offering a more compact account of the event, while Spanish is more analytic and tends to encode more easily the pragmatic reasons explaining the speech event reported.

6. Conclusion

In this introductory chapter, we have highlighted the influence of the theoretical postulates of CL on numerous and varied applied fields and have identified three relevant research foci that have attracted a great deal of attention among scholars and have produced a great and influential bulk of research: Analyses of figurative language (both metaphor and metonymy) in use, constructions and typology. The chapters included in this volume both illustrate applications of the CL-paradigm to different fields (intercultural communication, the psychology of emotions, second and first language acquisition, discourse analysis and translation studies) and are characterised by the use of rigorous methodologies. We hope that the present volume will not only contribute to a better understanding of how CL can be applied but that it will also help to encourage, even further, more robust empirical research in this field.

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SECTION I

Figurative language in use

Overt and covert uses of metaphor in the academic mentoring in English of Spanish undergraduate students at five European universities*

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Twenty-seven semi-guided office hours' consultations between lecturers and Spanish-speaking undergraduate students were recorded at five different universities in Europe where English is the medium of instruction. The linguistic data gathered show that metaphor plays a significant role in the way that lecturers explain to visiting Erasmus students how assignments, exams or course contents should be approached and understood. When mentoring their students, lecturers often frame the advice they are giving in metaphorical ways; occasionally this is done overtly, through establishing analogies or non-literal comparisons, but more often it is done covertly, through the use of conventional metaphorical expressions that are not accompanied by words or phrases that signal that the lecturers' words should be understood as metaphors. This article examines extracts of talk from 5 academic conversations, looking at the different ways that ideas are framed metaphorically and the kind of responses they provoke in a conversational partner. The initial hypothesis was that overt metaphors would be a particularly effective means of communicating an idea in these cross-cultural mentoring sessions. However, when we compare this with covert uses of metaphor in the corpus, there is only weak evidence that it is so. Rather, the communicative success of any use of metaphor seems to depend very largely on the way that the conversational partners enact their roles as collaborative participants in an academic conversation.

Keywords: metaphor, office hours' consultations, academic discourse, cross-cultural communication

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1. Introduction

Among the many interesting findings emerging from discourse approaches to metaphor are that metaphorical language use is neither evenly distributed across genres nor evenly distributed within any particular text or discourse event. Steen and his colleagues (Steen, Dorst, Herrmann, & Kaal, 2010; Steen, Dorst, Herrmann, Kaal, & Krennmayr, 2010) found that the density and type of metaphorical language used in newspapers, fiction, conversation or academic discourse varied substantially: metaphor is much more frequent in newspapers than in conversation, for example, and – perhaps more unexpectedly – more frequent in academic discourse than in fiction. In fact, among the four discourse types examined, these researchers found that the highest density of metaphorical language was to be found in the academic texts they examined. Furthermore, it has been found that metaphor fulfills important ideational, interpersonal and textual functions in spoken academic discourse in English. Lecturers use metaphors to explain and evaluate concepts, organize their discourse, frame problems, or change topic (Beger, 2011; Corts & Pollio, 1999; Low, 2010; Low, Littlemore, & Koester, 2008). However, this very use of metaphorical language can prove extremely challenging for international students studying at a university where English is the medium of instruction: it has been found that students whose first language (L1) is not English often misinterpret the metaphors their English-speaking lecturers use (Littlemore, 2001, 2003; Littlemore, Chen, Koester, & Barnden, 2011). Unfortunately, these misunderstandings may only become apparent when feedback becomes available, such as when exam scripts are read or when specially designed studies are carried out to discover how international students have interpreted such language uses.

This lack of readily available feedback is largely a consequence of the type of spoken academic discourse considered so far: lectures (like textbooks or other types of written communication used in academia) are examples of monologic communication. They are delivered to large numbers of students at once and this may make it difficult for students to ask questions and request clarification of opaque language uses – or indeed for lecturers to notice when members of their audience are not following what they are saying. However, spoken academic communication is not limited to lecture halls; the type of teaching activities that take place in universities is diverse and affords several other kinds of possible interactions, such as those that occur in small group seminars or individual office hours' consultations. In these teaching/learning sessions, lecturers and students engage in conversations that may well afford opportunities for possible misunderstandings to become apparent and be cleared up. To date, however, these contexts of communication have not been examined, and we know virtually nothing about

how metaphors may be used and meanings negotiated in face-to-face conversations between international students and their English-speaking lecturers.

The research reported in this article takes a first step in examining metaphor use in academic conversation. Twenty-seven face-to-face conversations between Spanish Erasmus students and their lecturers were recorded at five different European universities where English was the medium of instruction. The aim of this research was, in general, to examine the realizations and functions of metaphor in academic communication when students sought advice from their lecturers on their academic work in individual office hours' consultations. In this article, I focus on one particular aspect of metaphor use in these conversations: the way that lecturers express themselves metaphorically when talking to undergraduate students whose L1 is not English. The question I explore is the extent to which it might help such students to understand metaphorical language use better when lecturers flag the metaphors they use in a way that students are likely to notice (for example, by using an active *A is B* metaphor or a simile). My hypothesis was that this *overt* use of metaphor might help students to realize that they were being asked to consider one thing in terms of something else (rather than being confronted with some incomprehensible use of language) and allow them to collaborate in building on or challenging the metaphorical framing of the topic at hand – in other words, in negotiating the metaphors used to talk about that topic. In contrast, it seemed likely that when lecturers used metaphors realized by language forms not marked in any obvious way as non-literal (for example, by using verbs, nouns, phrases and so on that were not flagged as non-literal through markers such as "so to speak", "as it were", among others), students might experience greater difficulty in perceiving that their interlocutor was inviting them to consider one thing in terms of something else, and hence be less likely to collaborate in – indeed even misunderstand – the metaphorical frame offered by the lecturer. That is, there might be greater alignment between intended meanings and understandings in intercultural conversations of this kind when a conversational partner (in this case, the lecturer) *overtly* invited the students to consider something in terms of something else rather than when s/he did so *covertly* through unmarked language forms.

The present article begins by providing a brief description of the background that motivated this study. It then goes on to describe the linguistic data on which the analysis is carried out and the method used for identifying the linguistic forms of the metaphors used. I then provide a detailed examination of some covert and overt uses of metaphor in excerpts from the transcripts of five academic conversations between Spanish Erasmus students and their English-speaking lecturers, seeking to uncover possible differences in the way the undergraduate students responded to these different ways of metaphorically framing a topic. The

conclusions offered on the basis of a small amount of data can only be tentative, but indicate that there is only weak evidence from the extracts of discourse examined that the way a lecturer expresses him/herself metaphorically affects the students' uptake or verbal behaviour in response to the different means available to metaphorically frame a topic.

2. Background

Metaphor is a complex and multi-faceted phenomenon which has been approached in many different ways over the centuries. In the last 30 years or so, one aspect of metaphor use that has received a growing amount of attention is its *systematicity*. From the point of view of cognitive linguists (e.g., Lakoff, 1993; Lakoff & Johnson, 1980, 1999; Kövecses, 2003), people's systematic use of words and expressions from a particular source domain (for example, JOURNEYS) to talk about particular target domains (for example, LIFE) provides evidence of conceptual mappings that reveal that people actually think about LIFE as though it were a JOURNEY. Discourse analysts such as Cameron and her colleagues (e.g. Cameron, 2003, 2008, 2010; Cameron, Maslen, & Low, 2010), while remaining agnostic about the status of pre-existing conceptual metaphors that motivate the way people talk and reason metaphorically, have nevertheless shown that systematicity is also characteristic of metaphor use in face-to-face conversation, and indeed they regard uncovering such systematicity as an extremely important aspect of metaphor-driven discourse analysis:

> A linguistic metaphor is connected into a dense network of ideas, associations, conceptual and affective patterns which are interwoven with correlates from embodied experience …. Systematic connections between semantically similar metaphor vehicles on the one hand and the topics they express on the other, open a window on the ideas, attitudes and values which may be active in speakers' or writers' minds at the time they engage in the discourse. The more robust the relationship, the stronger the claim that can be made about the underlying factors it reveals. (Cameron et al., 2010, pp. 116–117)

As Cameron (2008, 2010) has explained, metaphor shifting is an emergent phenomenon in discourse and may reveal the convergence (or divergence) in attitudes to topics of talk among participants in a conversation: "[i]n the flow of talking-and-thinking … linguistic metaphors shift as people negotiate meanings, extend their ideas, or enjoy exploiting an unexpected possibility opened up by metaphor" (Cameron, 2010, p. 88). Metaphors can be developed in conversation (by one speaker or by both/all participants across turns) in various ways: the vehicle term (metaphorically used word or phrase) can be repeated in identical

or transformed form; relexicalised (with the use of a near synonym); explicated (such as when the term is expanded, elaborated or exemplified); or contrasted (such as when an antonymic or contrasting term is used) (Cameron, 2010, p. 89). When metaphor vehicles are developed in this way, we may say we have a systematic use of metaphor in the discourse.

As far as I know, this kind of systematicity of metaphor use in discourse has only been fully explored in conversations between L1 speakers of English. Yet it would seem a very useful way of approaching conversations where speakers do not share the same linguistic or cultural background. This is because when participants in a conversation jointly collaborate in the development of a metaphor, this reveals a close coordination of meanings and understandings. Repetition and elaboration of another's words – metaphorical or not – have been shown to be important in spoken dialogic discourse as this helps build rapport and provides close connections, as well as contributing to topic development across turns (Tannen, 2007). If metaphors are developed systematically across turns in a conversation, speakers are on the same page, so to speak, and talking about the same thing. As regards metaphor development or shifting, what is crucial is what happens after the metaphor is first used in the discourse.

With regard to this first use of a metaphor in discourse, it is important to recall that when speakers or writers express themselves metaphorically, they may do so in a number of different ways (see Brooke-Rose, 1958; Goatly, 1997, for full descriptions of the linguistic forms metaphors may take). The prototypical examples often offered to illustrate what a metaphor is in its realization as an *A IS B* or expository metaphor such as "The past is a foreign country" (Hartley, 1987, p. 7) or as a simile, such as "Here the ravens floated below them <u>like</u> black scraps from a fire" (Goatly, 1997, p. 184, underlining mine) or "His head hair was sleek <u>as if</u> fat had been rubbed in it" (Goatly, 1997, p. 186, underlining mine) where *as*, *like*, or *as if/though* signal that a non-literal comparison is being made. Yet, in other contexts, such as spoken academic discourse, metaphors – particularly if they are conventional ones – seem most often to be realized in relatively unmarked forms, as verbs (e.g. "Climate change *demands* a global response" [Littlemore et al., 2011, p. 415]), nouns (e.g. "*explosion* of interest" [Ibid.]), or fossilized phrases of various kinds (for example, "*wrap up* a lecture" [Ibid.] or "*take* something *on board*" [MacArthur & Littlemore, 2011, p. 226]), among other possibilities. It should be noted, however, that writers and speakers can signal that even such conventional words and phrases are not intended to be understood in their literal sense by inserting one of a wide range of expressions (for example "as it were", "metaphorically-speaking", "literally" or "actually") before or after the metaphorically-used word or phrase (for a full account of the forms these signalling devices can take, see Goatly, 1997, pp. 168–193). In turn, such signalling devices, like the

more obvious or prototypical expression of a non-literal comparison, may alert the reader or listener to the fact that they are being invited to consider something in terms of something else.

Cameron and Deignan (2003) analysed a number of expressions used to signal metaphorical language uses in spoken discourse (*actually*, *almost*, *imagine*, *just*, *kind of*, *a little*, *really*, *sort of*), finding that they were used with particular interactional functions. These "tuning devices" (Cameron & Deignan, 2003, p. 150) were used to direct the listener's attention to a particular interpretation, adjust the strength of the metaphor or even alert interlocutors to the unexpected (Cameron & Deignan, 2003, pp. 154–157). Perhaps the most important finding of this small-scale study was that Primary School teachers showed a "high degree of sensitivity to notions about the hearers' developing linguistic knowledge", which was shown by the fact that they used tuning devices "as frequently with conventional metaphors as with deliberate ones" (Cameron & Deignan, 2003, p. 157). That is, Primary School teachers seemed aware of the difficulties that school children might experience in understanding potentially opaque language uses involving metaphor. However, it is not clear that educators in centres of Higher Education are equally sensitive to the difficulties that international students – whose knowledge of English is similarly incomplete or developing – might experience in understanding the conventional metaphorical language that they use in lectures.

In a series of studies, Littlemore and her colleagues (Littlemore, 2001, 2003; Littlemore et al., 2011) have shown that students whose L1 is not English often misinterpret the metaphors their English-speaking lecturers use. In these studies, the researchers focused on *indirect* realizations of metaphors, that is, metaphorical expressions that were not flagged in any obvious way as being figurative. Yet it has been found that lecturers may also employ metaphors in more overt ways. For example, Beger (2011) presents data showing that lecturers use direct or "deliberate" metaphors to explain abstract or new concepts to student audiences. An example of this is an occasion when a lecturer uses an analogy to specifically invite listeners to think about one thing (aggression) in terms of something else (a hydraulic system): the excerpt she cites from this Psychology lecture begins "think about this tank of water as the reservoir within your soul, that aggressive impulses are dripping into" (Beger, 2011, p. 53). Likewise, although Low (2010), found that the incidence of similes was very low, particularly in what he terms "rhetorical style" lectures, they did occur in two "conversational style" lectures he analysed. This suggests that when lecturers express themselves in ways that are relatively interactive, they may be more likely to draw attention to the grounds of the metaphorical comparisons they are making.

To the best of my knowledge, there exists no robust empirical evidence to show that these different ways of metaphorically framing a topic affect how they

are understood by interlocutors in real discourse events. The question I therefore explore in this article is whether explicitly signalling that the listener is being invited to construe something as though it were something else makes a difference to the way that the students interpret the metaphors their English-speaking lecturers employ or whether this is very similar to the way they may respond to indirect metaphor use. I refer to these different realizations as "overt" and "covert" uses of metaphor throughout the article for two reasons. On the one hand, the term "deliberate" metaphor has been used in different ways by different researchers (e.g. Cameron, 2003; Steen, 2011a, 2011b) and its use here might lead to confusion. On the other, the linguistic realizations of metaphor that I identify as "overt" do not exactly match those used by other researchers to identify "deliberate" metaphors.

In order to explore this question, I examine extracts from a corpus of face-to-face conversations between Spanish undergraduate students and their lecturers at five different universities in Europe where English was used as academic lingua franca, looking at the way a listener responded to his/her interlocutor's use of a metaphor and whether it was systematically developed by both speakers. My working hypothesis was that the uptake of a metaphor – that is, its repetition or development – across turns would be one indication that the interlocutors had understood (at some level) the metaphorical frame being offered by replicating and collaborating in its use in the discourse.

In the next section, I describe the data, how the corpus was compiled and how these different realizations of metaphor were identified in the corpus. I make a few remarks on the characteristics of the 27 conversations that lecturers and students had together before moving on to offer a detailed qualitative analysis of overt and covert metaphor use in excerpts from five of these academic conversations.

3. The data

The data analysed here come from a corpus of 27 conversations between lecturers and Spanish undergraduate students that were video-recorded at five different European universities between April and November 2012. This yielded a total of 5 hours, 47 minutes and 33 seconds of conversational data (consisting of conversations lasting between 6 minutes 32 seconds [the shortest] and 22 minutes 22 seconds [the longest]). The video-recorded conversations were transcribed, using a slightly modified version of the conventions used for the Vienna-Oxford International Corpus of English (VOICE).[1] The transcription of each conversation

1. For full details of the spelling and mark-up systems used, readers are referred to the research project website: http://www.eurocoat.es/web_sections_1/the_corpus_12.

underwent four stages to ensure, as far as possible, the accuracy and homogeneity of the 27 transcripts: the first version of the transcript was the result of the work of a research assistant; this was then checked for accuracy by two other researchers independently. Any disagreements about the way elements of the conversation had been transcribed were discussed and resolved by the three researchers involved. Finally, all transcripts were proof-read and corrected by one person to ensure that the spelling and mark-up conventions had been consistently applied across the corpus. Each transcript was assigned a place identification (UE, UI, UNL and US, refer to recording made in England, Ireland, the Netherlands and Sweden, respectively) followed by a number, referring to the order in which the recordings were made. Hence, UNL2 is the transcript of the second recording made at a university in The Netherlands.

3.1 Participants and procedure

The 27 student participants (11 male and 16 female) were all Spanish undergraduates spending between 5 and 9 months at universities in Ireland, England, the Netherlands and Sweden within the Erasmus programme, which makes it possible for students from universities participating in this programme to complete part of their degree at another university in Europe. All the undergraduate degree courses that these students were enrolled in were taught in English, an increasingly common phenomenon in higher education institutions across Europe (Coleman, 2006).

Twenty-one lecturers were involved in these conversations (5 participated in more than one session recorded). 14 of the lecturers were L1 speakers of English; the remaining 7 had different L1s: Greek (1), Spanish (1), Dutch (2), Chinese (1), Swedish (1) and German (1). This means that only in one of these conversations, where Spanish was the first language of both participants, did there exist a shared language background. In all cases, the conversations were in English.

The data being sought were to resemble, as far as possible, the kinds of interactions that may take place in office hours' consultations, when lecturers are available for individual consultations with students. To this end, we sought volunteers among Erasmus students at the five different universities involved, asking those willing to participate in the study to suggest the name of a lecturer they were currently being taught by in order to engage in a guided academic consultation with him/her that would be video-recorded, transcribed and later analysed. Once agreement had been reached with the lecturer, timetables for the recordings were set up.

All participants in this research (students and lecturers) were fully informed of the purpose of this research and their role in it, and signed a form declaring that they fully understood the nature of their participation and their right to

request that the recording equipment be turned off if they felt uncomfortable being recorded. They likewise gave their consent to the data gathered being used for research purposes. This included both the linguistic data gathered and their responses to two questionnaires administered before and after the recording.

In order to ensure that the conversations would deal with academic topics (rather than others that might arise, such as personal problems the students were experiencing), we asked the students to prepare two or three questions for their lecturers on one of three topics: written or other assignments that they had completed or were in the process of completing; the systems of assessment used at the host university for that particular subject; and/or difficulties being experienced in understanding the course contents. The lecturers were not informed in advance of the content of the questions, although they were made aware of the general areas that the students would wish to discuss.

The conversations took place in the lecturer's office and were video-recorded. After the equipment had been set up, the researcher responsible for the recording left the room and did not enter again until invited to do so by the participants, although after 9 minutes s/he knocked on the door to warn them that the 10 minutes foreseen for the conversations to last were almost up. This procedure meant that participants were free to continue talking for as long as they liked, resulting in conversations of unequal length, as might be the case of "real" conversations of this kind.

3.2 Overview of the lecturer-student conversations

Analysis of the office-hours consultations (using qualitative and quantitative methods) revealed the asymmetry of these conversations. The corpus as a whole comprises 55,718 words,[2] of which 38,384 were uttered by the lecturers and 17,280 by the students. Although the students were more or less in control of the topics at the beginning of the conversation, having come prepared with specific questions that they wished to have answered, unsurprisingly perhaps, the lecturers would quickly take charge. The lecturers tended not to engage in any collaborative discussion of any problems the students were experiencing (inviting the students to come up with ideas or solutions, for example) but seemed to think it incumbent on them to provide advice about the issue at hand. This asymmetry was also reflected in the kind of responses the students provided to the advice they were being given: the words they most commonly used were "yeah" and "okay" (the 3rd

2. These were the tokens used for generating word lists, and did not include items not found in dictionaries, such as hesitation markers like *mhm* or the orthographic representation of speaker sounds, such as *haeh*.

and 4th most frequently used words by the student participants) along with other minimal response tokens such as "uhu" or "mhm".

The imbalance in the speaking time of the interlocutors may, of course, have simply been a consequence of the way that these mentoring sessions were set up. However, the on-stage effect should not be over-estimated. The students and lecturers responded to a follow-up questionnaire designed to gather their subjective impressions of the conversation they had just had and were asked to respond on a Likert scale of 1–5 of incorrect-correct to the statement "This is the kind of conversation I would have with an undergraduate student/lecturer in an office hours' consultation". The replies showed that 82.6% of the lecturers' responses were between 4 and 5 on this scale, and 80.8% of the students'. That is, from the point of view of most of the participants, the conversation resembled the kind of interactions they had experienced on previous occasions when engaging in this type of academic interaction.

It should also be noted that disfluencies or obvious cases of misunderstanding or miscommunication were extremely rare in these conversations. The only occasion on which the interlocutors had obviously not understood each other occurred in US2 when the student produced /test/ instead of /tekst/ when talking about referencing in an essay she was preparing. This caused a local problem in the interaction, which was quickly cleared up. Otherwise, a simple reading of the transcripts revealed no obvious cases of misunderstandings associated with metaphor, which suggested that it would be necessary to use other ways of tapping into possible mismatches between meanings and understandings, as described in the following sections.

4. Metaphors in the corpus of office hours' consultations

4.1 Identification of covert and overt uses of metaphor in the corpus

The procedure described by the Praglejaz Group (2007), commonly referred to as MIP, was used to identify the metaphors in the corpus. Lexical units were most often taken to be single words (i.e. a string of orthographic characters with a white space on either side). This meant that some units often regarded as "polywords" (for example, phrasal verbs) were treated as decomposable. This is because the literature on learner language as well as our own experience indicated that these kinds of units tend to be treated as fully decomposable by Spanish learners of English (Alejo, 2010). The identification of the potentially metaphorical use of the lexical units in each transcript was carried out in the first instance by one member of the research team (the author) and then checked by two others. In cases of

disagreement over the identification of a metaphorically used word, these were discussed and resolved by the three researchers involved.

The density of metaphorically used words in the different transcripts ranged from 8.4% to 15.9%, with an average density of 12.2% across the whole corpus (slightly higher than the figures cited in Steen, Dorst, Herrmann, & Kaal, 2010; Steen, Dorst, Herrmann, Kaal, & Krennmayr, 2010 for everyday conversation, but lower than those for written academic discourse).

MIP is not a procedure that allows for identification of anything but indirect metaphors (see Steen, Dorst, Herrmann, Kaal, & Krennmayr, 2010, for discussion). That is, similes, analogies and the like do not show up with this method unless researchers adopt some specific procedure for including them in the analysis of the metaphorical language used in the texts. With regard to similes, this is fairly straightforward, because the linguistic markers for comparisons (whether literal or non-literal) are easily noticed in the discourse (*like*, *as,* or *as if, as though*) and could be located and identified during the process of identifying the indirect metaphors. Other candidates for classification as overt metaphors required a different procedure. Steen, Dorst, Herrmann, Kaal, & Krennmayr (2010, p. 787) remark that indirect metaphors can be used "deliberately" in the sense that they take a form that "typically alerts addressees in some way that they are meant to process the metaphorical expression as a cross-domain mapping". Among the forms these researchers suggest that such overt uses of metaphor may take in discourse are the use of a marked construction such as the A is B format or an extended comparison across utterances. Identifying this type of overt use of metaphor in the discourse was done by reading through the whole corpus carefully looking for possible candidates.

However, locating and identifying any specific markers used by speakers to flag their use of indirect metaphors *as metaphors* required a separate search for linguistic items that could serve as tuning devices around the metaphorically-used words already identified. The search terms used were *metaphorical(ly)*, *literal(ly), as it were, sort of, kind of, actually, imagine,* and *think.* Cameron and Deignan (2003, p. 154) found that Primary School teachers regularly used *imagine* to "encourage students to conceptualize an entity in a particular way" but this tuning device was very infrequent in talk between adults in the large corpus they examined (the Bank of English) and would thus seemed less likely to occur in a corpus of the kind examined here. As *think* could also have a similar function, this was added to the list of search terms.

The use of overt metaphors by the lecturers in the corpus was remarkably low. The search for tuning devices revealed that these educators never used signals such as *metaphorical(ly)*, *literal(ly), as it were, kind of, actually, imagine,* or *think* to flag their uses of language as non-literal. However, some uses of *sort of* could be related to this function when used by one lecturer (L1 Greek):

(1) yeah well in terms of the **sort of** going back to the focus I think this section your first section could have been shorter (UE3: 95)

(2) so the two don't really connect so you could have either **sort of** expanded on THIS one and to say like this is why this institution doesn't work you know (UE3: 113)

Nevertheless, it was difficult to classify this speaker's use of *sort of* as a tuning device specifically related to metaphor, as she was equally likely to use it when employing a word or phrase in its basic sense.

(3) yeah I mean there are a lot there are a kind of you know **sort of** words that don't really fit what you're trying to say (UE3: 159)

Furthermore, as the use of *sort of* was associated with only one lecturer (whose L1 was Greek) and even in her speech fulfilled a number of different functions, it was not considered to be a sufficiently clear case of metaphor signalling to be counted as a case of overt metaphor use in the analysis being carried out.[3]

Apart from the absence of clear cases of tuning devices around the metaphorical uses of words in these conversations, as well as a complete absence of *A is B* metaphors, only three overt uses of metaphor were identified in the corpus as a whole. I describe each one in turn, seeking to find evidence in the student's responses that they had understood the metaphor, by examining the use or absence of semantically-related words in their speech following the first use of the metaphor.

In the following sections, not all of the metaphorical language uses that have been identified in the transcripts are highlighted. Rather, in order to draw attention to the language uses which are the focus of attention in each case, these are highlighted by being placed in bold type.

4.2 Lecturers' overt uses of metaphor

An example of an overt invitation to the undergraduate interlocutor to see one things in terms of another comes from a conversation between a female lecturer (L1 English) teaching a course on Entrepreneurship and Innnovation at an Irish university and a male undergraduate student enrolled in this course (he was doing a degree in Business Studies). The lecturer (identified as MO) was giving the student (identified as DS) advice about how best to prepare for an upcoming exam he

3. The fact that the lecturer's use of *sort of* was discarded from the present analysis does not mean that it is without interest and does not deserve closer attention.

would be doing in this subject. The lecturer explained that the kind of knowledge she expected the student to display in the exam was of different kinds and came from different types of learning activities: the text-book used, the lectures, and the case studies considered in the tutorials. Her explanation involved the use of words and phrases that expressed this notion in terms of a physical arrangement:

252	DS	and (.) the thing is that I was expecting for (.) em (.) more content (.) I mean more examples and so on (.) so (.) you think that is (.) useful for er (.) studying and focusing on the exam (.) should I **focus** on the slides (.) and then the: cases in the tutorials (.) and so on
253	MO	okay it's a good question (.) erm what I said to you at the last lecture when somebody (.) somebody in the class asked me this (.) is i want you to prioritize (.) your study (.) so (.) the basic **wide** reading (.) **comes from** your text-book
254	DS	mhm
255	MO	er (.) the more applied to industry (.) which is **narrowing down** (.) **comes from** your tutorials and the case studies
256	DS	mhm
257	MO	and then (.) what **pulls it all together at the very top** (.) are the lecture slides
258	DS	okay
259	MO	so that's your **focus** (.) the **focus narrows**

As can be seen, the lecturer uses a number of movement metaphors ("comes from", "narrowing down") alongside expressions that refer to a static arrangement ("at the very top") as well as vision ("focus"). The mixing of vehicle terms that refer to movement is potentially very confusing. *Come from* describes movement from one place (the textbook and the tutorials and case studies [UI5: 253 and 255) in the direction of the subject (the student), while *narrow down* (UI5: 255) does not specify the point of departure or arrival but rather downward movement on a vertical axis. However, this "narrowing down" turns out to be an upward movement ("what pulls it all together **at the very top**" [UI5: 257]), that is, the highest point in this physical arrangement is also the narrowest. Any coherence in the metaphorical expression of this idea – if indeed it existed – emerged when the lecturer linked her use of *narrow* with *focus* ("the focus narrows" [UI5: 259]). In summarising the point she was making, the lecturer related her explanation to the student's question ("should I **focus** on the slides?") by recycling the verb the student used as a noun ("So that's your **focus**, the **focus narrows**).

Analysis of the metaphorical vehicles in this stretch of the discourse reveal a somewhat incoherent formulation of the advice being given and which does not seem to contribute to communicating with any clarity what it is that the student needs to do. However, the student seemed to grasp the general idea and the conversation continued with the student explaining that, although he found the lectures and tutorials easy to understand, "the thing is for me the reading from

the textbook is a bit tough" (UI5: 264), to which the lecturer responded "you DO need to read it" (UI5: 271) because "I DO need you to have that **foundation level** first" (UI5: 275).

The lecturer's use of the words "foundation level" are connected to her previous words about the physical arrangement of the sources of knowledge and information (*foundation* and *basic* are both linked semantically to the notion of providing support from below), and it is perhaps here that she perceives the connection between simple physical arrangement and a building, for she now begins to talk about this physical structure as a container: "that's why it's there as the recommended reading DO any other reading you do **outside** that oh well any other reading you do **outside** that (.) is additional and great to do" (UI5: 227 & 279). The kind of building she has in mind is then clarified:

283 MO and **look at it as a pyramid**
284 DS mhm
285 MO and what you need to do is you you need to be <52> exTREmely familiar </52>
286 DS <52> <un> xx </un> there </52>
287 MO with the **top** s- the stuff at the **TOP** (.) you <53> have to know that </53>
288 DS <53> but have the **base** </53>
289 MO yeah exactly

This overt invitation to see the preparation of an exam in terms of a pyramid seems to be functioning here as a summary statement, clarifying the grounds of the comparison set up earlier with talk of "narrowing" "at the top". Interestingly, the student contributed to expanding and explaining the metaphorical idea by completing the lecturer's "you need to be extremely familiar with the stuff **at the top**" (UI5: 287) with "but have the **base**" (UI5: 288). This kind of other-completion (overlapping with the lecturer's words) is evidence of a very close coordination of meanings emerging in the discourse of the two participants. In terms of the metaphorical idea expressed, the student's use of "base" is completely coherent with the building metaphor and leads to the conclusion that the lecturer's metaphorical comparison with a pyramid has been communicatively very effective.

However, it was not always the case that overt metaphors lead to the successful communication of an idea – or at least not in ways that the analyst can perceive from the discourse evidence. In the extract that follows, a female lecturer (L1 German) teaching a course on Computer Security at a university in Sweden was talking to a male undergraduate student doing a degree in Computer Science about some problems he was experiencing in understanding the course contents. He had not understood the terms "reflection" and "amplification" used in a lecture on computer security:

68	SB	I can try to explain and then if we need it we can go back to it
69	DE	mhm
70	SB	hh so the reflecting is erm (1) that you **play it off** of someone else so you don't **go directly** (.) **to the target?**
71	DE	mhm
72	SB	but erm (.) **like for example don't you play** (.) er **pool do you play billiard** (.)
73	DE	uhu
74	SB	yes
75	DE	mhm
76	SB	**so instead of going directly to the ball you would er then (.) er go to a corner first and then it would reflect** <19> **and** </19>
77	DE	<19> mhm </19>
78	SB	**hit it at a different angle**
79	DE	<fast> <soft> yeah </soft> </fast>
80	SB	and **here it's er similar** so you don't go to the: target directly but you er use another (.) erm machine <20> to </20>
81	DE	<20> <soft> mhm </soft> </20>
82	SB	er send the attack there and it can hit it differently and then you can also have hh erm (.) erm an interaction between the two of them that you don't have to worry about so it saves you resources

The lecturer (SB) began by explaining "reflection" in terms of game metaphors ("the reflecting is … that you **play it off** of someone else so you don't **go directly to the target**" [US5:70]). She uttered these words on a rise tone (signalled in the transcript by a question mark), the intonation used when speakers of English wish to check that hearers understand or already know what is being said to them. It seems that the lecturer was not persuaded that the student's response signalled understanding, because she then made an explicit analogy between "reflection" in computer security and playing pool or billiards. However, as can be seen from the transcript, the feedback she received on her explanation of how and why computer reflection is like playing pool is minimal. This student did not collaborate at all in this effort to increase his knowledge and clarify his doubts. Indeed it is not at all clear that this analogy helped to him to understand what "reflection" in computer security means.

The third case of an overt metaphor identified in the transcripts occurred when a lecturer used an extended metaphor. In this conversation between FL, a male lecturer (L1 Swedish) and RH, a female student doing a degree in Journalism, the discussion was about effective academic writing. The lecturer metaphorically framed the topic of successful communication in an academic essay by inviting the student to compare the writing process as one of guiding the reader through the text. The essay she had written was "difficult to follow" (US3:21) so his advice

was that she "pick/lift out" the main idea to "make it clear" (US3: 27). The writer, said the lecturer, had to "lead the reader into the world of [the] essay" (US3: 43); she must "take the reader's hand" so that "he knows now we go first to one and then two and three, so that the reader doesn't have to fall" (US3: 45 & 47). In this essay-world, he said, "we want to see you, we want to see Oscar Wilde, and we want to see other critics also. All of them are there together for one purpose only and that is to make your essay stronger" (US3: 57). The use of this extended metaphor took up over four minutes of the conversation, and the following extract occurred at the beginning, when the "writer as guide on a journey" metaphor was first introduced:

21	FL	and I THINK but you need to correct me now because <swallows> when when I read your essay it was sort of a little hhh difficult to **follow** your
22	RH	mhm
23	FL	**train** of thought but I think that what you want to do (.) is to say that he contradicts himself
24	RH	yeah
25	FL	that is your main **point**
26	RH	mhm
27	FL	so this (.) this ONE thing is something that you need to **pick out** from your essay (.) **lift out** and **make clearer** (.) this is your main idea (.) you're not talking about (.) Oscar Wilde or (.) or or the (.) article (.) you are talking about how he contraDICTS himself in the article this is your **point** (.) and you need to **lift it out** (1)
28	RH	<soft> yeah (.) I have to be more **clear** (.) I know </soft>

The basic idea being expressed had to do with the obligation of the writer/guide to signpost the way for the reader ("your main point",[4] "pick out", "lift out", or "make clearer"). The student responded with the words "I have to be more clear", repeating (in a slightly modified form) the lecturer's own words, thus building on and collaborating in his metaphorical framing of the topic.

The three ways of expressing an idea metaphorically seen here all comprise overt invitations to the students to think about something as if were something else. However, their communicative effectiveness is not always assured, if we are to judge from the way that the student interlocutor responds to the metaphorical "offer" or collaborates in building on it. In two cases, as has been seen, the overt use of a metaphor by a lecturer did arouse a coherent metaphorical response from the student interlocutor. In the case of the "playing pool" analogy, however, there

4. Sense 6 of 'point' provided by the *Macmillan English dictionary for advanced learners* is 'a very small area of light or colour', which we took to be the basic meaning motivating this metaphorical use.

is no evidence from the discourse that the student had understood the point the lecturer was making or that this had clarified the meaning of "reflection" and "amplification" in relation to computers.

In order to assess the communicative effectiveness of overt signalling of metaphor in the lecturer-student interactions, it is not sufficient to examine what happens when a lecturer uses a metaphor in this way; it is also necessary to compare this with what happens in other circumstances. In other words, what happens when lecturers use indirect or covert metaphors. In this case, we are confronted with a much more difficult task, because covert metaphors were used with a much greater frequency in the corpus. The following section focuses only on some cases where the conversations revealed some systematicity in the use of indirect metaphors, whether on the part of one speaker alone or of both participants.

4.3 Covert uses of metaphor

A particularly interesting example of covert metaphor use occurred during a conversation between a lecturer (L1 English) and a Spanish undergraduate student (MM) doing an undergraduate degree in English Studies. This conversation was recorded at a university in England in May 2012. The lecturer (NT) was responsible for teaching academic writing to international students (among them, her conversational partner) and, according to her own response to a questionnaire administered to all participants, spoke two foreign languages herself and had three years' experience of teaching international students. The student's level of proficiency was not specified by this participant, as there was no obligatory English language requirement for acceptance at this university as an Erasmus student.

The student entered the consultation with questions about how best to prepare for an upcoming exam for another course she was taking; in particular, how to prepare to answer exam questions. Her specific worry was that, although she had a certain amount of experience in academic writing in English from her home university, this had involved writing fairly long pieces ("three thousand word essay[s]" [UE2:24]) on a specific topic, while in the exam she would be asked to respond to questions about virtually anything related to the course she had taken. The extent of her knowledge at the beginning of this conversation is that "I have to write one thousand words … The half of the essay must be about the theory of the lectures and the rest must be about my own opinion and the seminars" (UE2: 38–40). The ensuing conversation between the two participants developed this topic, with the lecturer providing advice on how to prepare for the exam.

In this conversation, the lecturer used a great number of words and phrases to do with visual perception (SEEING), such as *look* (*at*) (7 times), *see* (13 times),

focus (verb) (4 times), *have a look* (3 times) and *view* (noun) (twice). Furthermore, only three uses of these words and phrases were literal (as in "Come and see me"). In all the other cases, the meanings of these words were identified as either metaphorical (for example, "the other thing is if you **look** hard at the (.) topic" [UE2: 173]) or a conflation of literal and metaphorical senses (for example, "You've got your seminar notes with the extra reading and then **have a look** and **see** was there any debate that came up in the seminar" [UE2: 135-7]). The conflation of literal and metaphorical senses of sight terms was frequent in the corpus as a whole (see MacArthur, Krennmayr, & Littlemore, 2015) and has been discussed elsewhere in relation to UNDERSTANDING IS SEEING as realised by *see* (Deignan & Cameron, 2009). Of course, in an educational context, it is hardly surprising to find conflations of literal and metaphorical senses of words and phrases like these, because many learning activities – and hence the knowledge gained – literally involves sight (reading texts or notes taken in lectures, among other things). What was interesting about the *systematic* use of sight terms (roughly, "SEEING") to talk about the topic of learning was that these metaphors were only used by the lecturer; the student interlocutor did not use any sight terms in her contributions to the conversation. And it is not clear from the transcript whether she actually understood what the lecturer meant with her metaphorical use of these words and phrases. In the following extract from the transcript,[5] which took place 6 minutes after the conversation had started, the lecturer (NT) used sight terms metaphorically for the first time in turn 173 and again in turn 175:

173	NT	exactly and the other thing is if **you look HARD at** (.) the (.) topic (.) and you think (.) there IS no debate here (.) it's just facts (.) it probably isn't going to be on the exam paper
174	MM	okay okay yeah
175	NT	that can help you **focus**
176	MM	yeah
177	NT	a little bit more
178	MM	'cause (.) I'm I was really (.) I really worried about that because (.) sometimes you have a lot of theory but
179	NT	hm
180	MM	okay (.) I can learn it but I don't know what to talk about

5. For reasons of readability, the original transcript of this and other excerpts from these conversations has been greatly simplified, with some backchannels and overlaps removed. For access to the original transcripts, visit http://www.eurocoat.es

The advice she offered casts directing mental attention to the (abstract) object of study in terms of directing gaze to a physical object: if one "looks hard" one perceives it more clearly, and "focusing" involves placing an object in such a position that it can be perceived clearly, because nothing else intrudes in the field of vision. Of course, these metaphorical uses of *look* and *focus* are highly conventional in English[6] and it is not surprising to find them used in this particular context of talk. However, as the transcript shows, the lecturer displayed no awareness of any possible problems the student might have in understanding them, and did not indicate in any way that the words were to be understood metaphorically rather than literally. That is, she used these metaphors covertly. And when we look at this particular context of use, it is not at all clear that the student has understood the advice she is being given. Her reply in turn 180, "I can learn it but I don't know what to talk about", does not seem coherent with what the lecturer has been saying. If the student "looks hard" at the topics she will be able to isolate those aspects that are likely to be the focus of the exam questions ("it probably isn't going to be on the exam paper"). But the student seems to miss the point of the advice: she still does not know "what to talk about".

This example illustrates a covert use of metaphor, and the way that the student responds provides a glimpse into the alignment (in this case, most likely a lack of alignment) between the participants when an aspect of a topic was framed metaphorically. The reiteration of the same or similar words across turns in conversation would show – at the very least – that the speakers are talking about the same thing. Covert metaphors used systematically or only sporadically by one speaker that are not then repeated, reworded or challenged by another participant in the conversation are more likely to occur when there is an absence of "dialogue", or a collaborative co-construction of meanings in conversation.

Another example of covert metaphor use comes from the transcript of a conversation that was recorded at an Irish university. This is a particularly interesting case to compare with the one just considered on more than one count.

The conversation involved a male lecturer (L1 English) who taught English Language and Literature (identified as DC in the transcript). He was speaking to a student (AMT), who happened to be enrolled in exactly the same degree course at the same university in Spain as the student (MM) participating in the conversation already commented on (UE2). They were classmates, both female, and were both in the top 5% of their group, so their educational background was in many ways quite similar. However, the way that they conversed with their lecturers at their respective host universities was qualitatively quite different.

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6. It should be pointed out that, in the corpus as a whole, the Spanish students also used *see, look* and *focus*, although in somewhat different ways from their lecturers. See MacArthur et al. (2015).

In this conversation, which lasted just over 15 minutes, the student and lecturer talked about a written assignment that the student was preparing for the course he taught. They also spoke about another assignment that had already been assessed, and touched briefly on the differences and similarities between course work in Spain and Ireland. In the first episode of the conversation (lasting about 7 minutes) they discussed the choice of topics proposed from a list of possible options (both speakers referred to these on a written text they were both looking at). For reasons of space, this extract cannot be introduced in full here, but the beginning and end are illustrative of the alignment between these two speakers when talking about the assignment. The following is an exact reproduction of the beginning of the transcript, including overlaps in the speakers' talk (signalled between numbered angle brackets < >):

01	DC	so how are you
02	AMT	fine er nervous <laughs> <1> but anyways </1>
03	DC	<1> <laughs> okay <laughs> </1>
04	AMT	and stressed out (.)
05	DC	about the essay?
06	AMT	yes
07	DC	okay what's up (.)
08	AMT	the first thing is that I don't REALly know (.) what to write about <2> I have </2>
09	DC	<2> okay </2>
10	AMT	an idea
11	DC	yeah
12	AMT	I want to write about the question e: about the: the American South (.) again
13	DC	okay
14	AMT	but not using the same text that I used in the first one
15	DC	okay so which question is that (.) oh <3> number </3>
16	AMT	<3> <soft> hm </soft> </3>
17	DC	three is it (2)
18	AMT	yes
19	DC	okay so
20	AMT	but I really don't know how to do that (.) like (.) I know that I want to write about this but I don't know how to **approach** it

Unlike the conversation commented on earlier, here it is the student, not the lecturer, who metaphorically frames the problem she is experiencing with this assignment: she doesn't know how to "approach" it (UI2: 20). This use of a movement metaphor is far from unusual, because in discourse generally, and in academic discourse in particular, words like this are conventionally used in metaphorical ways. Herrmann (2013, pp. 203–204), for example, finds two verbs

of this type (*follow* and *come*) among the top 10 metaphorically-used verbs in the corpus of written academic texts she examined. Here, the verb employed is different, and the specific sense implies that the assignment can be seen as an object which the subject can move towards (perhaps in order to be able to perceive it more clearly).

The conversation continues with a discussion of various texts that the student could choose, and when it seems that the student is close to deciding on a particular short story (Faulkner's "A Rose for Emily"), the lecturer recycles the vehicle term introduced earlier by AMT:

57	DC	well (.) f- <13> what would</13>
58	AMT	<13> <soft><un> xx </un> </soft> </13>
59	DC	be your **approach** to A Rose for Emily what do you think you would like to do there
60	AMT	I don't really know

The student repeats the verb again a little later on (minute 5:30) "so if I wanted to approach it in like <reading aloud> the traditions </reading aloud> or <reading aloud> race relations </reading aloud> that woman (.) would be a good example".

Finally, the lecturer draws this part of their conversation to a close in the following way:

107	DC	it would be up to you to decide whether you have enough in focusing on the two women (.) and their role within the story or whether you also want to look at (.) the issue of race (.) <28> as </28>
108	AMT	<28> but </28>
109	DC	well
110	AMT	would Emily be like the mother (.) would she be like (.) like her
111	DC	hh
112	AMT	in that sense (.) like in the traditional sense of (.) looking at people the way the mother does
113	DC	I think yeah (.) that would be a good way of **pursuing** it (.) the similarities between the mother and Emily (2) <soft> yeah </soft> (1)

"Pursuing" and "approaching" the task of writing an academic assignment are, of course, not exactly the same thing. Both involve metaphorical movement on the part of the writer. With *approach*, the object is understood to be static; in pursuit, however, the object is also in motion. What they have in common, at the same time, is that the goal is not reached. The subject approaching/pursuing does not arrive at the same place as the object; at most s/he can draw close, but reaching the object (whether static or in motion) is an accomplishment not encoded in the basic or metaphorical senses of these verbs. In this regard, both verbs are compatible with each other in the metaphorical frame set up by the student and

developed by the lecturer. What the lecturer's final remark implies, it seems, is that the current discussion on how to go about this particular assignment is only one stage of the "journey" towards accomplishment; the achievement (or not) of a successful piece of writing is a later stage, but these moves towards it are necessary first steps.

What is particularly arresting about this mentoring session is that the student is responsible for the first covert use of a metaphor ("I don't know how to **approach** it") but its development is shared by both interlocutors, in the kind of co-construction of a metaphorical "story" that is likely to be of benefit to this student, who, rather than listening somewhat passively to advice given to her by her mentor, participates actively in thinking and talking about how she should go about this particular task.

An equally interesting contrast between this conversation and that held at the English university commented on earlier involves the metaphorical use of sight terms. Here it is not just the lecturer who uses words and phrases related to vision, but also the student. In fact, it is she again who introduces the first covert metaphor, in this case a sight verb, when discussing her assignment:

37	DC	hh er (.) I don't think that would be the best one to use because really that's set in Harlem and
38	AMT	mhm
39	DC	there isn't a <7> huge </7>
40	AMT	<7> it's not the sa- </7>
41	DC	em representation of the American south in it (.) I think hh maybe do you like the Flannery O'Connor stories (1)
42	AMT	but (.) I don't (.) I **don't see** (.) like which one would be representative of the <8> south </8>

As Deignan and Cameron (2009) have observed in their re-examination of UNDERSTANDING IS SEEING, "metaphorical 'seeing' is not simply a way of expressing 'understanding'; it is more nuanced, more subjective. It is, perhaps, a better way of describing how people actually think than the word 'understand' offers, with its implication that reality can be directly and objectively accessed" (Deignan & Cameron, 2009, p. 240). This subjectivity is apparent in the student's words, which express a problem rather than an achievement ("understanding"). Again, the lecturer displays considerable empathy, picking up this "not see"/not understand in vehicle terms that show how this may be accomplished at various points in their talk about this assignment:

(4) so there's the southern gothic it combines both of those (.) hh and remember in the (.) I think it was in tutorials I was saying if you **look at** her life hh she was probably growing up in the nineteen twenties in that period (UI2: 77)

(5) that'll be fine (.) wit- just **focus** on those connections okay? (UI2: 107)
(6) it would be up to you to decide whether you have enough in **focusing** on the two women (.) and their role within the story or whether you also want to **look at** (.) the issue of race (UI2: 107)

'Seeing' is largely beyond the control of the perceiver and the verb describes an involuntary activity (rather like sneezing or yawning); that is, unless the viewer has his/her eyes shut, s/he cannot control what is in the visual field. Seeing, like knowing or understanding, then, is an accomplishment in most cases beyond the conscious control of the perceiver. However, *seeing* may be achieved by voluntary exercise of sight; directing the gaze towards the object (*look*) or removing distractions or extraneous elements from the visual field (*focus*) allows the object to be perceived. What the lecturer seems to be doing, then, is telling the student how "I don't see" may become "I see", through the systematic use of vehicle terms from the same domain (SIGHT) but which develop the original formulation in a way that foregrounds the student's active engagement in seeking understanding of the phenomenon they are discussing.

5. Conclusions

As found in the academic lectures studied by Low (2010), the academic mentoring sessions analysed here show that lecturers do not tend to overtly signal that they are using language metaphorically, either by flagging it with a word of phrase such as *metaphorically* or *actually* or by explicitly inviting their interlocutors to consider something as though it were something else by using similes, analogies, *A is B* or extended metaphors. This in itself is curious, if one compares it with Cameron and Deignan's (2003) finding that Primary School teachers show great sensitivity to children's developing linguistic knowledge by using tuning devices that direct listeners to a particular interpretation or alert them to the unexpected. The lecturers do not display a similar sensitivity to the international students' incomplete knowledge of English and its conventional metaphors.

As regards the students' understanding of the lecturers' uses of metaphor, I have suggested that systematicity in metaphor use might indicate that speakers are understanding each other. The excerpts from five academic conversations discussed in the course of this article show that covert metaphors may be used systematically. When these covert metaphors are used by only one of the conversational partners (as seen in UE2) and are not repeated, reworded or challenged by the other participant in the conversation, it does not seem that the conversational partners are collaborating in the joint construction of meanings and understandings. Indeed, it is difficult to see that they are talking about the same thing at

all. In this regard, speakers would perhaps need to pay closer attention to how the words they are uttering are being responded to by their conversational partner. This would have allowed the lecturer responsible for teaching academic writing to international students (in the conversation labelled UE2) to communicate more effectively with this undergraduate. On the other hand, students themselves need to participate actively in the joint construction of meanings in conversations such as this. Minimal responses such as "uhu" or "mhm" leave the responsibility for the way that topics are metaphorically framed entirely in the hands of the lecturer. And if students do not participate actively, they convert this type of discourse event into something resembling a lecture – with the problems associated with the use of metaphor understanding in monologic discourse. The opportunity to converse with a lecturer means that metaphorical language use of any kind could be negotiated (as can any other kind of meanings expressed in the discourse) and understandings shared between the participants. In the extracts analysed in the conversations labelled UE2 and US5, neither the lecturer nor the student seemed willing to enter into that kind of negotiation – a somewhat surprising finding if one considers that in university settings, interlocutors are all adults and it is incumbent on both staff and students to collaborate on the progressive intellectual growth of the undergraduate student.

In this regard, the data examined here have shown that, unlike in monologic discourse, such as lectures, the first use of a metaphor, which serves to frame the problem or topic at hand (and which can subsequently be developed by one or both conversational partners) is not necessarily in the hands of the lecturer. The conversation analysed between the Irish lecturer and the Spanish student, which also displayed systematic uses of covert metaphors, is particularly illuminating in this regard. Here it was the student who, on two occasions, offered a metaphorical frame with the use of a movement metaphor (*approach an essay*) and a sight metaphor ("I don't see") which was taken up by the lecturer and expanded. This strategy (conscious or not) on the part of the lecturer afforded the opportunity for him to lock onto the student's current state of knowledge as she expressed it and to develop it, offering an increase to that knowledge base through the elaboration of the metaphor vehicles she used. This strategy requires considerable empathy on the lecturer's part, as well as exceptional language skills, and would probably be beyond the abilities of most. Whether university staff or international students could be trained to use metaphor more interactively – and thus more effectively in face-to-face conversation – is an open question. However, the data analysed here suggest that exploring this possibility would be well worth-while.

As has been seen, lecturers can overtly invite students to think about one thing in terms of another. However, whether this results in successful communication or a learning gain (that is, that the conversational partner is persuaded that

the way the lecturer has metaphorically framed the topic in hand is a pertinent or useful way of thinking about it) seems to depend on the student in question. In two cases (UI5 and US3), the lecturers managed to persuade their interlocutors that it was: the metaphorically-expressed responses to their explanations were completely coherent with the lecturers' formulations. In the other case, no such response was made by the student.

At the same time, it should be noted that overt invitations to see something in terms of something else could, in other circumstances, be regarded as a somewhat coercive means of persuading the students that the lecturer has the key to how a particular concept should be viewed. Metaphorical frames expressed as analogies or through extended metaphors might well be more difficult to negotiate or challenge than more covert invitations to consider something as though it were something else. In the case of the Swedish lecturer (US3), the invitation to conceive the challenges of academic writing in terms of a "writer as guide on a journey metaphor" was expressed quite tentatively: "and I THINK but you need to correct me now because when I read your essay it was sort of a little difficult to follow your train of thought", potentially allowing his conversational partner to challenge what he was saying. But happily, the student seemed to find his (metaphorical) explanation useful, as her response to his words was coherent (metaphorically) with his.

In the extract analysed from the transcript labelled UI5, the overt invitation to think about where sources of knowledge were to be located and the importance of each ("look at it as a pyramid") was similarly well-received by the undergraduate student. However why the lecturer used this overt invitation at this point in the conversation is unclear: she had previously used covert metaphors to express the same idea earlier in the conversation and there was no evidence that the student was not understanding what she was talking about. It may of course simply have been used to emphasize the importance of the point she was trying to make. Alternatively – and this is mere speculation – it may be that she had "heard herself" produce a mixed – and hence confusing – metaphor earlier (*narrow down*, *at the top*) and spelt out the grounds of the metaphorical comparison in order to repair this communicative *faux pas*.

All in all, what the analysis of these conversations shows is that both covert and overt metaphors may be used effectively in conversations between lecturers and their Erasmus students. The data analysed, however, do not provide strong evidence that overt invitations to view one thing in terms of another are communicatively more effective or necessarily better understood than covert ones in the academic mentoring of international students. What does emerge from the data is the importance of the response or uptake of the conversational partner. The alignment of meanings and understanding can be perceived when metaphor vehicles

are re-used or re-worded across turns and speakers. When this happens, speakers are on the same page, so to speak, and talking about the same thing. In contrast, the lack of alignment between conversational partners may be revealed through the lack of systematicity in the use of the same or similar metaphor vehicles by the two participants in the same conversation.

This article has offered a first step in examining the alignment of meanings and understandings between English-speaking lecturers and international students in face-to-face conversations, focusing on the *form* of a linguistic metaphor and its uptake by an interlocutor. I have suggested that systematicity (through repetition, rewording or elaboration) may provide insights into how well speakers from different linguistic and cultural backgrounds understand each other. The small-scale study carried out here has focused only on excerpts from these conversations and would need to be expanded to examine each discourse event in its entirety, tracing metaphor use in relation to the different episodes of the conversations, for example, and to the topics under discussion. However, this first approach to examining metaphor use in intercultural conversations in academic settings points to the need to widen research attention to different genres of spoken academic discourse, previously limited to lectures. The teaching and learning activities that take place in universities include seminars, tutorials or office hours' consultations similar to the ones examined here. As has been seen, in such circumstances, metaphor is used by all participants and analysis of these uses in context may shed light on the alignment of meanings and understandings between speakers of different linguistic and cultural backgrounds. This is an important issue at a time when student and staff mobility is increasing in Europe and when English is becoming ever more frequently used as academic lingua franca. Understanding how metaphor may facilitate or hinder communication between lecturers and students in face-to-face interaction might prove an important contribution to helping the staff and students involved in programmes such as Erasmus (or others that facilitate educational experiences in another university) to become aware of the problems associated with this type of language use, as well as how to use it more effectively in academic conversation.

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The interpretation of metonymy by Japanese learners of English

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Figurative language can present both difficulties and opportunities in cross-linguistic and cross-cultural communication. Previous studies have focused on difficulties in metaphor comprehension faced by speakers of different languages, but metonymy comprehension is a relatively under-researched area. In this chapter, we describe a two-part study exploring metonymy comprehension by Japanese learners of English. In the first part of the study, ten Japanese learners of English were asked to explain the meanings of twenty expressions instantiating a range of metonymy types. Comprehension problems included: the missing of, or misuse of, contextual clues; positive and negative interference from Japanese; 'underspecification'; and a tendency to interpret metonyms as if they were metaphors. The second part of the study focused on the functions performed by metonymy. Twenty-two Japanese learners of English were asked to interpret a set of twenty metonyms, each of which performed a particular function. Metonyms involving humour and irony appeared to be more difficult to understand than ones serving other functions, such as indirect reference and evaluation.

Keywords: metonymy, language learning, rhetorical functions, intercultural communication

1. Introduction

Figurative language can present difficulties to language learners and to people involved in cross-linguistic and cross-cultural communication (Littlemore & Low, 2006). Most of the studies that have explored these difficulties have focused on metaphor. For example, in their exploration of the difficulties that metaphor presented to a group of international students studying on a Foundation Programme at a British university, Littlemore, Chen, Koester, and Barnden (2011) identified a

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number of error types, including over and under-specification, the misattribution of source domain features, and a failure to identify the appropriate target when they explore. Misunderstandings such as these are important, as an inability to understand metaphor can lead to an inability to understand a person's stance towards the topic they are discussing (Littlemore, 2001).

A type of figurative language that has not been investigated in relation to cross-linguistic differences and language learning is metonymy. Metonymy is a cognitive linguistic process whereby one entity is used to refer to another, related, entity (Kövecses & Radden, 1998). For example, the word 'Hoover' can be used to mean vacuum cleaner, via a PRODUCER FOR PRODUCT relationship, or we might say that we 'need a drink', to refer specifically to an alcoholic drink, which would evoke a WHOLE FOR PART metonymic relationship. We might say that we need 'some muscle', when what we need is a strong person to help us move some furniture, thus evoking a DEFINING PROPERTY FOR CATEGORY metonymic relationship, and so on and so forth. Metonymic meanings can be subtle and easily missed by language learners, whose languages will not necessarily contain the same metonymic references as those employed by the target language. Indeed, there is a growing amount of literature (e.g. Brdar & Brdar-Szabó, 2003), exploring cross-linguistic variation in metonymy and its grammatical repercussions across a wide range of languages, and it would not be surprising if this variation were to lead to misunderstandings. However, in the context of foreign language learning and teaching, the complex and context-sensitive role of metonymy tends to be ignored, and there have been no studies to date of the types of misunderstanding that might occur when language students are confronted with metonymy. It would be useful to be aware of the types of problems that metonymy presents to language learners. This information is likely to be particularly useful for language teachers as they can use it to identify and explain the nature and origin of the error to their students.

A few anecdotal instances of metonymy causing confusion have been observed. For example, Littlemore (2001) noted the misunderstanding of the expression 'can-do Civil Servants' by a group of Bangladeshi Civil Servants studying in the UK. They took it to mean 'capable' employees, thus missing the metonymic meaning of being enthusiastic and positive in outlook. One of the students in the study went on to interpret the expression in the following way: "The lecturer feels that the changes made by Thatcher could make it possible to select out a number of abled and working Civil Servants who could perform their assigned duties properly." Here he has focused on the 'ability' of the Civil Servant to do as he or she is told, rather than the possession of the sorts of creative problem-solving skills that are implied by the term 'can-do'. In their study of metaphor comprehension by international students on a Foundation Programme, Littlemore et al. (2011) also

identified a number of instances of metonymy miscomprehension but these were not analysed as the focus of the study was on metaphor.

The problem is likely to be exacerbated by the fact that metonymic motivations are not always predictable and are often highly context-specific. For example, if an adult comes home from work saying that they 'need a drink', in many cases, this is highly likely to be a metonymic reference to an *alcoholic* drink. If the utterance is produced by a toddler, this is less likely to be the case. Moreover, metonymic meanings are often tied to specific phraseological patternings, with which the speakers of other languages may not be familiar. For example, the metonymic expressions 'legged it' (ran away quickly) 'pencilled in' (made a temporary arrangement), and 'eyed up' (looked at appreciatively) all rely on particular combinations of words, and the meanings would be lost if the 'it', the 'in' and the 'up' were not there. This correlation between metonymy and phraseology has been well documented (Deignan, 2005; Goldberg, 2006).

Another, relatively underexplored feature of metonymy is that it can be used to serve a wide variety of functions. Although traditional accounts have tended to focus on its referential function, metonymy has also been found to serve as an important resource in conveying humour, irony, hyperbole, euphemism and dysphemism (Littlemore, 2015).

It has also been found that speakers of other languages are much less likely to 'notice' metonymy than metaphor. Chen and Lai (2012) asked twenty-eight Taiwanese learners of English as a Foreign Language (EFL) and asked them to rate 40 sentences based on their certainty of figurative language use. The students in the study were able to distinguish between sentences with and without figurative expressions, but they were significantly more sure of themselves when judging metaphoric expressions than metonymic ones. Chen and Lai suggest that it may be worth encouraging learners to focus on metonymy in order to develop their levels of figurative competence in the target language.

One group of learners who may find it particularly difficult to understand metonymy are Japanese learners of English. There are three reasons why it is particularly interesting to focus on these learners. Firstly, students in English language classrooms in Japan are not generally encouraged to 'play' with the language or to explore its figurative potential. Secondly, Japanese is so different from English that there are very few opportunities for transfer. Thirdly, the Japanese Ministry of Education, Culture, Sports, Science and Technology is interested in promoting the development of communicative competence in language classrooms throughout Japan. Developing the ability to understand metonymic uses of English is likely to make a contribution to this goal. The aim of the study described in this chapter is, therefore, to investigate the extent to which Japanese learners of English are able to comprehend metonymy.

In our chapter, we describe a two-part study which explored metonymy comprehension in Japanese learners of English. In the first part of the study, ten Japanese students were asked to explain the meanings of twenty expressions instantiating a range of metonymy types. The aims of this part of the study were to establish: what kinds of strategies Japanese-speaking learners of English employ in order to comprehend the metonymic expressions in context, what factors contribute to successful metonymy comprehension, what kinds of errors these learners make when they interpret the meanings of the metonymic expressions, and what factors present obstacles to successful metonymy comprehension. In the second part of the study, which involved twenty-two Japanese learners of English living in Japan, we focused on the functions performed by metonymy. Our aim was to establish whether the function being performed by the metonyms would affect the students' ability to understand them.

2. Methodology

In part 1 of the study, ten Japanese-speaking graduate students studying at a British university (IELTS: 5.5–6.5) were presented with twenty metonyms in context. The metonyms had all been identified in the British National Corpus (BNC) and Webcorp (across a variety of domains). Before being presented to the participants, each of these metonyms had been rated for imageability by a group of five native speakers of English. During the study, the participants were asked to explain the meanings of the metonyms orally and to provide details about how they derived them. To avoid the possibility that participants may have difficulty in explaining their ideas, the interviews were conducted in Japanese. Participants were not informed that the purpose of the study was to explore metonymy comprehension. Each interview was recorded on video. The participants first read the whole text including the metonymic expression, and were asked what the underlined expression referred to in context. Subsequently, they were required to motivate their responses, being asked how they derived the meaning. This series of procedures was conducted for all 20 expressions. If participants had a problem understanding any of the other words in the text, the researcher told them their meanings in context. A full list of the examples used can be found in Appendix 1. The responses were scored by two native speakers of English, with a score of 2 being allocated to those that were deemed 'correct', 1 for those that were 'partially incorrect' and 0 for those that were 'incorrect'. The 'incorrect' and 'partially incorrect' responses were then categorised into error types by the two judges. Littlemore et al.'s (2011) taxonomy of error types for

metaphor was employed as a starting point, and new categories were developed when error types were identified that did not fit into this taxonomy. An assessment was made of the relationship between successful interpretation and the imageability of the items.

In part 2 of the study, 22 intermediate-to-advanced English-speaking, randomly selected Japanese participants, all of whom were located in Japan, were presented with nineteen authentic metonyms, given in context. The idioms had been identified in the BNC and in a variety of domains on the Web, using Webcorp Meanings of low frequency, or unfamiliar words (such as 'anorak'), which had been identified in a pre-test as being potentially difficult for these participants, were written below the words in Japanese in advance. The metonyms were classified according to the function they performed in context. The functions included in the study were irony, evaluation, indirect reference (which included euphemism, dysphemism and hyperbole) and humour. Participants were not informed of these functions and the metonyms were presented in a random order. The participants were asked to write down what they thought the expressions meant.

A full list of the metonymic expressions in their contexts, as they were presented to the students, can be found in Appendix 2. Here we discuss some of our explanations for metonymy choice. The first is an example of a metonymy serving an **indirect reference** function (in this case euphemism):

(1) 'Take all the time you need. When you've finished, why not pop along and join us? I'll keep the coffee hot and try to save you a biscuit or two. Niall may even have surfaced by the time you join us.'

'I'll be there. By the way, is there somewhere where I can freshen up?'
'Sure, at the end of the ward and along the corridor.'

Here, the generic process of 'freshening oneself up' is deliberately vague in that it metonymically represents the more specific activities that one might actually intend to do in the bathroom. These would not only be more embarrassing should they be explicitly stated, but also likely break the maxims of quantity and relation, or relevance. As opposed to the common, simpler alternative "go to the bathroom", "freshen up" can metonymically serve in the broader sense of not only representing using the toilet, but also reapplying make-up, brushing your teeth, applying deodorant or perfume, changing your shirt, and so on. This is clearly more information or detail than the listener requires, and so "freshen up" is not only face-saving or euphemistic, but also 'linguistically economical'; a fundamental feature of metonymy.

Here is an example of a metonymy performing **irony**:

(2) Santa Barbara and many other bike-friendly cities have bike racks on every block of their downtown, and beautification projects that don't make life ugly for bicyclists. As a result, they have more people bicycling. Hey, it isn't brain surgery. Provide facilities that make bicycling easy and pleasant, and people will do it.

In this example, "it" (i.e., the matter of improving conditions for cyclists) is contrasted with brain surgery, which stands metonymically for a complicated and difficult task. Here, however, in the intended meaning, the opposite reading is taken; that the task is not related to brain surgery in its level of difficulty or intricacy. It is instead thought to be rather simple and should not therefore be considered otherwise.

Here is an example of a metonymy performing **evaluation**:

(3) Shortly before nine there was a general hubbub down the corridor and the Suits began to appear from their conferences, most of them holding styrofoam cups of coffee.

As a set of generic, typically formal clothing, a suit as a non-human entity can metonymically represent the human wearer such as a business or other professional person. Unlike uniformed people, however, suited figures are fairly indistinguishable from the general population. This deliberate and anonymising use of "the Suits", instead of a more neutral "the attendees" or "the business people", points to the writer's negative sentiment. It is implied that those suited have no personal identity and en masse simply make up a sea of suits. Here an additional contextual clue is the deliberate inclusion of the cup material, Styrofoam – a typically 'cheap' and unsophisticated one (as opposed to china or even paper).

The next example is of a metonymy performing **humour**:

(4) "Local high school drop-outs cut in half"

In this newspaper headline there exists a double metonymic reading frame. The structure is such that the reader or hearer is (intended to be) amused by entertaining two possible interpretations. The more conventional of these interpretations is that the number of high school drop-outs has reduced by 50%, and the more unexpected that the students themselves have been physically been cut in half. The metonymy here lies in the fact that the apparently uncountable construal, 'local high school drop-outs' operates as metonymic shorthand for the countable construal, 'the number of high school drop outs'. Clearly an instance of dark humour, this may evoke dramatic or comical images of frustrated teachers or parents slicing students in half through sheer frustration at their lack of diligence in study.

Where there was ambiguity over the functions being performed by the metonymic expressions, the two judges conferred and other corpus examples were considered. For example, in the BNC, there are 27 instances of the term 'the suits' and of these, eight are metonymic. In seven of these eight cases, the meaning is clearly derisory. The functional classification of the 19 investigated metonyms is shown in Appendix 3. Also shown are their types, and in the third column their closest correspondences with Kövecses' (2002) and Radden and Kövecses' (1999) proposed categories. Agreement on the score was reached after consultation with the corpus in 100% of the cases.

Following successful piloting and refinement of the test, it was sent by email to 22 'intermediate to advanced' English speaking Japanese participants, all located in Japan at the time. The questions were administered to the participants and follow-up interviews with 11 of the participants were carried out by Skype video call to discuss how participants reached their answers; allowing for exploration of particular problems and whether metonyms were known or novel. Participants were assured that the interviews were being audio recorded for the purposes of results analysis only.

In order to quantify the data gathered, a scoring system was employed ranging from four points awarded for "full semantic and full pragmatic comprehension", down to zero points for "semantic misunderstanding so failed pragmatic understanding or no answer attempted". This is arguably subjective, but care was taken to examine all 22 sets of data repeatedly and thoroughly in an iterative (or 'trial and error') process in order to best grade and scale answers. It was anticipated that any semantic misunderstandings would be minimal, since the British National Corpus (BNC) examples were chosen carefully, piloted with similar level participants and glossed for particularly difficult words.

3. Findings

The findings from both parts of the study indicated that the students experienced a number of difficulties understanding metonymy in English. In part 1 of the study, we found that many of the errors that students made in trying to interpret the metonyms were similar to the types of errors identified for metaphor by Littlemore et al. (2011). These included 'under-specification' (providing too little information), focusing on the wrong part of the ICM (as we saw above), misinterpreting contextual cues, and misinterpreting the syntax. Other errors related more closely to the fact that the study was looking at metonymy, rather than metaphor. Most notably, a number of students interpreted the metonymic expressions as if they were metaphors. One example of this is the following:

(5) It was obvious to everybody in Rome that he had to *marry money* → interpreted as meaning 'to earn big money'

Here the intended metonymic component was not explained. Instead, the participant tried to interpret the word 'marry' metaphorically in that, he thought 'to marry' corresponded to 'to need something immensely.'

Another example of this phenomenon is the following:

(6) his younger brother and sister, who […] seemed to *depend on the bottle* → interpreted as 'to be attached to an obstacle/weak point'

Post-task discussion with this participant revealed that he had interpreted 'depend on the bottle' as referring to 'an obstacle/weak point' because he thought that it seemed similar to the term 'bottleneck' which is motivated by metaphor in English. Another example is as follows:

(7) his younger brother and sister, who […] seemed to *depend on the bottle* → interpreted as 'to depend on their appearances'.

Here, the student explained that the bottle was a thing which hides its contents so it referred to 'appearance' which might hide human nature.

This confusion between metaphor and metonymy is perhaps a reflection of the fact that the two tropes often overlap and are often difficult to disentangle from one another (Barcelona, 2002; Goossens, 2002). Indeed, it has even been argued that the distinction between the two is somewhat artificial as both can involve the same set of overlapping cognitive processes (Barnden, 2010).

Some of the inappropriate metaphorical interpretations could be attributed to cultural transfer from Japanese, as we can see in the following example:

(8) Whoever it is says you're still *nosing about in business* which doesn't concern you → interpreted as 'to be weary of business'.

The meaning provided by this student appears to be based on the Japanese expression "hana ni tsuku" ("to stick to one's nose") which metaphorically implies to 'to be weary of something'.

Other types of errors included cases where the students conducted an apparently wrong lexico-grammatical analysis of the intended metonymical component, as we can see in the following example:

(9) Being *mothered* by a grandparent was certainly not always a happily remembered experience → interpreted as 'becoming mother'

Here the participant wrongly analysed this expression into the combination of gerund + adjectival.

In other cases, the students simply stayed within the vehicle subject matter and did not attempt any explanation of the metonymic component, as we can see in the following example:

(10) Dobson and his mob just *laughed you off the street tonight* → interpreted as 'to make fun of you on the street'

In other cases, the students accessed the wrong metonymy type in order to explain the expressions, as we can see in the following example:

(11) a lone blues *trumpet* was improvising → interpreted as 'a lonely blues sound was improvising'

Here the participant interpreted it as 'sound' by means of metonymy type INSTRUMENT FOR PRODUCT in English. The actual metonymy that is being evoked by this expression is INSTRUMENT FOR MUSICIAN, which is very common in English and which can be found in expressions such as the following:

(12) It went with the sacking of the *first violin*, Marie-Alexandre Guenin (BNC)

Another example of a student evoking the wrong metonymy type is as follows:

(13) In the garden you will see them *nosing around* trying to find a new place to dig a hole. → interpreted as 'to growl'.

Here, the student explained that a nose produces a growling sound, so he wrongly understood it as an instantiation of INSTRUMENT FOR ACTION metonymy in English.

When the students were presented with the more subtle cases of metonymy, they tended to try and interpret them more as prototypical metonyms, as we can see in the final example:

(14) Just as he was about to *open the beer* the doorbell rang. → interpreted as 'to start a party'

This is not the intended meaning of the sentence in this context although one could possibly see it as a plausible explanation. The participant explained that parties generally start with opening the bottle(s) of beer, thus evoking a SUB-EVENT FOR WHOLE EVENT metonymy. This participant was able to understand the metonymic meaning of 'open the beer', but he extended its metonymic meaning too far. Another way of explaining this interpretation is to see it as an instance of 'metonymic chaining' (Dirven, 2003) where one metonymy leads on to another. In other words, he identified two closely related metonyms, each of which moved the meaning further away from the 'basic senses' of the words in the sentence.

Other types of answer included those that were unclassifiable because of poor expression, as we can see in the following example:

(15) […] vehicles *garaged* in a certain Rating District → interpreted as 'a certain rating garage'

Here it was impossible to understand what the participant meant by this response.

In other cases, students simply misunderstood the meaning of the vehicle term, as we can see in the following example:

(16) When the Cordorys had finished *landscaping* their garden → interpreted as 'to dig up their garden'

In line with Littlemore et al.'s (2011) findings for metaphor, we identified cases of 'underspecification', an example of which is as follows:

(17) Ludens *tiptoed* into the kitchen → interpreted as 'to enter into the kitchen'.

The interpretation is valid in this context, but 'to tiptoe' conveys more meaning than simply 'to enter'.

The main differences between these findings and those made by Littlemore et al. (2011) for metaphor were that, in this study, students tended to interpret metonyms as if they were metaphors and carried out unnecessary metonymic chaining. These are both cases of 'over-interpretation', suggesting that students may not be primed to identify metonymy and interpret it as such. This may be a result of the fact that, of the two tropes, metaphor is far more widely known and people generally tend to know roughly what it is and how it should be dealt with. Metonymy is much more subtle and nuanced than metaphor and may thus present more problems to learners.

Somewhat surprisingly, the students in Part 1 of the study appear to have coped well with cross-linguistic differences in the syntactic patterns that accompany metonymy. For example, English makes extensive use of denominal verbs whose meaning is metonymically related to the corresponding nouns, such as the use of 'summered' in the following example:

(18) An injured bird also *summered* at Darwell Reservoir in 1958. (BNC)

This construction does not exist in Japanese, but it did not present significant problems to the participants in the study. There are interesting parallels between this finding and Piquer-Píriz (2008)'s finding that syntactic form was not a distracting factor for young Spanish learners of English when accessing the figurative meaning of metonyms. Piquer-Píriz (2008) found that the majority of the children who participated in her experiment had no problems comprehending metonymic multiword expressions (e.g. *'give me a hand'* and *'I didn't open my mouth'*) whose meanings were extended based on the salient functions of these body parts, even in cases where there was no corresponding expression in their native language. This is probably because these metonyms involve the extension

of salient features and constitute worn metonymic relationships, such as the PART FOR WHOLE and ACTION FOR RESULT relationship.

The participants in our study were much more likely to work out the meaning of metonymic denominal verbs when the action they denoted reflected a central characteristic of the noun. For example, they experienced very few problems with the metonymic expressions *be garaged,* and *be mothered*, as they reflect the characteristics that are central to the corresponding nouns (i.e. garages are places where cars are kept and mothers look after children). In contrast to this, the metonym 'to *landscape* the garden' presented far more problems. All of the participants in the study thought that this meant 'to have a view over a garden'. These participants appeared to be employing an OBJECT FOR ACTION metonymy, which is not involved in the English meaning of 'to landscape'. In English, the meaning of this expression is to change the appearance of a piece of land, and none of the participants got this. Some participants went on to infer that it meant 'to plant trees', thus evoking a RESULT FOR ACTION metonymic relationship. This is closer to the actual meaning of the expression, though the participants were a little too specific in their explanation. Landscaping a garden may well involve planting trees, but it is equally likely to involve lots of other things, such as moving earth, planting flowers and chopping down trees. In this example, the participants wrongly focused on different parts of the Idealised Cognitive Model (ICM) (see Lakoff, 1987; Langacker, 2009). Because the meaning of 'to landscape' is not related to a central feature of a landscape, the participants found it harder to work out the meaning. Therefore it appears that, if the action that is being referred to is more salient in relation to the basic sense of the vehicle term, learners are more likely to interpret the item successfully. We also investigated whether or not there was a relationship between successful interpretation and the imageability of the items. Using Pearson's R, we found a significant correlation ($p < 0.05$; $R = 0.197$), indicating that it is easier to work out the meaning of highly imageable metonyms.

As we said above, the aim of part 2 of the study was to explore the extent to which the function being performed by the metonym affected comprehension. In our initial analysis, we found a similar set of problems to those found in the first part of the study, which included under-specification, a tendency to become distracted by contextual features, the mistaking of metonymy for metaphor, and positive and negative interference from cultural differences or preferences. When we explored the levels of metonymy comprehension in relation to the functions being performed by the metonyms, we found that metonyms involving humour were the least well understood (42.42% average comprehension rate). Those involving irony were the next least well understood (56.11% average comprehension rate). Those involving indirect reference and evaluation were the easiest to understand (with average comprehension rates of 62.5% and 63.38% respectively). A full list

of the average comprehension rates per item and per function can be found in Appendix 4.

The difficulties experienced by the participants in understanding humour and irony can be partially explained by the extent to which these tropes violated the cognitive principles underlying 'typical' vehicle selection that were identified by Radden and Kövecses (1999). Radden and Kövecses (1999) argue that principles such as HUMAN OVER NON-HUMAN, FUNCTIONAL OVER NON-FUNCTIONAL, and STEREOTYPICAL OVER NON-STEREOTYPICAL are key factors in determining vehicle choice in metonymy. When these 'rules' are broken, it may be more difficult to find meaning, particularly in a foreign language whose points of reference are different from one's own. In humour and irony, cognitive principles such as these tend to be reversed. It is important not to set too much store by these figures, as other features, such as the imageability of the items, the clarity of the contextual cues and the congruency of the metonymic expressions with the participants' first language may all have affected the outcome. However, what the findings do indicate is that it is important to factor in the function being performed by the metonym when testing comprehension amongst language learners.

A number of cultural factors appeared to interfere, both positively and negatively, with the successful interpretation of metonymy. For instance, the sentence 'Billy's eyes popped out as she kissed Yanto' was understood by 85.2% of the participants, a finding which could perhaps be attributed to the fact that the same expression exists in Japanese. Another sentence that was well understood was: 'the Suits began to appear from their conferences', which was understood by 76.5% of the participants. In Japan the notion of the smart-suited but somewhat conventional 'salaryman' is ubiquitous. Metonyms that were less well understood included 'Why am I such an anorak?' which was only understood by 37.5% of the participants. An anorak, characterised as a plain, indistinguishable item of clothing lacking in style, has come to be associated with a certain stereotypical wearer: the 'trainspotter'. 'Trainspotters' are originally a British phenomenon, and their association with anorak-wearing only really occurs in Britain. Usually middle-aged men, they stand on train platforms excitedly logging train times and taking photos of the vehicles. Social stigma developed to hold them with some disdain for their peculiar fascinations. The trainspotter's characteristic item of clothing is the anorak, therefore, over time the anorak has come to metonymically represent any person overly fond of inane details that would not interest the majority. Rather than being admired for being an expert in something, they tend to meet with social derision, although as in the above instance, 'an anorak' can also be used comically in self-deprecation.

The problem here is that understanding an anorak to mean a nerd or a geek involves detailed cultural information about anoraks and the sort of people who

wear them, and the sorts of 'semi-autistic' behaviours and hobbies that these people traditionally engage in, such as train-spotting. For the average Japanese person, there is no reason why an anorak should refer to anything other than an item of outdoor clothing. If a CLOTHING FOR PERSON metonymy were involved, they might think of a mountaineer or a person who likes the outdoor life, as these could be described as central features of anorak-wearers. The meaning intended in the above example draws on a particular, highly peripheral characteristic of an anorak-wearer.

Another item that was less well understood, possibly for cultural reasons was the sentence: 'all the pressures she was facing caused her to hit the bottle again', which was only understood by 36.4% of the participants. Here the problem may lie in the fact that the protagonist in the example was female. In Japanese society, getting drunk is more socially acceptable for men rather than for women and the fact that a woman is mentioned may have gone against the expectations of the participants and thus been misleading for them. The word 'hit' may also have been problematic here, as the participants may not have known its relevant sense in this context. Thus we can see that a range of factors contribute to the misinterpretation of metonymy by Japanese speakers of English and that these factors combine linguistic and cultural features.

4. Conclusion

This study has shown that metonymy does indeed present problems to Japanese learners of English. The range of problems that it presents are comparable to those for metaphor, with some exceptions, notably the fact that metonymy is often interpreted as if it were metaphor. Words whose metonymic meaning relied on core features of the basic sense were more easily understood than those whose metonymic meaning relied on peripheral features. Metonyms involving evaluation or different forms of indirect reference were easier to understand than those involving humour or irony. Future studies could usefully explore the issue with a wider range of participants from more linguistic backgrounds. They could also look at the phenomenon from a developmental perspective. However, our findings are sufficient to suggest that it may be worth focusing on metonymy, and the functions it performs, in Japanese English language classrooms, and that a possible way to introduce the topic might be to discuss the use of metonymy in Japanese, and then to focus on cross-linguistic variation in metonymy types.

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APPENDICES

Appendix 1. The examples of metonymy that participants in Part 1 of the study were asked to explain

(1) Being mothered by a grandparent was certainly not always a happily remembered experience, and for one illegitimate Scots girl it generated a lifetime of mutual bitterness.

(2) Cats hate to bury their faeces in a place where they have recently done so. In the garden you will see them nosing around trying to find a new place to dig a hole.

(3) 'It's not your job to think.' Bill's voice betrayed genuine anger. 'We're still getting calls here about you, anonymous calls. Whoever it is says you're still nosing about in business which doesn't concern you.'

(4) Rocks close under the window were covered with grey and orange lichens; further out they were encrusted with barnacles and beyond that they were blanketed with brown seaweeds, their slimy fronds gleaming in the sunshine.

(5) When the Cordorys had finished landscaping their garden, they decided to add the finishing touches and brighten it up by designing and making their own garden furniture.

(6) The rooms, painted green, were dark and damp and smelled of alien growths. Ludens tiptoed into the kitchen and was amazed to see two mugs on the table with remnants of tea in them.

(7) 'Look son, you'll have to act a bit more positively. Be a bit firmer with the neds or they'll walk all over you. Dobson and his mob just laughed you off the street tonight and we can't afford that.' It was true of course. Dobson was an expert at knowing just how far he could go without actually breaking the law. Martin had confronted him – and lost. It was Dobson and his gang who were left on the street, laughing, while he had to slink shamefully away.

(8) Since 1965 the species has been noted in each month between October (21st) and May (30th), but there are earlier records for July (31st, 1959), and September (27th-30th, 1958). An injured bird also summered at Darwell Reservoir in 1958.

(9) The continuing rise in claims costs has made it necessary to increase the Society's premium rates for all classes of motor policy. For some policyholders the increase is partially or even wholly offset by adjustments made to the premiums for (a) certain models of motor car for which the Rating Group has been reduced and (b) vehicles garaged in certain Rating Districts where the claims experience has been particularly satisfactory.

(10) Somewhere in the formless murk, a lone blues trumpet was improvising around 'Love for Sale'. It was an agonised wailing, bluesy and brilliant.

(11) The wind seems to whistle through the doors and windows.

(12) Nothing is sacred; when the Princess of Wales bought a Mercedes in February he accused the Royals of 'showing contempt for British workers while living off the fat of the land'.

(13) Dressing for television is covered at length (ties made from madder silk and with an Olney knot at the best for keeping the microphone in place). And there is a good account of the infamous Nixon/Kennedy TV debate when Kennedy's aide even turned up the heat in Nixon's dressing-room to make him sweat more.

(14) Rufus had suggested to Adam that he sell something out of the house, a piece of china or some silver. There were almost more antique and second-hand shops in some of those villages than there were houses.

(15) On December 18th Hoare resigned, to be replaced by Anthony Eden, widely seen as a champion of the League. The overthrow of a Foreign Secretary was a considerable achievement for a popular agitation, but this was to be the limit of the peace Ballot's success. During the months that followed, as Mussolini bombed and gassed the Abyssinians into subjection, no serious attempts were made by the British Government to implement effective sanctions.

(16) 'Where are you parked?' 'Just down the road. […]'

(17) She knew that the prince was not well off, he never made any bones about it. It was obvious to everybody in Rome that he had to marry money. He had his widowed mother living with him and two sisters who had to get husbands; both Mr James and Constanza say that it would have been considered an almost monstrous act of selfishness if the prince had insisted on marrying one of the Montecativi or Roccarosa girls for their *beaux yeux*.

(18) Unlike both his younger brother and sister, who clearly suffered from an inability to form stable ties with other people and seemed to depend on the bottle to bolster their self-assurance, Valentin's reputation was almost that of a good prince in a fairy-tale.

(19) He opened the freezer and helped himself to a cold beer and the last of the chicken drumsticks from the packet he had bought earlier in the week. He tossed the empty packet onto the overflowing bin in the corner of the room and sat down at the table. Just as he was about to open the beer the doorbell rang. He shook his head in despair then got to his feet and went to open the door.

(20) US officials insist that Washington is not pushing the idea, but confirmed that it will be a topic of conversation when the chairman of the Federal Reserve, Alan Greenspan, visits Moscow this weekend.

Appendix 2. The examples of metonymy that participants in Part 2 of the study we asked to explain

(1) 'I believe that by doing sports, eventually I won't want to smoke,' she predicts. This newfound health regime (*health regime:* 健康管理の方法) has, she says, changed her life. 'I have more energy and I'm thinking clearer […]'. She says she also sleeps better and wakes up with a clearer head which is not the sort of image she portrayed a couple of years ago when all the pressures she was facing caused her to **hit the bottle** again.

(2) 'Take all the time you need. When you've finished, why not pop along and join us? I'll keep the coffee hot and try to save you a biscuit or two. Niall may even have surfaced (*surface:* 現れる) by the time you join us.'

'I'll be there. By the way, is there somewhere where I can **freshen up**?'

'Sure, at the end of the ward and along the corridor.'

(3) "Enraged cow **injures farmer with ax**" (*enraged*: 激怒した, *ax*: 斧).

(4) "Local high school drop-outs **cut in half**" (*drop-outs:* ドロップアウト).

(5) "Yes, this is the Pokémon phenomenon that has swept the UK. One school in Berkshire has banned Pokémon after instances of bullying *(instances of bullying:* いじめの事例) to obtain the rarer cards. The bullying has finally stopped however, **now that Mr. Hunt the geography teacher has the complete set**."

(6) He walked into the bedroom and began to dress. Fumbling (*fumble:* 探し回る) with his black tie, he swore (*swore:* 悪態をついた) in frustration. 'Christina, help.' She came into the bedroom on his third plea (*plea:* おねだり). 'I can't tie the damn thing; I'm **all fingers and thumbs**.'

(7) The three other members of her party looked around in surprise as the blonde gave a squeal of delight (*squeal of delight:* 喜びの悲鳴) and walked unsteadily across to Yanto. Billy's **eyes popped out** as she kissed Yanto on the cheek and flopped into a chair beside him. 'My hero,' she laughed, and looked at Billy.

(8) Outside in the street I took her hand for the first time.

'It's been such a comfort talking to you, Alison. You don't know how it's helped. Will you…?'

'I'll do everything I can,' she said, freeing herself. I nodded meekly. (*nodded meekly*: 無気力にうなずいた) 'Don't look so glum! (*glum:* 陰気な)' she added. 'It's not the **end of the world**.'

And off she went to collect her son from St Philip and James Primary School.

(9) Santa Barbara and many other bike-friendly cities have bike racks on every block of their downtown, and beautification (*beautification:* 美化) projects that don't make life ugly for bicyclists. As a result, they have more people bicycling. Hey, **it isn't brain surgery**. Provide facilities that make bicycling easy and pleasant, and people will do it.

(10) The Saint that expelled (*expelled:* 追い出した) all the snakes from Ireland […] This Sunday the 17th of March is St Patrick's Day, celebrated world wide, where **every man and his dog** seems to lay claim (*lay claim:* 主張する) to an Irish connection.

(11) 'Kindly explain.'

With a sigh of impatience (*with a sigh of impatience:* めんどうくさそうにため息をついて) Jake leaned back in his seat and ran his fingers through his thick dark hair.

'OK, I'll **spell it out** to you, if that's what you want. My father left Kirsty a considerable amount of money to be held in trust (*trust:* 信託基金) until she reaches eighteen…' He paused. 'Do I really need to go any further?'

(12) Critically review your own experience and learn. Attend training courses and learn. Do not attempt to broaden your boundaries by becoming an expert in everything. **Keep your mouth shut** when another person talks. Listen carefully, clarify with questions if necessary, but don't challenge that person's expertise.

(13) Dishonoured detective Nick Conklin (Michael Douglas) and his easy-going partner Charlie Vincent (Andy Garcia) escort a desperately ruthless (*ruthless:* 冷酷な) yakuza from New York to Osaka. When he is **snatched from under their noses**, (*snatch:* つれさる) they join forces with the Japanese police to recover their man.

(14) A shy, self-effacing man (*self-effacing:* おとなしい), Williams was self-taught, and showed an independent and determined intellectual curiosity. He had a **good ear** for language, and was a talented scholar, translator, and lyric poet.

(15) The shops here are very good, but Dana is inclined to **turn her nose up** at anything outside London or Paris, so I imagine an hour could see her back at the flat.

(16) Shortly before nine there was a general hubbub (*hubbub:* がやがやしていた) down the corridor and **the Suits** began to appear from their conferences, most of them holding styrofoam (*styrofoam:* 発砲スチロール) cups of coffee.

(17) She stood and picked up her jacket from the back of her chair.

'Where you off to?'

'I'm going to see how the search is going on.'

'Leave that to **the uniforms**, they'll let us know soon enough if they find something. It's bitter cold out.'

(18) Cutlery (*cutlery:* 食卓用の金物) consists of knives, forks and spoons, right? Wrong – only things that cut, (shears (鋏), sickles (鎌) and scissors (はさみ) as well as knives) are properly termed cutlery. Another misapprehension is that stainless steel (*stainless steel:* ステンレスの鉄) is so called because it does not stain; in fact, the name merely denotes that it stains less than other steel. Why am I such **an anorak** on the subject of cutlery?

(19) Less than two minutes after becoming Mrs Tim Laurence, she stood beside him on the steps of Crathie Church, Balmoral and pointed to the nearest Range Rover. 'Get in the car,' she told her husband. The words were said, not harshly (*harshly:* 厳しく) but firmly (*firmly:* しっかりと), according to one guest at the most unconventional (*unconventional:* 型破りな) royal wedding ever. 'There's no doubt who'll **wear the trousers** in that house,' said one elderly lady watching with amusement.

Appendix 3. Classification of the metonyms used in Part 2 of the study

Metonymy	Type	Nature of metonymic relationship	Primary function
not the end of the world	(NEGATION OF) LARGE-SCALE EVENT FOR SMALL-SCALE EVENT	SPECIFIC FOR GENERIC	Irony
it isn't brain surgery	(NEGATION OF) COMPLEX PROCESS FOR SIMPLE PROCESS	SPECIFIC FOR GENERIC	Irony
every man and his dog	SPECIFIC MEMBERS FOR ALL MEMBERS	SPECIFIC FOR GENERIC/ MEMBER OF A CATEGORY FOR THE CATEGORY	Irony
spell it out	LITERAL SPELLING FOR SIMPLIFIED EXPLANATION	SUBEVENT FOR WHOLE EVENT	Irony
a good ear	BODY PART FOR ABILITY	INSTRUMENT/ORGAN OF PERCEPTION FOR THE *PERCEPTION	Evaluation
turn her nose up	PHYSICAL ACTION FOR (NEGATIVE) ATTITUDE	PHYSICAL/BEHAVIOURAL *EFFECT FOR EMOTION CAUSING IT	Evaluation
the Suits	CHARACTERISTIC CLOTHING FOR CATEGORY OF PERSONS	DEFINING PROPERTY FOR CATEGORY/ POSSESSED FOR POSSESSOR	Evaluation
the uniforms	CHARACTERISTIC CLOTHING FOR CATEGORY OF PERSONS	DEFINING PROPERTY FOR CATEGORY/POSSESSED FOR POSSESSOR	Evaluation
an anorak	CHARACTERISTIC CLOTHING FOR CATEGORY OF PERSONS	DEFINING PROPERTY FOR CATEGORY/POSSESSED FOR POSSESSOR	Evaluation
wear the trousers	CHARACTERISTIC CLOTHING FOR CATEGORY OF PERSONS	DEFINING PROPERTY FOR CATEGORY/POSSESSED FOR POSSESSOR	Evaluation
hit the bottle	CONTAINER FOR CONTENTS	CONTAINER FOR CONTENTS	Indirect reference (euphemism)
freshen up	RESULT FOR ACTION(S)	RESULT FOR ACTION	Indirect reference (euphemism)

Metonymy	Type	Nature of metonymic relationship	Primary function
keep your mouth shut	PHYSICAL ACTION FOR (CEASING OF) VOCAL PRODUCTION	*SUBEVENT FOR WHOLE EVENT	Indirect reference (Dysphemism)
snatched from under their noses	PROXIMITY TO FACE FOR PHYSICAL PROXIMITY AND VISIBILITY	*SUBEVENT FOR WHOLE EVENT	Indirect reference (Dysphemism)
all fingers and thumbs	BODY PART FOR (LACK OF) ABILITY	PHYSICAL/BEHAVIOURAL EFFECT FOR *EMOTION CAUSING IT	Indirect reference (Hyperbole)
eyes popped out	PHYSICAL/BEHAVIOURAL EFFECT FOR EMOTION CAUSING IT	PHYSICAL/BEHAVIOURAL EFFECT FOR EMOTION CAUSING IT	Indirect reference (Hyperbole)
Enraged cow injures farmer with ax	DOUBLE (HUMOROUS) METONYMIC READING FRAME	POSSESSION BY COW FOR POSSESSION BY FARMER	Humour
Local high school drop-outs cut in half	DOUBLE (HUMOROUS) METONYMIC READING FRAME	COUNTABLE FOR UNCOUNTABLE	Humour
Pokémon and Mr. Hunt story	MOVE TO ALTERNATIVE (HUMOROUS) METONYMIC READING FRAME	BULLYING BY TEACHER FOR BULLYING BY CHILDREN	Humour

Appendix 4. Comprehension rate per item and average comprehension rate per function

Item	Comprehension rate %	Average comprehension rate per function %
Not the end of the world	50.76	Irony: 56.11
It isn't brain surgery	47.73	
Every man and his dog	60.61	
Spell it out	65.34	
A good ear	98.86	Evaluation: 63.38
Turn her nose up	44.32	
The Suits	76.52	
The uniforms	46.97	
An anorak	37.5	
Wear the trousers	76.14	
Hit the bottle	36.36	Indirect reference: 62.5
Freshen up	59.09	
Keep your mouth shut	92.05	
Snatched from under their noses	34.09	
Fingers and thumbs	68.18	
Eyes popped out	85.23	
Enraged cow	44.32	Humour: 42.42
Cut in half	26.14	
Pokemon	56.82	

Methodological triangulation in the study of emotion

The case of 'anger' in three language groups*

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This chapter explores the value of Conceptual Metaphor Theory (CMT) in the interdisciplinary study of emotion. The insights provided by a quantitative, corpus-based analysis of anger metaphors in three languages (English, Spanish, Russian) are compared to those obtained from two other methodologies of a more psycholinguistic kind: a feature-rating and a labelling task. The three methodologies are used to test in language several hypotheses on cross-cultural differences in anger experiences derived from earlier findings in emotion psychology. The three methods are found to be complementary and provide convergent evidence that support the hypotheses, with each method contributing additional pertinent data on some of the issues addressed. We discuss the contribution of CMT, its relative importance and specificity, and highlight several methodological and analytical adaptations that CMT studies should undergo for its results to become more informative to other disciplines in the study of emotion.

Keywords: emotion, anger, conceptual metaphor, Cognitive Linguistics, cross-cultural psychology, English, Russian, Spanish

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1. Introduction

This chapter explores the value of Conceptual Metaphor Theory (CMT) in the interdisciplinary study of emotion. Since the publication of foundational works on emotion metaphors by Lakoff and Kövecses (1987) and Kövecses (1986, 1990), emotion has become a particularly salient topic in CMT research. Over the past quarter of a century, this unwavering popularity has resulted in a proliferation of CMT studies across a wide variety of languages, both Indo-European (e.g., Apresyan & Apresyan, 1993; Soriano, 2005) and non-Indo-European (e.g., Taylor & Mbense, 1998; Yu, 1995), on both so-called basic emotions, such as anger or sadness (Kövecses, 2000; Barcelona, 1986) and social emotions, such as shame, pride, or love (Barcelona, 1995; Kövecses, 1986; Tissari, 2006). Synchronic research on emotion metaphor has been paralleled by diachronic work (e.g., Geeraerts & Grondelaers, 1995), and investigations of the grammatical properties of emotion metaphorical expressions (e.g., Glynn, 2002) have co-evolved with research on emotion metaphors in different discourses (e.g., Beger & Jäkel, 2009).

Given this long and rich history, it would be reasonable to expect CMT to be a particularly interesting linguistic paradigm for the affective sciences, a rapidly growing interdisciplinary field that advocates and implements cross-disciplinary approaches to address the multifaceted nature of emotion. In the affective sciences, the programmatic statement is that any further advance in our current understanding of emotion is only possible through a close collaboration between disciplines and the use of mutually informative methodologies. The importance of language and language-based methodologies has been frequently noted by many emotion scholars: "[…] emotions are not themselves linguistic things, but the most readily available nonphenomenal access we have to them is through language" (Ortony, Clore, & Collins, 1988, p. 8).

However, CMT has not properly joined the affective sciences yet, and the reasons for the current lack of dialogue are partly underpinned by the limitations in CMT itself. One of these limitations is the scarcity of studies attempting to investigate the degree to which the representation of emotions suggested by metaphor coheres with (or diverges from) the descriptions advanced by expert theories of emotion and cross-cultural emotion psychology. While some attempts have already been made in this respect (e.g., Kövecses, 1990, 2000), further metaphor research aiming to link CMT-based insights with the findings in other disciplines to build up cumulative evidence remains insufficient. Similarly, most CMT work on emotion is descriptive, rather than trying to test a priori hypotheses against quantitative metaphor data.

In this chapter, we address these limitations with a focus on the relation between two specific domains: CMT and emotion psychology. The two main goals

of our study are to illustrate (1) whether CMT renders results that are coherent with more psycho-linguistic methods in the study of emotion; and (2) whether these results are coherent with findings in cross-cultural emotion psychology.

For this purpose, three independent methodologies (one of them CMT) are used to test in language several hypotheses stemming from emotion psychology on the experience of anger across cultures. The languages at stake are English, Spanish and Russian, representing different cultural groups for which relevant cultural differences have been identified (cf. Section 2).

In what follows, further detail about these observed differences is provided (Section 2), leading to the formulation of the hypotheses to be tested (Section 2.1). The three methodologies and the resulting datasets are then outlined (Section 3). After presenting the results of each of the three studies (Sections 4.1–4.3), we summarize the findings (Section 5) and discuss their implications for the role of CMT in the affective sciences at large (Section 6).

2. Cross-cultural differences in anger experiences

In both Western and Eastern emotion theories (cf. Shweder & Haidt, 2000), anger is assumed to be a pan-cultural emotional experience (Ortony & Turner, 1990; Scherer, 2009), accurately recognized across cultures in terms of its facial expression (Ekman, 1999; Matsumoto, Yoo, & Chung, 2010) and consistently lexicalized in most languages studied to date (Hupka, Lenton, & Hutchison, 1999).

However, the specific ways in which anger is perceived and experienced can vary across cultures. Among the crucial factors behind this divergence are two global dimensions of cultural variance: Individualism/Collectivism and Power Distance (Hofstede, 2001). The Individualism/Collectivism dimension derives from differences in self-construal style, i.e. in how people define themselves in relation to others in their environment (Markus & Kitayama, 1991; Nisbett, Peng, Choi, & Norenzayan, 2001; Triandis, 1994). In the so-called 'individualistic' cultures, people tend to think of themselves and others as independent 'entities'; therefore, freedom of self-expression, self-autonomy, and pursuit of individuality are emphasized. By contrast, 'collectivistic' cultures favor the 'interdependent' concept of the self, which promotes a view of people as highly interconnected; thus, social harmony and one's belongingness to a group are favored over assertions of individuality. The Power Distance dimension captures the extent to which social inequality within a society is generally tolerated by its members (Hofstede, 2001). In societies with a large degree of power distance, the gap between the subordinates and authority figures (e.g., elders, social superiors)

is socially sanctioned; therefore, respect and formal deference for higher-status people are more valued and maintained. In cultures with low power distance, relationships with other people are less dependent on social status; thus, formal deference, obedience, and respect are comparatively less promoted and expected (Hofstede, 2001).

These two dimensions – Individualism/Collectivism and Power Distance – underpin four aspects of divergence with regard to how anger and other negative other-directed emotions are expressed and regulated in different societies. In what follows, we will briefly outline these aspects.

First, remarkable differences exist with regard to the *expression* and *regulation* (i.e. conscious control) of anger across cultures. In collectivistic, as compared to individualistic cultures, anger is predominantly viewed as a more negative and socially disruptive emotion, i.e., as an emotion that challenges social order and harmony. Thus, while an outward expression of anger is generally more socially acceptable in individualistic cultures with low power distance, like the UK or the USA (e.g., Markus & Kitayama, 1991; Triandis, 1994), traditional collectivistic societies – such as the Tahitian (Levy, 1973), Samoan (Gerber, 1985), Ifalukian (Lutz, 1982, 1988), Japanese (Johnson, 1993), Tongan (Bender, Spada, Rothe-Wulf, Traber, & Rauss, 2012), or Filipino (Lynch, 1979) – tend to censor explicit manifestations of negative other-directed emotions in order to avoid or diminish interpersonal hostility. In collectivistic cultures promoting an interpersonal self-concept and social hierarchy, this discouragement is also maintained by socialization practices: from an early age, children's tantrums and aggressive behaviours are controlled and, from some point onwards, not tolerated by adults (Lutz, 1982; Ward, 1970). Outward expressions of anger are similarly unwelcome in adulthood: a summary report from 21 countries (Fernández, Carrera, Sánchez, Páez, & Candia, 2000) shows that collectivistic, high power distance societies (e.g., Guatemala, India, China, or Portugal) less frequently express anger by verbally attacking the causer of the emotion, screaming or cursing than people from individualistic, low power distance countries (e.g., USA, France, Germany, or Switzerland).

A second area of divergence across cultures is the typical *causal antecedents* of anger, i.e. the specific circumstances, events, or persons that are likely to elicit the emotion. As a general pattern, in collectivistic societies, there is a proclivity to report anger as an emotion caused by circumstances, rather than by specific people, so as to minimize other people's responsibility for a person's getting angry (Bender et al., 2012). The *social status* of the agents involved in an anger situation is of paramount importance too: while in Western cultural groups anger is more typically reported to be elicited by someone a person knows or associates with (an 'in-group'), in collectivistic societies, anger is more typically elicited

by strangers (an 'out-group') (Chon, Kim, & Ryoo, 2000; Scherer, Wallbott, & Summerfield, 1986; Stipek, Weiner, & Li, 1989). Cultural variance on the Power Distance dimension provides a further important nuance: in societies with high power distance, experiencing (or at least showing) anger is the least desirable when expressed towards higher-status people. For example, among the Tongans, Ifalukians, or Javanese, there are complex specific social rules to show and maintain respect and obedience to elders; accordingly, disrespect towards (let alone confrontation with) higher-status others is socially condemned (Bender et al., 2012; Lutz, 1988).

Thirdly, differences emerge across cultures with regard to the reported *frequency of experiencing* anger. People in collectivistic societies are reported to less readily acknowledge experiencing anger than those in individualistic societies, possibly due to their perception of anger as a less socially welcome emotional experience. Consequently, collectivistic groups tend to admit to have experienced anger less frequently (Grazzani-Gavazzi & Oatley, 1999).

Finally, variance exists across cultures with regard to the reported *intensity of anger*. Here, in contrast to Western societies, people from collectivistic, larger power distance cultural backgrounds (such as India, Japan, or Mexico) report a lower emotional intensity of other-directed negative emotions. Cross-cultural emotion psychologists relate this tendency to the fact that the explicit display of negative emotions (including those experienced towards social superiors) can bring about retaliation (Matsumoto & Ekman, 1989; Yrizarry, Matsumoto, & Wilson-Cohn, 1998).

Obviously, differences in anger underpinned by Individualism/Collectivism and Power Distance are most pronounced in culturally very disparate populations (e.g., the USA vs. the Ifalukians) – and indeed, prior research has yielded relatively few and weak cross-cultural differences across European cultures (e.g., Scherer et al., 1986). However, several studies have recently demonstrated that cultural variation underpinned by the two dimensions is also observed on a much lower scale, as in two regions of the same country (Mortillaro, Ricci-Bitti, Bellelli, & Galati, 2013) or two sub-cultures within one state (Ogarkova, Prihod'ko, & Zakharova, 2013). Relevant cultural variation has also been reported for the groups considered in the present study: English, Russian, and Spanish speakers from the UK/USA/Australia, Russia, and Spain, respectively. Specifically, Russia and Spain have been reported to be more collectivistic and exhibit a larger degree of power distance (see Ogarkova, Soriano, & Lehr, 2012, for a review), while the UK, USA, and Australia are more individualistic societies characterized by low power distance (Hofstede, 2001). Figure 1 summarizes their corresponding Individualism/Collectivism and Power Distance indexes (Hofstede, 2001).

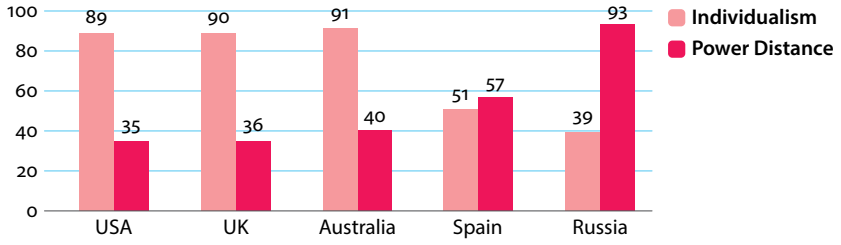

Figure 1. Individualism and Power Distance indexes for the USA, UK, Australia, Spain, and Russia (Hofstede, 2001)

2.1 Research hypotheses

From the literature overview above, several predictions can be formulated concerning the four aspects of variation discussed:

1. *Expression and regulation*. Anger in English will be perceived as (a) less socially disruptive and negative than in Russian and Spanish; therefore, it will be (b) more expressive/outward in its manifestation, and (c) less regulated in English compared to Russian and Spanish.
2. *Causation and social context.* Compared to Russian and Spanish, anger in English will be more likely elicited by (a) other people's actions (as compared to circumstances); (b) social superiors; (c) familiar ('in-group') people.
3. *Frequency.* Experiencing anger will be perceived as more frequent in English compared to Russian and Spanish.
4. *Intensity.* Anger will be perceived as more intense in English when compared to Russian and Spanish.

These hypotheses are tested in three studies with three different methodologies. In what follows, further detail on each of the methods is provided.

3. Methods

3.1 Anger situation-labelling task (Study 1)

Study 1 aimed to assess the convergence of native speakers of the three languages in labelling the same set of anger-eliciting situations.

Materials (anger-eliciting situations)
The labelling task was based on the mapping method (Boster, 2005), a reference-based tactic used to assess (dis)similarities in labelling responses to the same stimuli across different cultural groups. Five anger-eliciting situations (see Annex 1) were constructed using the Facet Approach (Elison, 2005). The basic device of this approach is a *mapping sentence* that contains a set of variables (i.e., *facets*) capturing important components of an emotional situation (e.g., Actors involved, Disadvantaged persons, Actions performed, etc.). Relevant facets of anger situations were derived from the International Survey on Emotion Antecedents And Reactions (ISEAR) database (containing over 3,000 accounts of emotional situations from respondents in 37 countries, see Wallbott & Scherer, 1988) and relevant literature reviews (e.g., Wranik & Scherer, 2010).

Participants
The participants of Study 1 were native speakers of several European languages, among them Russian (N = 17), Spanish (N = 17), and English (N = 11) who took part in the study on a voluntary basis.

Procedure
The participants were asked to free-list the emotion words (nouns, adjectives, or both) in their native language that would best capture the way they would feel in each of those situations. The participants did not know which emotion category was targeted by the scenarios and were free to list whatever emotion term they thought appropriate.

Analyses
For each language sample, the analysis involved grouping and counting the words yielded by each scenario; nouns and adjectives with the same lexical root (e.g., *fury* and *furious*) were grouped together. Global lists including all labels used across situations were also compiled. Then, the absolute frequencies of anger words per language sample and per scenario were converted into relative frequencies (percentages) for further comparison (see Ogarkova et al., 2012, for more detail on the method).

3.2 Feature-based meaning profiles of anger nouns (Study 2)

Study 2 targeted the understanding of the meaning of anger words by native speakers of the three languages.

Materials (feature-rating questionnaire)

The meaning of anger words was assessed using a feature-rating instrument based on the GRID approach (Fontaine, Scherer, & Soriano, 2013). The GRID paradigm predicts that, just like emotional experiences are constituted by variably interrelated changes across several emotion components (e.g., event appraisals, bodily sensations, expressive symptoms, etc.), differences in meaning between the emotion words labelling those experiences can be captured by the same component features.

In this study, the original GRID questionnaire (Fontaine et al., 2013) was modified to specifically address semantic (dis)similarity between words denoting varieties of anger (and several other emotion categories, see Soriano, Fontaine, Ogarkova, Mejia, Volkova, Ionova, & Shakhovskyy, 2013, for further detail). The modified questionnaire comprises questions on 95 features from several emotion components: event appraisal (25), bodily experience (11), facial, vocal, and gestural expression (13), action tendencies (13), subjective feelings (10), and regulation (3). Sixteen more features inquired about various social aspects, such as societal acceptability and frequency.[1]

Twenty-five anger words in the three languages were selected from Study 1 to be rated (see Table 1).

Table 1. Spanish, Russian, and English anger terms elicited in the emotion situation labeling task (Ogarkova et al., 2012) and used in Studies 2 and 3

English	Spanish	Russian
anger*	rabia* [anger]	razdrazhenie* [irritation]
annoyance	enfado [anger/annoyance]	obida* [resentment/hurt]
rage*	indignación* [indignation]	zlost'* [anger]
fury*	cabreo [anger] (colloquial)	gnev* ['justified anger']
frustration*	ira* [anger/wrath]	dosada* [frustration/vexation]
irritation*	molesto [annoyed]	vozmuschenie* [indignation]
indignation*	frustración* [frustration]	negodovanie [indignation]
resentment*	irritación* [irritation]	jarost'* [fury]
	furia* [fury]	serdityj [cross]

Note. Words are listed in descending order of frequency of recall. For readability reasons, Russian terms are transliterated from Cyrillic. Asterisks (*) indicate the words used in Study 3.

1. A complete version of the questionnaire is available at: http://www.affective-sciences.org/node/4244

Participants

Participants were 45 Spanish (9 females; mean age: 22.2, SD = 4.03), 40 Russian (19 females; mean age: 21.2, SD = 2.9), and 36 English-speaking respondents (26 females, mean age: 31.6, SD = 12.7). The sample from Spain comprised university students from several regions in the country; the Russian sample was collected at the University of Volgograd (Russia); for English, university students were recruited at the University of New England (Australia) and Case Western Reserve University (USA).

Procedure

The participants rated anger words in a controlled web-study. Each participant was presented with four to five anger words and was asked to rate the likelihood of each feature for each word on a scale from 1 (extremely unlikely feature) to 9 (extremely likely feature). The order of presentation of words was randomized across the participants. The features were presented on screen one at a time.

Analyses

For each word, the mean rate across the participants was calculated for each feature. This constituted the word's (feature-based) semantic profile. To control for potential cultural differences in scale use (Chen, Lee, & Stevenson, 1995), all mean scores were centred[2] before the analysis (cf. Fontaine et al., 2013). Language-specific differences in the semantic profiles of anger words were investigated using Principal Component Analysis (PCA), a technique to identify the dimensions of greatest variance in a dataset and represent each observation by its coordinates along these dimensions. The 25 anger terms (see Table 1) were treated as observations and the (centred) mean scores of the 95 emotion features as variables.

3.3 Metaphorical construal of ANGER[3] concepts (Study 3)

Study 3 targeted the metaphorical construal of ANGER concepts in English, Russian, and Spanish.

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2. Centring means that for each term the average score was computed across the 95 features in a language sample, and then subtracted from each feature score in that sample.

3. Following the convention in Cognitive Linguistics, small uppercase is used for concepts and conceptual metaphors.

Materials (words and corpora)

Focusing on 20 ANGER nouns (marked with asterisks in Table 1), 20 thousand random KWIC citations (i.e., 1000 per word) were culled from representative corpora in each language: the *British National Corpus*, *Corpus del Español*, and the *Russian National Corpus*. In cases of fewer occurrences of a word in a corpus, additional citations were extracted from supplementary corpora.[4]

Procedure (metaphor extraction and classification)

The methodology used was the 'metaphorical profile' approach, a corpus-based quantitative methodology for metaphor identification, classification, and analysis (Ogarkova & Soriano, 2014a, 2014b; Soriano & Ogarkova, submitted). Metaphorical patterns (Stefanowitsch, 2006) were manually extracted from the citations and classified into conceptual metaphors. To ensure inter-rater reliability, 10% of the English sample was reanalyzed by another rater (Kappa = 0.83, $p < .000$). The general metaphor inventory that emerged at this stage of the analysis (cf. Soriano & Ogarkova, submitted, for details) can be organized in two broad levels. The higher level embraces 'root' metaphors (e.g., ANGER IS A PRESSURIZED FLUID IN THE BODY CONTAINER) heading an interconnected network of sub-metaphors. The sub-metaphors constitute the lower level of the inventory and comprise two types (cf. Soriano, 2005): *entailment* sub-metaphors (e.g., THE VIOLENT EXPRESSION OF ANGER IS AN EXPLOSION/BURST in relation to ANGER IS A PRESSURIZED FLUID IN THE BODY CONTAINER) and *special case* sub-metaphors (e.g., THE EYES ARE A CONTAINER FOR ANGER with regard to its root metaphor THE BODY IS A CONTAINER FOR ANGER).

Furthermore, the metaphors in the inventory were classified into groups according to the semantic foci (cf. Kövecses, 2000) they best instantiate. As suggested by several metaphor scholars (Kövecses, 2000, 2005; Soriano, 2005, 2013), metaphors relevant for the characterization of an emotion concept can form meaningful groups highlighting affective semantic 'dimensions' or 'foci' – such as Intensity, Evaluation (positive/ negative), or Control – that are applicable to a number of other emotions as well. Affective semantic foci are, thus, focal characteristics of emotions profiled by metaphor. They can also be related to common psychological constructs like emotional arousal, valence, or regulation (Soriano, 2013; Soriano & Ogarkova, submitted). Five foci are most relevant for our study:

4. In English, 594 additional KWIC citations were culled from the *Bank of English* for *indignation*. In Spanish, additional contexts of use were sought in the *Corpus de referencia del español actual* (*CREA)* for *furia* (107), *frustración* **(796),** *indignación* (250), and *irritación* (828).

Intensity, Harm/Damage, Expression, Regulation, and Control (see Table 2). To avoid redundancy in the statistical analysis of the data, each metaphor was classified in one group only. Metaphors were classified at the lower level of the inventory as, oftentimes, different sub-metaphors of the same root highlighted different foci. Two metaphors – ANGER IS AN ANIMAL and ANGER IS A VISIBLE/HIDDEN OBJECT – were problematic, as the expressions in them appeared to simultaneously elaborate on several foci. To discriminate between them, we used the notion of 'scenario' (Musolff, 2006). In the metaphor ANGER IS AN ANIMAL, four scenarios were differentiated:

a. Harm-damage (to the self): e.g., *anger eat [emoter's] guts*
b. Harm-damage (to others): e.g., *ferocious anger*
c. Regulation (attempted/successful): e.g., *[emoter] leash (his/her) anger*
d. Regulation (unattempted/failed): e.g., *anger break loose*

In ANGER IS A VISIBLE/HIDDEN OBJECT, metaphorical expressions were split into two scenarios: (a) those highlighting the incidental visibility (or lack of it) of anger, and (b) those implying the voluntary actions of the emoter to make anger perceptible by others:

a. Expression (perceptible): e.g., *see anger, [something] reflect irritation*
b. Control (some): e.g., *[emoter] display irritation, conceal frustration*

In what follows, we will briefly present these foci and their corresponding psychological constructs.

Metaphorically construed ***Intensity*** comes in two varieties in the representation of ANGER: one in which intensity is represented as physiological arousal in terms of heat (as in the metaphors ANGER IS FIRE, ANGER IS A HOT FLUID, and INTENSITY IS HEAT (e.g., *fiery rage*), and another representing emotional intensity more abstractly either in spatial terms (as in the metaphors INTENSITY IS DEPTH and MORE IS UP – e.g., *rage be at peak*), or by referring to volumes and sizes (as in INTENSITY IS THE SIZE OF AN OBJECT/QUANTITY OF A SUBSTANCE – e.g., *enormous frustration*). This semantic focus can be related to the psychological construct of **arousal/activation**, one of the most characteristic features of emotional experiences (Fontaine et al., 2013; Scherer, 2009).

The anger metaphors highlighting ***Harm/Damage*** profile the negative impact of the emotion on the involved agents' physical and mental well-being. This negative impact can be to the self and to others. The former is highlighted by four source domains: ILLNESS, where anger is construed as a disruption of the person's well-being (e.g., *anger fester*); BLINDNESS, which suggests, metaphorically, that anger is impeding normal mental functioning (e.g., *blinding rage*); PRESSURE,

Table 2. Selected semantic dimensions focalized by the different metaphors

Semantic focus	Specification	Conceptual metaphors
Intensity	bodily arousal	ANGER IS FIRE, ANGER IS A HOT FLUID, INTENSITY IS HEAT
	abstract	INTENSITY IS DEPTH, INTENSITY IS A SCALE, INTENSITY IS THE SIZE OF AN OBJECT, INTENSITY IS THE QUANTITY OF A SUBSTANCE, MORE IS UP
Harm/damage (Negativity)	to self	ANGER IS AN ILLNESS, ANGER IS AN ANIMAL[a], THE EFFECT OF ANGER IS PRESSURE ON THE CONTAINER, IRRATIONALITY IS BLINDNESS
	to others	ANGER IS A WEAPON, ANGER IS A DANGER/THREAT, ANGER IS AN ANIMAL[b]
Expression	perceptible	THE EYES ARE CONTAINERS, THE FACE IS A CONTAINER, THE VOICE IS A CONTAINER, ANGER IS LIGHT, ANGER IS SOUND, ANGER IS A MESSAGE, ANGER IS A VISIBLE/HIDDEN OBJECT[a]
	internalized	THE BODY IS A CONTAINER, THE HEART IS A CONTAINER, THE CHEST IS A CONTAINER, THE SOUL IS A CONTAINER, THE HEAD/MIND IS A CONTAINER, INCREASE OF ANGER IS RISE IN THE BODY
Regulation	attempted/successful	ANGER IS COLD, ANGER IS AN OPPONENT, ANGER CONTROL IS CONTAINMENT, FIGHTING THE DESIRE TO ACT IS COUNTER-PRESSURE, ANGER IS AN ANIMAL[c]
	unattempted/failed	ANGER IS INSANITY, THE VIOLENT EXPRESSION OF ANGER IS AN EXPLOSION-BURST, THE NON-VIOLENT EXPRESSION OF ANGER IS THE COMING-OUT OF THE FLUID, THE EMOTER IS AN ANIMAL, ANGER IS AN ANIMAL[d]
Control	some	ANGER IS A TOOL, ANGER IS A MOVED OBJECT, ANGER IS A POSSESSED OBJECT, ANGER IS A VISIBLE/HIDDEN OBJECT[b]
	little/no	ANGER IS A NATURAL FORCE, ANGER IS AN AUTONOMOUSLY MOVING ENTITY, ANGER IS AN ENVIRONMENT, ANGER IS A LOCATION, ANGER IS A CONTAINER, ANGER IS A SUPERIOR

Note. Root metaphors in uppercase; entailment and special-case sub-metaphors in small uppercase; superscript letters ([a, b, c, d]) refer to the specific 'scenarios' within the metaphors.

which profiles a physically unpleasant sensation of swelling or inability to breathe (e.g., *barely breathe for fury*); and ANIMAL (scenario b) where anger is construed as an aggressive creature causing physical damage to the person (e.g., *anger eat X's guts*). Harm/Damage to others encompasses three source domains inviting infer-

ences about the aggressive, punitive responses of anger (Lazarus, 1991): WEAPON, profiling the understanding of anger as a weapon aimed to harm another person (e.g., *X fling indignation at Y*); DANGER/THREAT, emphasizing the (potentially) harmful consequences of anger for third parties (e.g., *Y be scared of X's anger*); and ANGER IS AN ANIMAL (scenario b), highlighting potential aggression of a metaphorical ANIMAL (anger) against others (e.g., *ferocious rage*). *Harm/Damage* as a semantic focus can be related to the psychological construct of **valence** (*negative* valence in this case), a most defining feature of emotional experiences cross-culturally (Fontaine et al., 2013; Scherer, 2009).

Expression is another bipolar semantic focus. The metaphors in one of the poles (perceptible Expression) highlight visible, audible, or otherwise perceptible anger manifestations, while the metaphors in the opposite pole (internalized Expression) profile the lack of external symptoms of the emotion. In the first case, 'external body-parts' (the eyes, face, voice) are construed as metaphorical containers for anger (e.g., *rage be in X's eyes*). The visibility or audibility of anger are also highlighted by the following source domains: SOUND (e.g., *crescendo of indignation*), MESSAGE (e.g., *explain anger*), LIGHT (e.g., *anger flash*), and VISIBLE/HIDDEN OBJECT (scenario a), all of which emphasize the incidental (rather than volitional) visibility of the emotion (e.g., *see anger*). By contrast, metaphorical patterns highlighting internalized Expression construe anger as located inside the person or in 'internal body parts' (literal or imaginary), such as the heart, chest, soul, or head (e.g., *frustration inside X, indignation in heart*). This semantic focus can be related to the psychological construct of emotional **expression**, another major emotion component (Fontaine et al., 2013; Scherer, 2009).

The two remaining metaphor groups can be related to the psychological construct of emotion **regulation**, an important aspect of emotion related to how emotions are perceived by the emoter and how they are acted upon. Both metaphor groups are bipolar. The first one, around the semantic focus of ***Regulation***, has to do with whether the person exerts voluntary control over the existence, intensity, or expression of the emotion. In the first pole, regulation is successful or at least attempted; in the second, it is either unsuccessful or unattempted. The source domains in the first pole include OPPONENT (e.g., *X wrestle with X's rage*), COUNTERPRESSURE (e.g., *suppress fury*), CONTAINMENT (e.g., *bottle up frustration*), ANIMAL (scenario c) (e.g., *bridled fury*), and COLDNESS, where "cold anger" refers to "controlled anger" (e.g., *anger glitters coldly in X's eyes*). The metaphors in the opposite pole refer to anger COMING OUT (e.g., *anger spill out*), causing an EXPLOSION (e.g., *explode with anger*), being INSANITY (e.g., *X get mad with frustration*), being an uncontrolled ANIMAL (scenario d) (e.g., *wild fury*) or to the EMOTER AS AN ANIMAL (e.g., *X bellow with fury*).

The last group of metaphors focuses on the notion of ***Control***, i.e., whether the person feels s/he has any power over his/her anger. This bipolar focus embraces two types of source domains. One subgroup highlights the relative control the person has over his/her emotional state; here, anger is construed as a physical object the person can manipulate. The relevant source domains are POSSESSION (e.g., *harbour resentment*), MOVED OBJECT (e.g., *bring rage*), and VISIBLE/HIDDEN OBJECT (scenario b), where the angry person can at will either show or disguise the felt emotion (e.g., *display irritation, conceal frustration*). The opposite pole is occupied by metaphors profiling little or no control, where anger is construed as a LOCATION or CONTAINER surrounding the person on all sides (e.g., *into irritation*), a NATURAL FORCE (e.g., *avalanche of fury*), an autonomously MOVING ENTITY (e.g., *fury return*), or a CONTROLLER/SUPERIOR (e.g., *at the mercy of resentment*).

Analyses

First, the total number of metaphorical patterns per focus was counted for each of the 20 words. The frequencies for each translation pair (8 Russian-English and 7 English-Spanish pairs) were then submitted to a series of Fisher exact tests. As this involved multiple testing, the levels of significance were adjusted using Bonferroni correction (i.e., they were divided by 10, the number of tested semantic foci).

4. Results

4.1 Word use in the anger situation-labelling task

Differences in labelling anger situations emerged at two levels: in the most frequent words overall (see Figure 2) and in the specific labelling choices for individual situations. Regarding the former, while the most frequent English term was *anger/angry* (10.8% of all responses), in Russian, the top most frequent term was *razdrazhenie* ('irritation') (13.2%), signalling a lower intensity type of emotion (cf. Ogarkova et al., 2012, p. 274). The second most frequent Russian term, *obida* ('resentment/hurt') (7,1%), also refers to a less expressive, more internalized variety of the emotion than English *anger*. In Spanish, the most frequent anger term overall was *rabia* ('anger'), but the word *impotencia* ('impotence') was used just as frequently (9.8%). *Impotencia* is likely to refer to the person's inability to correct the anger situation and/or to exert retaliation, and its frequency in Spanish suggests the importance of a culturally-mediated need to regulate the emotion (cf. Soriano, 2013, for converging evidence).

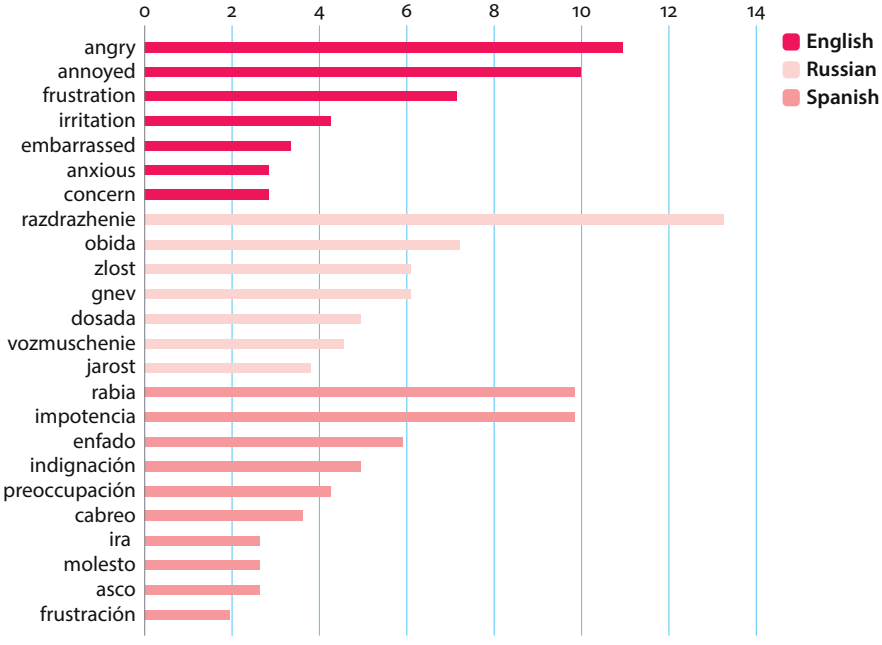

Figure 2. Most frequent labels used across all anger situations by English, Russian, and Spanish respondents (% of the total word use across all scenarios)

Regarding differences in word use in labelling individual situations, two scenarios were particularly revealing: situation I, where the offender was a social superior, and situation V, where the offender was an 'in-group' person (a colleague) (see Annex 1). In contrast to English where the most frequent response was *anger/angry* (situations I & V) and *insulted* (situation V), Russian and Spanish respondents opted for words referring to less aroused, more internalized, or non-retaliating forms anger.

Specifically, in Russian, the typical responses to the offence by a social superior and an 'in-group' person were *obida* ('hurt/resentment') and r*azdrazhenie* ('irritation'), respectively (Figures 3–4). In Spanish, an offence by a social superior most frequently elicited *rabia* ('anger'), followed by *impotencia* ('impotence'); the most common emotion experienced towards an in-group member was *enfado* ('anger-annoyance') (Figures 3–4).

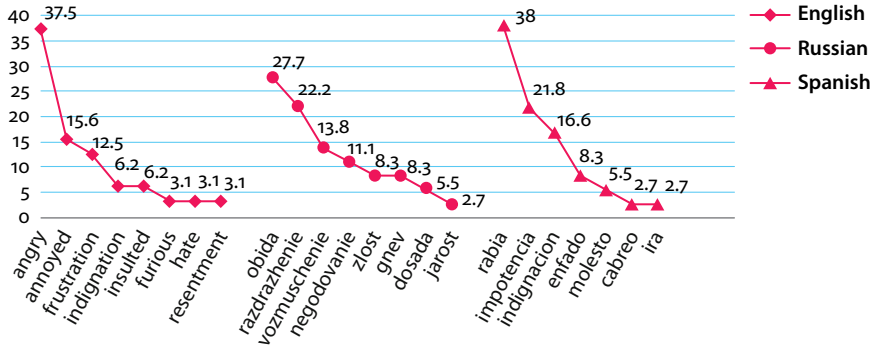

Figure 3. Label use in scenario I (% of the total word use in the situation)

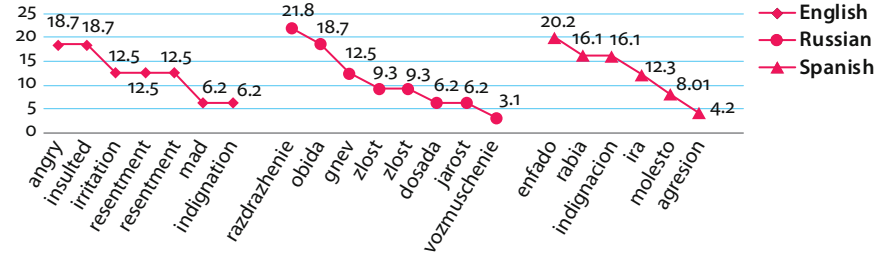

Figure 4. Label use in scenario V (% of the total word use in the situation)

4.2 Differences in the feature-based profiles of anger nouns

A two-dimensional solution of the PCA accounting for 49.2% of the total variance was selected on the basis of the scree plots and the interpretability of the emerging dimensions. Dimensions 1 and 2 accounted for 30.1% and 19.1% of the total variance, respectively.

Dimension 1 (Figure 5, vertical axis) was easily interpretable as a Power-Arousal dimension opposing, in all three languages alike, the least aroused and virulent anger subtypes, like English *annoyed* and *resentment,* Russian *dosada* ('vexation') and *obida* ('resentment'), or Spanish *frustración* ('frustration') and *molesto* ('annoyed), to the anger varieties that imply a higher degree of arousal and virulence, such as English *rage* and *furious*, Russian *jarost'* ('fury') and *gnev* ('justified anger'), and Spanish *ira* ('anger/wrath') (see Soriano et al., 2013, for congruent results). A subsequent analysis of variance (ANOVA) of the loadings for the various anger terms on Dimension 1 did not show significant differences across the languages ($F\ (2,\ 22) = 0.72$, $p = .931$), suggesting that the differentiation of anger types according to their power and arousal is equally salient in the three languages.

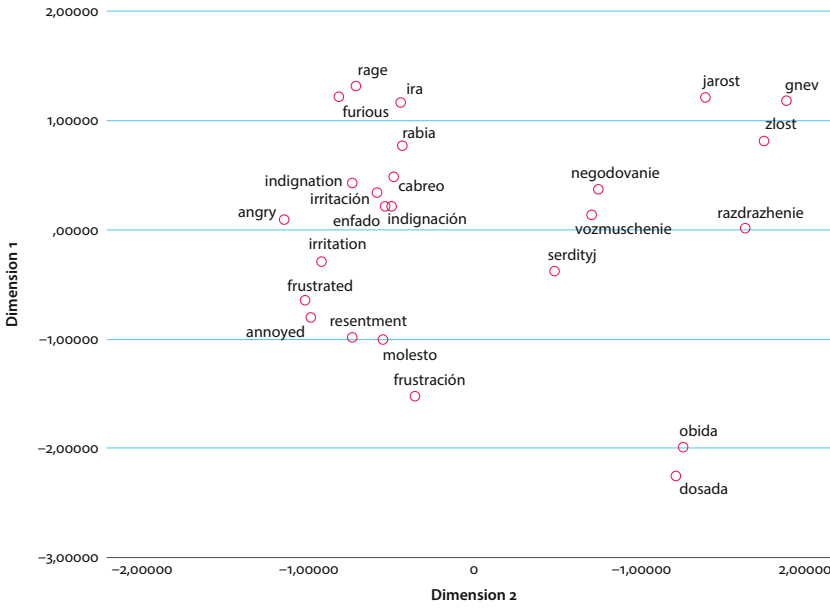

Figure 5. Two-dimensional solution (PCA) based on the feature-based profiles of anger terms in English, Russian, and Spanish

By contrast, significant languages differences (ANOVA, $F(2,22) = 111.13$, $p < .000$) were found for the loadings of anger terms on Dimension 2 (Figure 5, horizontal axis). Subsequent posthoc Sidak tests demonstrated a significant difference between Russian and both English and Spanish ($p < .000$ in both cases). Spanish and English differed marginally significantly as well ($p = 0.54$).

An analysis of the highest loading features (Table 3) reveals the nature of this dimension. On one pole, we find features highlighting the frequent and open manifestation of anger (#87, 86) and its social acceptability (# 88), reflected also in the likelihood of attributing the emotion to both others and oneself (# 94, 95) and its ubiquitous character, since it can be experienced towards all types of wrongdoers regardless of their social status (#83, 84, 85) and in all social situations, regardless of whether one is with others or alone (#90, 91). The emotions at this end of the spectrum are also perceived to be intense (#82). Finally, the features indicate that these types of anger are caused by specific and intentional actions of others (#54, 44). Taken together, these features capture a view of anger as an openly manifested, socially acceptable, frequent, and intense emotion elicited by the intentional actions of others. All of the English anger words are closer to this characterization than the Russian and Spanish words.

Table 3. Rating features with highest loadings on Dimension 2

#	Features	Score
95	the emotion is attributed by people in your society to others	−0,898
87	the emotion is frequently openly manifested in your society	−0,751
90	the emotion is experienced individually	−0,734
83	the emotion is experienced towards someone who is equal in social status	−0,733
93	the emotion happens when the person is alone	−0,729
92	the emotion happens when other people are present	−0,726
84	the emotion is experienced towards someone who is inferior in social status	−0,724
85	the emotion is experienced towards a superior/someone with a higher social status	−0,72
44	the person wanted to blame others	−0,702
91	the emotion is experienced together with other people	−0,694
86	the emotion is frequently experienced in your society	−0,694
54	the emotion was caused intentionally	−0,694
2	the person felt bad	−0,686
13	the person felt warm	−0,682
94	the emotion is attributed by people in your society to themselves	−0,623
82	the emotion is an intense emotional state	−0,553
88	the emotion is highly acceptable in your society as to actually experiencing it	−0,396
25	the person frowned	−0,316
39	the person wanted to do some harm to her/himself	−0,175
55	the emotion was caused by the person's behavior	−0,083
67	the emotion was caused because of the material possessions of a stranger	−0,005
53	the emotion could have been expected by the person	0,193
68	the emotion was caused by circumstances/ things beyond any human control	0,439
56	the emotion was caused by an intrinsic quality of the person her/himself	0,47
6	the person felt restless	0,53
74	the emotion had an impact on the person's reputation	0,554
16	the person got pale	0,578
11	the person blushed	0,58
60	the emotion was caused by someone who is inferior in social status	0,609
48	the person wanted to be close to people or things	0,641
49	the person wanted to sing and dance	0,682
61	the emotion was caused by someone who is superior, or higher in social status	0,683
21	the person trembled, or felt shivers	0,699
1	the person felt good	0,7
24	the person smiled	0,757
46	the person wanted to deny what was happening	0,788
59	the emotion was caused by someone who is equal in social status	0,848
57	the emotion was caused because of the person's material possessions	0,928

Note. Score = loading of a rating feature on Dimension 2 (Principal Component Analysis with Varimax rotation)

On the opposite pole of the dimension, anger is characterized above all in reference to causation. The highest loading features speak of the social status of the wrongdoer (#59, 60, 61) and different types of causes of anger, such as material possessions or intrinsic qualities of the experiencer him/herself (#56, 57). In contrast to the opposite pole, the emotions at this end of the spectrum are perceived as more likely caused by circumstances beyond human control (#68) than by intentional actions. Taken together, the features describe a type of anger that is not defined by its manifestation, but rather by its causation profile and where social considerations and circumstances (rather than actions) are given greater consideration. All of the Russian anger words are significantly closer to this characterization of anger than the English and Spanish words.

Interestingly, the terms that differed most on Dimension 2 in the three languages were the prototypical anger words: English *anger*, Russian *zlost* ('anger') and *gnev* ('justified anger') and Spanish *rabia* ('anger') and *ira* ('anger/wrath') (see Table 4).

Table 4. Differences in loadings on Dimension 2 between translation pairs (English *vs* Russian/Spanish)

English vs Russian	Dif.	English vs Spanish	Dif.
anger–gnev	2,97	anger–rabia	0,72
anger–zlost'	2,84	anger–ira	0,71
irritation–razdrazhenie	2,53	frustrated–frustración	0,67
frustration–dosada	2,24	annoyed–enfado	0,45
furious–jarost'	2,18	irritation–irritación	0,35
rage–jarost'	2,08	indignation–indignación	0,25
resentment–obida	2,00		
indignation–negodovanie	1,45		
indignation–vozmuschenie	1,42		

4.3 Differences in the metaphorical profiles of anger nouns

The statistically significant differences in the exploitation of the foci for each pair of translation equivalent terms in English vs. Russian and English vs. Spanish are summarized in Table 5.

Not all translation pairs were significantly different on all semantic foci. The number of differences observed for each translation pair is shown in Table 6.

The highest number of differences is observed for the Russian and Spanish prototypical anger varieties (*zlost', gnev, rabia, ira*) compared to English *anger* (and for the contrast *fury-furia* in English and Spanish); the least variation occurs among irritation and indignation lexemes.

Table 5. English vs Russian/Spanish translation pairs that differ significantly in the number of metaphorical patterns in the semantic foci

Semantic focus	Specification	Russian/Spanish		English	p
Harm	to self	zlost	>	anger	2.3e-8***
		gnev	>	anger	7.8e-8***
		ira	>	anger	3.3e-9***
		rabia	>	anger	2.3e-11***
		vozmuschenie	>	indignacion	8.5e-7***
		jarost	>	fury	9.7e-13***
		furia	>	fury	2.1e-6***
	to others	gnev	>	anger	1.3e-6***
		furia	>	fury	6.06e-9***
		furia	>	rage	9.8e-9***
Intensity	bodily arousal (heat)	rabia	<	anger	9.2e-4**
		frustración	<	frustration	1.8e-5***
		indignación	<	indignation	5.9e-5***
		furia	<	fury	4.0e-4**
	abstract	zlost	<	anger	0.002*
		gnev	<	anger	5.0e-5***
		ira	<	anger	5.9e-5***
		dosada	<	frustration	0.001*
Expression	perceptible	rabia	<	anger	1.8e-5***
		jarost	<	fury	2.5e-5***
		furia	<	fury	0.002*
	internalized	irritación	>	irritation	0.004*
Regulation	attempted/successful	obida	>	resentment	0.004*
	unattempted failed	dosada	<	frustration	0.004*
		frustración	<	frustration	4.9e-4**
		jarost	<	rage	2.1e-4**
		furia	<	rage	1.6e-6***
Control	some control	gnev	>	anger	5.1e-4**
		rabia	>	anger	1.8e-16***
		indignación	>	indignation	0.001**
	little/no control	zlost	<	anger	2.5e-6***
		rabia	<	anger	1.5e-7***
		furia	<	fury	2.2e-6***
		furia	<	rage	5.3e-8***

Note. Fisher exact. Asterisks */ **/*** indicate p<0.05/0.01/0.001 (corrected); < / > indicate the direction of effect (less/more patterns than).

Table 6. Number of foci where significant differences in the English *vs* Russian/Spanish translation pairs were observed

English vs Russian	N	English vs Spanish	N
anger–gnev	4	anger–rabia	5
anger–zlost	3	fury–furia	5
frustration–dosada	2	anger–ira	3
fury–jarost	2	frustration–frustración	3
indignation–vozmuschenie	1	rage–furia	3
rage–jarost	1	indignation–indignación	2
resentment–obida	1	irritation–irritación	1
irritation–razdrazhenie	0		

5. Summary and discussion

In this section, we summarize the findings in Studies 1–3 and discuss how they support the hypotheses formulated in Section 2.1. Taken together, the results of **Study 1** provide supporting evidence on five of the explored predictions (Table 7), namely, on the generally more expressive and less regulated nature of anger in English compared to Russian and Spanish (predictions 1 b–c); on the higher likelihood of experiencing and manifesting anger towards social superiors and in-group persons in English as compared to Russian and Spanish (predictions 2 b–c), and on the higher intensity of anger in English compared to Russian and Spanish (prediction 4).

Five of the tested hypotheses are also supported by the findings in **Study 2** (Table 7). First, anger is perceived as a more socially acceptable emotion in English compared to Russian (prediction 1a), which results in its more expressive and frequent manifestation and experience (predictions 1b and 3). Furthermore, anger is more likely caused by intentional actions (vs. circumstances) (prediction 2a) and refers to a more intense experience (prediction 4) in English compared to Russian.

The contrast English *vs.* Spanish yielded only marginal statistical significance, but the placement of the Spanish words between the English and the Russian ones on Dimension 2 is informative nevertheless, since the continuum across these three languages suggested by our analyses matches the continuum of cultural variance on Individualism/Collectivism and Power Distance identified for the respective societies in previous psychological work (see Figure 1 in Section 2).

Our finding that the most divergent anger terms on Dimension 2 in the three languages were the prototypical anger words is particularly interesting. Assuming that these terms best represent the 'average' anger experience in each language,

their divergence corroborates the claim that English and Russian (and Spanish, to a lesser extent) indeed differ importantly in the kind of information profiled by their emotion words. An additional nuance suggested by our results is that indignation words (English *indignation,* Spanish *indignación,* Russian *negodovanie* and *vozmuschenie*) differed the least, suggesting that the codification of morally justified types of anger may be more similar across languages.

The results of **Study 3** speak in favor of four predictions explored in the present study (Table 7). First, metaphors emphasizing negativity are more saliently represented in Russian and Spanish than in English (prediction 1a), both with regard to harm to the self and to others. Second, metaphors emphasizing the intensity of the emotion, be it construed via references to heat (e.g., *simmering resentment*) or more abstractly (e.g., *anger reach a high*) are more frequent for English words than for their correlates in the other two languages (prediction 4). Third, English words appear to more robustly highlight the expressivity/visibility of anger and less frequently occurred in metaphorical expressions highlighting an internalized experience of the emotion (prediction 1b). Finally, the metaphors highlighting successful or at least attempted emotion regulation are more salient in the metaphorical representation of anger in Russian and Spanish, while unattempted or failed regulation patterns are more prominent in English (prediction 1c).

An additional nuance offered by our metaphor analysis is that the Russian and Spanish words exhibit a stronger association with source domains highlighting the intrinsic controllability of the emotions, while the reverse pattern (no control) is more typical of the English anger varieties (see Table 5 in Section 4.3).

Our finding that the highest number of differences between Russian/Spanish and English is observed for the prototypical anger terms is strikingly similar to our results in Study 2 and the same interpretation applies: if the prototypical anger words are taken to embody the average anger experience in the respective cultural groups, their more prominent divergence underscores the global differences in the general representation of anger in the three languages.

Table 7. Summary of findings in Studies 1–3 supporting the predictions

Area	Prediction	Study 1	Study 2	Study 3
1. Expression and regulation	a. negativity		+	+
	b. expression	+	+	+
	c. regulation	+		+
2. Causation antecedents and social context	a. actions vs. circumstances		+	
	b. social superior	+		
	c. in-group member	+		
3. Frequency			+	
4. Intensity		+	+	+

Taken together, the three methods provide convergent evidence in support of all formulated predictions. Two of them – on intensity and manifestation of anger – are supported by all three methodologies, suggesting that emotion intensity and its expressive symptoms are particularly salient characteristics of anger that permeate language and are, thus, easier to capture in both observation and elicitation-based data.

6. Conclusions

This chapter explored the value of Conceptual Metaphor Theory in the interdisciplinary study of emotion. The insights provided by a quantitative, corpus-based analysis of anger metaphors in three languages (English, Spanish, Russian) were compared to those stemming from two other psycholinguistic methodologies: a feature-rating and a labelling task. The three methodologies were used to independently test in language several hypotheses on cross-cultural differences in anger experiences derived from earlier findings in emotion psychology. Specific patterns of divergence were predicted with regard to four aspects: (1) the general evaluation, expression, and regulation of anger; (2) the causal antecedents and social status of the offender in anger scenarios; (3) the perceived frequency of anger occurrence in society; and (4) the perceived intensity of the emotion.

The results of Studies 1–3 provide convergent evidence in support of all formulated predictions. Additionally, CMT is shown to be on a par with other language-based methods for conceptual analysis, providing reliable and replicable results that make sense in a wider research context. Specifically, the distributions of node words in metaphorical contexts in the three languages are shown to cohere with previously observed patterns of cross-cultural variation in the respective cultural groups.

However, the results yielded by the three language studies go beyond the mere replication of regularities previously observed in emotion psychology, as each method provides further insight, for example, by revealing the salience of powerlessness in the representation of anger in Spanish (Study 1), or by demonstrating that cultural variation is most prominent among the prototypical anger concepts of a language and less pronounced in other anger varieties, such as indignation (Studies 2–3). The metaphor data specifically also reveal the relevance of controllability in the characterization of the emotion and its variability within and across languages, suggesting the need for a greater granularity in the investigation of the emotion, and the desirability of including features about *controllability* in psychological rating instruments. This notion of "controllability" profiled by metaphor complements the more psychological construct of emotion regulation,

encouraging emotion researchers in any discipline to look not only into the specific "display rules" (Matsumoto et al., 2010) sanctioned by a culture to express emotion, but also into the perceived intrinsic controllability of this experience and its cross-cultural variability.

Compared to the other two methodologies, metaphor research exhibits some limitations too: emotion metaphors do not straightforwardly inform us about the social contexts where emotions occur, their typical antecedent events, or how frequently an emotion is experienced in a community. For that reason, future metaphor-based semantic profiling studies should ideally be complemented with other profiling methods in Cognitive Linguistics (cf. e.g., Krawczak, 2014) where these aspects of emotional experiences can also be annotated and statistically analyzed.

Notwithstanding the above limitations, the present study has demonstrated that CMT-based analyses can be a viable addition to the current repertoire of quantitative language-based methods in the interdisciplinary study of emotion. For this to be true, though, several methodological and analytical adaptations are desirable. First, our results speak in favour of a *quantitative, bottom-up perspective* on emotion metaphor where the degree of exploitation of a source domain is used as a measure of the saliency of the emotion characteristics profiled by that domain. In our case, it is precisely at the quantitative level that emotion metaphors were found to differ across the three languages. Second, our results emphasize the advantage of focusing on *several varieties of the same emotion* (rather than prototypical labels representing the entire domain). In our study, this modification added nuance to the characterization of the domain across languages by allowing us to determine which anger variants were most or least dissimilar on each of the investigated facets. Thirdly and finally, our study demonstrates that CMT-based research would benefit from *relating metaphorical source domains* (or rather, the main aspects profiled by them) *to established constructs* in emotion psychology. The classification of anger metaphors into 'semantic foci' allows us to make a first step towards a more fruitful dialogue between the two disciplines.

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Annex 1. ANGER-eliciting scenarios (Study 1)

Which words in your native language would you use to name the emotion(s) you would feel if you were in this situation? Write down several nouns (e.g., *fear*) and/or adjectives (e.g., *scared*) that would capture the nature of your feeling.

#	**Situation**
I	Although I had been working extremely hard for the last couple of months, my boss blamed me, in front of other people, for neglecting some tasks at work. In fact, the tasks in question were not supposed to be done by me.
II	My neighbours are in the habit of cooking terribly smelly food when I come home at night.
III	We sent our young son to a private school abroad; recently, in a phone conversation we learnt that he was being bullied by some of his older classmates.
IV	My computer crashed and I was not able to finish the work and meet a crucial deadline.
V	A colleague told very unpleasant, dirty jokes about 'the national character' of my countrymen at a party I attended and where everyone knew my nationality.

SECTION II

Constructing meaning in language (L1 and L2 acquisition)

On-line processing of verb-argument constructions

Visual recognition threshold and naming latency

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Ellis, O'Donnell, and Römer (2014) used free-association tasks to investigate knowledge of Verb-Argument Constructions (VACs). They demonstrated that English speakers have independent implicit knowledge of (i) verb frequency in the VAC, (ii) VAC-verb contingency, and (iii) verb prototypicality in terms of centrality within the VAC semantic network. They concluded that VAC processing involves rich associations, tuned by verb type and token frequencies and their contingencies of usage, which interface syntax, lexis, and semantics. However, the tasks they used, where respondents had a minute to think of the verbs that fitted in VAC frames like 'he __ across the…', 'it __ of the…', etc., were quite conscious and explicit. The current experiments therefore investigate the effects of these factors in on-line processing for recognition and naming. Experiment 1 tested the recognition of VAC exemplars from very brief, masked, visual presentations. Recognition threshold was affected by overall verb frequency in the language, by the frequency with which verbs appear in the VAC, and by VAC-verb contingency (ΔPcw). Experiment 2 had participants successively name VAC arguments as quickly as possible: first the VAC and then the preposition. Preposition naming latency was a function of verb frequency in the VAC. We consider the implications for the representation and processing of VACs.

Keywords: Construction Grammar, usage-based acquisition and processing, recognition threshold, naming latency, contingency, on-line processing

1. Background

Usage-based theories of Construction Grammar posit that language comprises many thousands of constructions – form-meaning mappings, conventionalized in the speech community, and entrenched as language knowledge in the learner's

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mind (Goldberg, 1995; Robinson & Ellis, 2008; Trousdale & Hoffmann, 2013). Usage-based approaches to language acquisition hold that schematic constructions emerge as prototypes from the conspiracy of memories of particular exemplars that language users have experienced (Ellis, O'Donnell, & Römer, 2012). This chapter investigates processing of abstract Verb-Argument Constructions (VACs) and its sensitivity to the statistics of usage in terms of verb exemplar type-token frequency distribution, VAC-verb contingency, and VAC-verb semantic prototypicality. It concentrates upon the recognition and naming of syntagmatic VAC forms. A companion paper (Ellis, 2016) focuses upon processing for meaning in lexical decision and semantic judgments.

VACs are schemata which bind patterns of lexical, morphological and syntactic language form to meaningful and functional interpretations. Goldberg and her collaborators use argument structure configurations involving nonce verbs to argue for the superiority of constructional meaning over lexical meaning (in particular, verb meaning) in determining the overall meaning of an utterance (Bencini & Goldberg, 2000; Goldberg & Bencini, 2005). Consider how your language experience allows you to interpret novel utterances such as "it mandools across the ground" or "the teacher spugged the boy the book." You know that *mandool* is a verb of motion and have some idea of how *mandooling* works – its action semantics. You know that *spugging* involves transfer, that the teacher is the donor, the boy the recipient, and that the book is the transferred object. How is this possible, given that you have never previously heard these verbs? Each word of the construction contributes individual meaning, and the verb meanings in these VACs is usually at the core. But the larger configuration of words as a whole carries meaning too. The VAC as a category has inherited its schematic meaning from the conspiracy of all of the examples you have heard. *Mandool* inherits its interpretation from the echoes of the verbs that you have heard occupy this VAC – words like *come, walk, move, …, scud, skitter and flit*. As you read these utterances, you parse them and identify their syntagmatic form: "it mandools across the ground" as a Verb Locative (VL) construction, "the teacher spugged the boy the book" as a double-object (VOO) construction. Then the paradigmatic associations of the types of verb that fill these slots are awakened: for the VL 'V *across* N' pattern *come, walk, move, …, scud, skitter and flit,* for VOO *give, send, pass, …, read, loan, and fax*.

If constructions are indeed learned like this, as schematic signs, as form-meaning pairings, then the general principles of associative learning and categorization should be evident in their processing (Ellis & Ogden, 2015). The learning and processing of cue-outcome contingencies should be affected by: (1) form frequency in the input, (2) contingency of form-function mapping, and (3) function (prototypicality of meaning).

1.1 Principles of the associative learning of categories

1.1.1 *Construction frequency*

Frequency of exposure promotes learning and entrenchment (e.g., Anderson, 2009; Ebbinghaus, 1885). Learning, memory and perception are all affected by frequency of usage: the more times we experience something, the stronger our memory for it, and the more fluently it is accessed. The more times we experience conjunctions of features, the more they become associated in our minds and the more these subsequently affect perception and categorization (Harnad, 1987; Lakoff, 1987). The last 50 years of psycholinguistic research has demonstrated language processing to be exquisitely sensitive to usage frequency at all levels of language representation: phonology and phonotactics, reading, spelling, lexis, morphosyntax, formulaic language, language comprehension, grammaticality, sentence production, and syntax (Ellis, 2002). Language knowledge involves statistical knowledge, so humans learn more easily and process more fluently high frequency forms. So, in particular, verbs which appear more often in particular VACs should be more associated with those frames, and processed faster.

1.1.2 *Contingency of form-function mapping*

Psychological research into associative learning has long recognized that while frequency of form is important, more so is contingency of mapping (Shanks, 1995). Consider how, in the learning of the category of birds, while eyes and wings are equally frequently experienced features in the exemplars, it is wings which are distinctive in differentiating birds from other animals. Wings are important features to learning the category of birds because they are reliably associated with class membership; eyes are neither. Raw frequency of occurrence is less important in categorization than is the contingency between cue and interpretation (Rescorla, 1968). Contingency/ reliability of form-function mapping and associated aspects of predictive value, information gain, and statistical association, are driving forces of learning. They are central in psycholinguistic theories of language acquisition (Ellis, 2006a, 2006b, 2008; Gries & Wulff, 2005; MacWhinney, 1987). Lexical cues which are more faithful to a VAC should be more telling.

There are many available measures of contingency. In our research, we use the one-way dependency statistic ΔP (Allan, 1980) shown to predict cue-outcome learning in the associative learning literature (Shanks, 1995) as well as in psycholinguistic studies of form-function contingency in construction usage, knowledge, and processing (Ellis, 2006a; Ellis & Ferreira-Junior, 2009; Gries & Ellis, 2015).

Consider the contingency table showing the four possible combinations of the presence or absence of a VAC and a verb:

	Outcome	No outcome
Cue	*a*	*b*
No cue	*c*	*d*

a, b, c, d represent frequencies, so, for example, *a* is the number of times the cue and the outcome co-occurred; *c* is the number of times the outcome occurred without the cue; etc.

ΔP is the probability of the outcome given the cue minus the probability of the outcome in the absence of the cue. When these are the same, when the outcome is just as likely when the cue is present as when it is not, there is no covariation between the two events and ΔP = 0. ΔP approaches 1.0 as the presence of the cue increases the likelihood of the outcome and approaches –1.0 as the cue decreases the chance of the outcome – a negative association.

$$\Delta P = P(O|C) - P(O|\neg C) = \frac{a}{a+b} - \frac{c}{c+d}$$

ΔP is a directional measure. We can consider the association between a VAC as cue and a particular verb type as the outcome (we will call this ΔPcw for construction → word). Alternately we can consider the association between a verb as cue and a particular VAC as the outcome (ΔPwc).

1.1.3 *Function (prototypicality of meaning)*

Categories have graded structure, with some members being better exemplars than others. In the prototype theory of concepts (Rosch & Mervis, 1975; Rosch, Mervis, Gray, Johnson, & Boyes-Braem, 1976), the prototype as an idealized central description is the best example of the category, appropriately summarizing the most representative attributes of a category. As the typical instance of a category, a prototype serves as the benchmark against which surrounding, less representative instances are classified. In semantic network theories of meaning, related concepts are more closely and strongly connected, and when one concept is activated, so activation spreads to neighboring nodes (Anderson, 1983). In these views, the prototype has two advantages: The first is a frequency factor: the greater the token frequency of an exemplar, the more it contributes to defining the category, and the greater the likelihood it will be considered the prototype (Rosch & Mervis, 1975; Rosch et al., 1976). Thus it is the response that is most associated with the concept in its own right. But beyond that, it gets the network centrality advantage. When any response is made, it spreads activation and reminds other members in the set. The prototype is most connected at the center of the network and, like Rome, all roads lead to it. Thus it receives the most spreading activation. Ellis et al. (2014) consider spreading activation as it might apply to VACs. As symbolic

form-function mappings, the VAC lexico-syntactic frame is associated by usage experience with a network of meanings. When the VAC is activated, prototypical verb meanings are more readily awakened.

Previous research which investigated these ideas involved two steps, first an analysis of VACs in a large corpus of representative usage, and second an analysis of the processing of these VACs by fluent native speakers.

1.2 Corpus analysis of VACs in usage

Ellis and O'Donnell (2011, 2012) investigated the type-token distributions of 20 Verb-Locative (VL) VACs such as 'V(erb) *across* n(oun phrase)' in a 100-million-word corpus of English usage. The other locatives sampled were *about, after, against, among, around, as, at, between, for, in, into, like, of, off, over, through, towards, under,* and *with*. They searched a dependency-parsed version of the British National Corpus (BNC, 2007) for specific VACs previously identified in the Grammar Patterns volume resulting from the COBUILD corpus-based dictionary project (Francis, Hunston, & Manning, 1996). The details of the linguistic analyses, as well as subsequently modified search specifications in order to improve precision and recall, are described in Römer, O'Donnell, and Ellis (2015). This corpus linguistic research demonstrated:

1. The frequency profile of the verbs in each VAC follows a Zipfian profile (Zipf, 1935) whereby a few verbs take the lion's share: the highest frequency types account for the most linguistic tokens. Zipf's law states that in human language, the frequency of words decreases as a power function of their rank: the most frequent verb occurs roughly twice as often as the second most frequent, roughly three times as often as the third most frequent, etc.
2. VACs are selective in their verb form family occupancy: individual verbs select particular constructions; particular constructions select particular verbs; there is high contingency between verb types and constructions. This means that the Zipfian profiles seen in (1) are not those of the verbs in English as a whole – instead their constituency and rank ordering are special to each VAC.
3. The most frequent verb in each VAC is prototypical of that construction's functional interpretation, albeit generic in its action semantics.
4. VACs are coherent in their semantics. This was assessed using WordNet (Miller, 2009), a distribution-free semantic database based upon psycholinguistic theory, as an initial resource to investigate the similarity/distance between verbs. Then networks science, graph-based algorithms (de Nooy, Mrvar, & Batagelj, 2010) were used to build semantic networks in which the nodes represent verb types and the edges strong semantic similarity for each

VAC. Standard measures of network density, average clustering, degree centrality, transitivity, etc. were then used to assess the cohesion of these semantic networks and verb type connectivity within the network. Betweenness centrality was used as a measure of a verb node's centrality in the VAC network (McDonough & De Vleeschauwer, 2012). In semantic networks, central nodes are those which are prototypical of the network as a whole.

These corpus analyses thus demonstrated that these psychological principles of categorization and the associative learning of categories applied in usage. But what about in human cognition?

1.3 Analysis of knowledge of VACs

Ellis et al. (2014) used free association and verbal fluency tasks to investigate verb-argument constructions (VACs) and the ways in which their processing is sensitive to these statistical patterns of usage (verb type-token frequency distribution, VAC-verb contingency, verb-VAC semantic prototypicality). In experiment 1, 285 native speakers of English generated the first word that came to mind to fill the V slot in 40 sparse VAC frames such as 'he __ across the….', 'it __ of the….', etc. In experiment 2, 40 English speakers generated as many verbs that fit each frame as they could think of in a minute. For each VAC, they compared the results from the experiments with the corpus analyses of usage described above for step 1. For both experiments, multiple regression analyses predicting the frequencies of verb types generated for each VAC showed independent contributions of (i) verb frequency in the VAC, (ii) VAC-verb contingency (ΔPcw), and (iii) verb prototypicality in terms of centrality within the VAC semantic network. Ellis et al. (2014) contend that the fact that native-speaker VACs implicitly represent the statistics of language usage implies that they are learned from usage.

1.4 Motivations for the current experiments

These findings show that lexis, syntax, and semantics are richly associated in VAC processing. However, free-association tasks can be quite conscious production tasks, especially those achieved over the timespan of a minute. All sorts of conscious strategies can come to play. It is difficult to conclude, therefore, that these results imply that VACs are "mentally represented" as part of the constructicon. Although the findings are compatible with that idea, they are far from conclusive. For example, the native speakers in the one minute tasks might be building ad hoc categories (Barsalou, 2010) based on information (such as frequency information, contingencies, etc.) in order to engage in the association task. An

ad hoc category is a novel category constructed spontaneously to achieve a goal relevant in the current situation (e.g., constructing *ways of catching moles* while seeing their destruction of the back lawn). These categories are novel – they have not been entertained previously. They are constructed spontaneously and do not reside as knowledge structures in long-term memory waiting to be retrieved. They help achieve a task-relevant goal by organizing knowledge relevant to the current situation in ways that support effective goal pursuit.

Therefore, none of the data provided in the free-association data force the conclusion that frequency, contingency, and prototypicality of verb-frame pairings are mentally represented as a separate construction. The 'first verb that comes to mind' variants of the task are more compelling in this respect than the one-minute tasks, but still further studies using a range of on-line processing tasks are needed to explore the generality of these findings and their implications for representation. The more these tasks tap implicit, automatic processing, the closer they are to reflecting language as it is stored rather than as it is marshaled (Ellis, 1994; Ellis, Loewen, Erlam, Philp, & Reinders, 2009; Segalowitz, 2010). In this chapter we report two experiments which focus upon the statistical binding of syntagmatic VAC forms, firstly for recognition, then for naming. Ellis (2016) reports a parallel line of investigations focusing on paradigmatic associations and processing for meaning.

2. Experiment 1: VAC recognition threshold

There is no more implicit, automatic perceptual processing task than recognition out of context from exposure durations close to threshold. The measurement of word-recognition threshold was first performed by Cattell (1886): "The time it takes to see and name objects." His was the first demonstration that high-frequency words are recognized more quickly than low-frequency words. Howes and Solomon (1951) report the results of two experiments using controlled lists of words chosen to range widely over frequency scales, showing that the visual duration of a word, measured tachistoscopically by an ascending method of limits, was related linearly to the logarithm of the relative frequency with which that word appeared in the Thorndike-Lorge (Thorndike & Lorge, 1944) word counts: the product-moment correlations for the two variables ranged from −0.76 to −0.83. Effects of frequency upon recognition threshold have now been replicated in thousands of experiments, and they have led to the general assumption that there are perceptual recognition units for words, sometimes known as 'logogens' (Morton, 1969), whose thresholds are tuned as a result of experience so that higher frequency words require less perceptual evidence before

they signal recognition (Miller & Selfridge, 1950). Visual pattern masking has been developed as a technique to more precisely achieve liminal presentation. It involves the reduction or elimination of the visibility of a brief visual stimulus, called the "target", by the presentation of a second brief stimulus, called the "mask", presented in the same location. It has been widely used in the study of the visual perception of words (Allport & Funnell, 1981; Dehaene & Changeux, 2011; Marcel, 1983).

This experiment therefore adopts this technique to study the visual recognition of different exemplars of VACs and to look at the effects of Verb-Corpus Frequency (this is the individual word frequency that Cattell studied), Verb-VAC frequency (the conditional frequency of the verb in the VAC), VAC-verb contingency (ΔPcw), and Verb-VAC semantic prototypicality upon recognition threshold.

2.1 Participants

The participants were 50 university students at a large mid-western university taking an introductory course in psychology and participating in the subject pool for course requirement. The age range was 17–21 (M = 18.42, SD = 0.76). Ten were male, forty were female. Thirty six reported knowing one, eight knowing two, and six knowing three languages. Forty seven reported that English was their first language.

2.2 Method

2.2.1 *Stimulus materials*

Ellis et al. (2014) identified the verb lemmas which together covered the top 95% of verb token uses in the BNC. They then counted their token frequencies in the BNC (Verb-Corpus Frequency), along with the frequency with which they occupied Verb-Locative (VL) VACs such as 'V(erb) *across* n(oun phrase)' (Verb-VAC frequency), the contingency between construction and word (ΔPcw), and the semantic prototypicality of the verb in the construction (betweenness centrality). The range of VL VACs included *about, across, against, among, around, between, for, into, like, of, off, over, through, towards, under, with*. The current experiment required a subset of stimuli which as far as possible factorially manipulated these dimensions, keeping them as independent as possible. The first step, therefore, was to regress each of the factors against the others. So, for example, log10VACfrequency was regressed against log10corpusfrequency, log10ΔPcw, and log10centrality, and the log10VACfrequency residuals were saved for each verb. In similar

fashion, log10 ΔPcw was regressed against log10corpusfrequency, log10VACfrequency, and log10centrality, and the log10ΔPcw residuals were saved for each verb. And so on. Thus, for a verb-VAC pairing, we knew whether a verb was particularly high (or low) on one of these dimensions against the background of what might be expected from the levels of the other predictors. For each VAC, we then chose example verbs which reflected high, medium, and low semantic prototypicality, high, medium, and low VAC frequency, high, medium, and low ΔPcw. We also selected high (+), medium (0), and low (–) corpus frequency verbs which never appear in the construction. Examples for the case of 'V *about* n' are sem+ *move about*; sem0 *float about*; sem– *lie about*; vacfreq+ *chat about*; vacfreq0 *jump about*; vacfreq– *point about*; ΔP+ *talk about*; ΔP0 *understand about*; ΔP– *tell about*; never *reduce about*; never *catch about*; never *appoint about*. At very brief presentations, there is no time for readers to move their eyes and refixate. Therefore the target objects have to lie within foveal (<2°) and certainly within the parafoveal range (<5° of visual angle). For these reasons, in these experiments, we stripped the VACs down from 'V(erb) preposition n(oun phrase)' to their bare minimum, i.e., the verb preposition collocation. The complete set of 192 stimuli so constructed are shown in Appendix 1 alongside their Verb-Corpus Frequency, Verb-VAC frequency, VAC-verb contingency, and Verb-VAC semantic prototypicality. These steps did not achieve complete orthogonality, but they did reduce the association of these predictors from the higher levels typically found in natural language to those correlations shown in Table 1.

Table 1. The intercorrelations of the predictor variables for the stimulus set

	L10corpusfreq	**VACLength**	**L10VACfreq**	**L10ΔPcw**	**L10centrality**
L10corpusfreq	1.000				
VACLength	−0.216	1.000			
L10VACfreq	0.202	−0.221	1.000		
L10ΔPcw	−0.035	0.019	0.433	1.000	
L10centrality	0.449	−0.214	0.436	0.235	1.000

2.2.2 *Procedure*

The experiment was scripted in *PsychoPy* v1.80.03 (Peirce, 2007) and run on iMac computers. Participants were instructed that they would be shown short phrases for a very brief exposure time. First they would see a jumble of letters, then the phrase would appear, and then it will be immediately replaced by another jumble of letters. Their task was to try to read the phrase. After it has disappeared, a text box appeared for them to type in what they saw. Participants

pressed a key whenever they were ready for the next trial. This caused a pattern-mask made up of line of randomly assorted letters of the alphabet to appear mid-screen. This was immediately replaced by the phrase shown for its designated exposure time. As soon as the phrase disappeared, it was replaced by another pattern mask comprising a new line of randomly assorted letters of the alphabet. Different random masks were used with each trial. The experiment began with sixteen practice items which paired verbs not used in the experiment proper with the VAC prepositions (e.g. *bring about, meet across, set against*). At the beginning of the experiment, phrase exposure time was 80 ms. Throughout the experiment, the exposure time was manipulated after each trial so that, if the response was correct, it was decreased by 10ms; if the response was incorrect, it was incremented by 10ms. Thus by the end of the practice items, the exposure time had been titrated to each participant so that they were performing at approximately 50% levels. The 192 experimental items were next presented in random order (still with reactive staircasing of exposure times). Over these 192 trials, the staircase entailed that participants were approximately 50% correct. Items which were answered incorrectly (approximately 96 of them) were collected into a new stimulus list which was then re-run as a batch 2. The staircase entailed that these rather more difficult items were shown in batch 2 at a longer exposure time than the first batch. Over these approximately 96 batch 2 trials, items which were answered incorrectly (approximately 48 of them) were collected into a new stimulus list which was then re-run as a batch 3. Five such batches were run, so that each participant answered correctly approximately 97% of the items over the course of the experiment. We recorded the exposure time at which a phrase was first correctly identified (its recognition threshold), as well as any incorrect answers given previously. The experiment as a whole took between 45 minutes and an hour.

2.3 Results

2.3.1 *Exposure time*

Statistical analyses were performed using R (R Development Core Team, 2012). The data files for all participants were concatenated and the trials where the participants correctly reported the stimulus pair were selected. Exposure time data for each participant were graphed. Four participants were seen to have very different patterns of responding from the rest – they were much slower and had long runs of simply pressing the 'return' key. Their data was therefore removed from the sample, leaving 46 participants in all. The staircase and resampling procedure

meant that, over the course of the experiment, participants correctly apprehended between 180 and 186 (94–97%) of the 192 items. The mean recognition threshold over all participants and items in the experiment was 0.15 sec (*SD* = 0.06).

To assess the independent effects of our predictor variables, we performed a generalized linear mixed model (glmm) of log10 exposure time against the five predictors Stimulus Length in Letters, log10 Verb-Corpus Frequency, log10 Verb-VAC frequency, log10 VAC-verb contingency, and log10 Verb-VAC semantic prototypicality, with participant and VAC as independent random intercepts using the R package lme4 (Bates, Maechler, Bolker, & Walker, 2015). The summary results are shown in Table 2 where it can be seen that there are separate independent effects of Stimulus Length in Letters ($t = 15.35$), log10 Verb-Corpus Frequency ($t = -2.57$), log10 Verb-VAC frequency ($t = -8.02$), and log10 VAC-verb contingency ($t = -3.14$). The R^2 for this analysis was 0.642.

Table 2. A GLMM predicting recognition threshold

Random effects:

Groups	Name	Variance	Std. dev.
Participant	(Intercept)	0.016714	0.1293
VAC	(Intercept)	0.000397	0.0199
	Residual	0.009958	0.0998

Number of obs: 8424, groups: participant, 46; VAC, 16

Fixed effects:

	Estimate	Std. error	t value
(Intercept)	−0.978653	0.027922	−35.1
L10corpusfreq	−0.005511	0.002147	−2.6**
L10VACfreq	−0.006829	0.000851	−8.0**
L10ΔPcw	−0.016499	0.005255	−3.1**
L10centrality	0.000286	0.005498	0.1
VACLength	0.009966	0.000649	15.4**

$R^2 = 0.642$

In order to graph these separate effects, we used the R *effects* library by Fox (2003). In order to have a model without random intercepts, we ran a glm of the log10 recognition threshold against our five predictors. These effects are shown to the same scale in Figure 1.

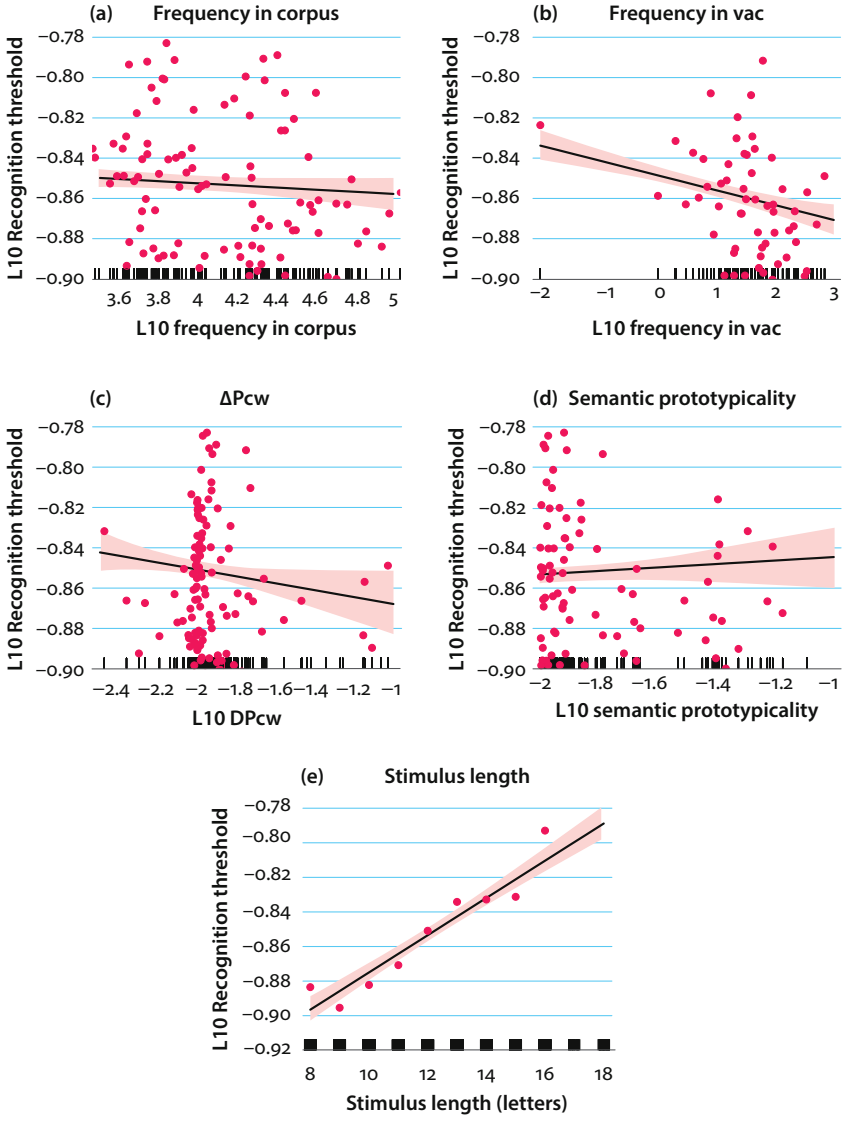

Figure 1. Independent effect sizes of (a) frequency of the verb in the corpus, (b) frequency of the verb in the VAC, (c) VAC-verb contingency (ΔPcw), (d) verb semantic prototypicality (betweenness centrality) upon recognition threshold and (e) stimulus length

2.3.2 *Errors*

Over the course of the experiment, participants made errors when stimuli were presented at sub-threshold levels. These errors are informative. Table 3 lists, in decreasing frequency, the forty most common misidentification errors alongside their correct target. A number of patterns are visible:

1. Participants report whole word, rather than partial word responses.
2. They are much more likely to report the verb correctly than the preposition. We assume this is a result of left-to-right reading.
3. There are misspellings e.g., *occured, concieves,* and *concide*.
4. There are many errors relating to 'V *towards* n' where the participants report seeing *toward* (see lines 4, 8, 10, 11, 12, 15, 18, 28, 29). This is a result of using material sampled from the British National Corpus with US students. In US English, *toward* is the norm. In the BYU-BNC (Davies, 2004–) *toward* occurs 1153 times, *towards* 27,017, a ratio of 1:23.4; In the Corpus of Contemporary American English COCA (Davies, 2008–) *toward* occurs 119,780 times, *towards* 20,758, a ratio of 5.77:1. Respondents produce the spelling with which they are familiar.
5. When respondents misidentify the preposition, they substitute that relating to a VAC in which the verb is more likely to occur. BYU-BNC statistics for the frequency of the verb lemma as a collocate immediately left adjacent to the preposition are shown for the given response and for the target in Table 3. Illustrative relative frequencies are *understood that* 2099 : *understood about* 113; *get along* 224 : *get among* 10; *plunged into* 363 : *plunged like* 1; *opened with* 318 : *opened between* 10; *cares about* 814 : *cares against* 0. We suspect that top-down factors such as these interact with bottom-up information regarding the letter string similarity of preposition target and error.

2.4 Discussion

These results demonstrate that VAC visual recognition threshold is affected by two frequency effects – frequency of the verb in the language, and conditional frequency of the verb in the VAC. There are also significant independent effects of VAC-verb contingency (ΔPcw). We have already described the many demonstrations of frequency upon lexical recognition. The conditional frequency and contingency effects show that the recognition system is also tuned to sequential statistics: language users preferentially process more probable multi-word constructions and those where the verb is a more reliable cue to the construction.

Table 3. The forty most frequent recognition errors in Experiment 1

Error #	Error freq in NC	Error	Error freq	Target	Target freq in NC
1		occured among	68	occurred among	
2	11	considered about	61	considered around	0
3	13	experiences of	57	experiences off	0
4		makes toward	48	makes towards	
5	814	cares about	46	cares against	0
6		concide between	45	coincide between	
7	371	reminds of	45	reminds for	1
8		extends toward	42	extends towards	
9	45	folded over	41	folded under	7
10		helps toward	40	helps towards	
11		includes toward	38	includes towards	
12		stretch toward	38	stretch towards	
13		conceives against	34	conceives against	
14	6	found over	34	found under	5
15		help towards	34	helps towards	
16	318	opened with	34	opened between	10
17	1	concentrate about	28	concentrate around	22
18		turned toward	28	turned towards	
19	363	plunged into	27	plunged like	1
20	2099	understood that	27	understood about	113
21	0	abolished about	26	abolished around	0
22	2	concluded over	26	concluded under	1
23	12	involves with	25	involves through	9
24		leapt toward	25	leapt towards	
25	1	inserts of	24	inserts off	0
26	10	collapsed over	23	collapsed under	49
27	224	get along	23	get among	10
28		leap towards	23	leapt towards	
29		lept towards	23	leapt towards	
30	6	points around	23	points about	4
31	309	turned around	23	turned towards	0
32	32	claimed over	22	claimed under	42
33		disagree with	22	disagreed with	
34	2	gained between	22	granted between	7
35	25	provide of	21	provide off	0
36	0	seems through	21	stems through	0
37	9	associates for	20	associates of	0
38	323	reduced from	20	reduced about	1
39	22	circulates about	19	circulates among	25
40	1	ignores about	19	ignores among	0

In this experiment the stimuli are two word sequences that were stripped down from VL VACs. At least, therefore, these finding illustrate that language users are sensitive to syntagmatic associations (i.e., the collocation of verbs and prepositions), and to contingency. In contrast, recognition threshold did not seem to be sensitive to semantic factors. We will return to these matters in more detail in the general discussion.

3. Experiment 2: Naming latency

There is no time for conscious deliberation when you are asked to name visually presented words as quickly as possible. Since Cattell (1886), there have been many demonstrations that high frequency words are named more rapidly than low frequency ones (Balota, Cortese, Sergent-Marshall, Spieler, & Yap, 2004; Balota, Ferraro, & Connor, 1991; Forster & Chambers, 1973).

Cattell also was the first to demonstrate the effects of sequential dependency:

> I find it takes about twice as long to read (aloud, as fast as possible) words which have no connexion as words which make sentences, and letters which have no connexion as letters which make words. When the words make sentences and the letters words, not only do the processes of seeing and naming overlap, but by one mental effort the subject can recognize a whole group of words or letters, and by one will-act choose the motions to be made in naming them.
>
> (Cattell, 1886, p. 64)

The current experiment aims to assess the degree to which verb-VAC connexions [in terms of Verb-VAC frequency, contingency (ΔPcw), and semantic prototypicality of the verb in the construction (betweenness centrality)] affect the naming latency of the VAC preposition.

3.1 Participants

The participants were 41 university students at a large mid-western university taking an introductory course in psychology and so volunteering in the subject pool for course requirement. The age range was 17–31 (M = 19.02, SD = 2.20). Twelve were male, 29 were female. Twenty five self-reported as knowing one, twelve knowing two, and eight knowing three languages. Thirty eight reported that English was their first language. The audio recordings for four participants were too soft to be analyzable, and so 37 participants provided analyzable data.

3.2 Method

3.2.1 *Stimulus materials*

We used the complete set of 192 stimuli in Appendix 1. To these we added 64 stimuli, four for each preposition, where the verb was replaced with a string of 5 xs (xxxxx), although we only analyzed the real-word trials.

3.2.2 *Procedure*

The experiment was scripted in PsychoPy v1.80.03 (Peirce, 2007) and run on iMac computers. Participants were instructed that they would be shown two words, one after another. Their task was to read the first one as quickly as possible after it appears, and then the second one as quickly as possible after it appears. Since we were recording their responses and how fast they made them, they were to speak loudly and clearly. Participants pressed the space bar when they were ready for the next trial. Trial order was randomized individually for each participant. On each trial, at 300ms, a beep started for 200ms. The onset of the beep was synchronous with the appearance of the first word, the verb, presented in Arial font, 0.15 letter height, slightly above mid-screen. This was exposed for 1 second in all. At 1500ms, a beep started for 200ms. The onset of the beep was synchronous with the appearance of the second word, the preposition, presented mid-screen in Arial font, 0.15 letter height. This too was exposed for 1 second in all. The stimulus-onset asynchrony between verb and preposition was thus 1200ms. Throughout the trial we recorded audio using the internal microphone. At the end of each trial we saved this as a .wav file. The experiment as a whole took about 30 minutes to 40 minutes.

We post-processed the audio files first by concatenating them using xACT (Brown, 2014). A research assistant then loaded each participant file into Audacity 2.0.2 (Audacity Team, 2014) and went through each trial marking and labeling the section between beep 1 onset and the onset of the participant's naming of word 1, and between beep 2 onset and the onset of the participant's naming of word 2. These voice onset times in ms. (VOTs) were exported for statistical analysis. Differences in word 2 VOT as a consequence of the nature of word 1 could thus be assessed. Trials where the participant failed to make a response, or a loud enough response, were marked and removed from analysis. The VOT data files for each participant were matched to their random trial sequence and these were then concatenated into a data file which was analyzed using R (R Development Core Team, 2012).

3.3 Results

The mean Word 2 naming latency over all participants and items in the experiment was 0.536 sec (*SD* = 0.08). We performed a glmm of log10 Word 2 VOT against the five predictors Stimulus (preposition) Length in Letters, Verb-Corpus Frequency, Verb-VAC frequency, VAC-verb contingency, and Verb-VAC semantic prototypicality, with participant and VAC as independent random intercepts using the R package lme4 (Bates et al., 2015). The summary results are shown in Table 4 where it can be seen that there was just one independent effect upon the latency of preposition naming in the context of a preceding verb. This was the Verb-VAC frequency ($t = 3.65$): the more the verb appeared with that VAC preposition in the language, the faster that preposition was named when it followed that verb. The R^2 for this analysis was 0.404.

Table 4. A GLMM predicting word 2 (preposition) naming latency

Random effects:

Groups	Name	Variance	Std. dev.
Subject	(Intercept)	0.0016207	0.04026
VAC	(Intercept)	0.0004004	0.02001
	Residual	0.0029623	0.05443

Number of obs: 7061, groups: subject, 37; VAC, 16

Fixed effects:

	Estimate	Std. error	t value
(Intercept)	−0.3474839	0.0207413	−16.753
L10corpusfreq	−0.0009150	0.0012585	−0.727
L10VACfreq	−0.0018076	0.0004949	−3.653**
L10ΔPcw	−0.0011179	0.0030943	−0.361
L10centrality	−0.0042802	0.0032778	−1.306
PrepositionLength	0.0027654	0.0032336	0.855

$R^2 = 0.404$

We used the R *effects* library (Fox, 2003) to plot the separate effects from a glm of the log10 recognition threshold against our five predictors in the absence of random intercepts. These effects are shown to the same scale in Figure 2.

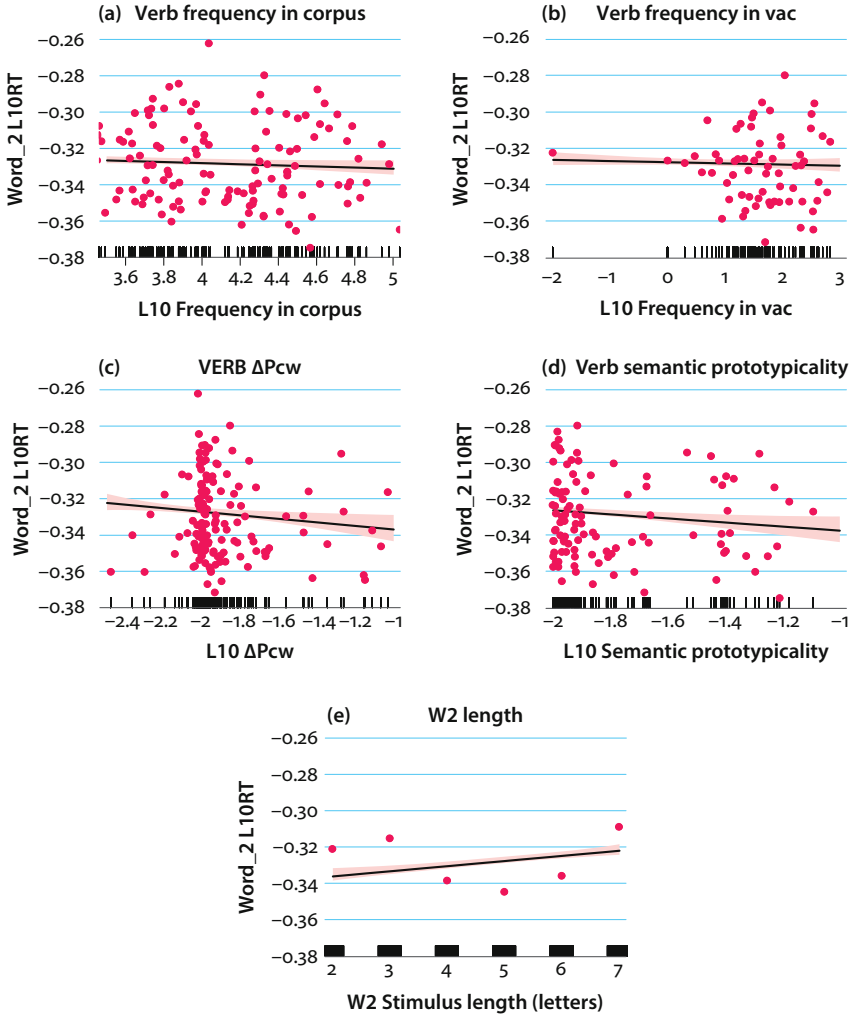

Figure 2. Independent effect sizes of (a) frequency of the verb in the corpus, (b) frequency of the verb in the VAC, (c) VAC-verb contingency (ΔPcw), (d) verb semantic prototypicality (betweenness centrality) upon word 2 (preposition) naming latency and (e) stimulus length

4. General discussion

4.1 Recognition threshold

Experiment 1 showed that visual perceptual recognition of VACs was a function of Stimulus Length (Verb plus preposition) in Letters (t = 15.35), Verb-Corpus Frequency (t = −2.57), Verb-VAC frequency (t = −8.02), and VAC-verb contingency (t = −3.14). It is standard that the recognition of individual words is a function of their prior experience as indexed by word frequency in the language. Therefore, the finding that recognition of VACs is affected by the frequency of the verb is no surprise. The effect of Verb-VAC frequency is more potent: perception is sensitive to the pairing of the verb and the VAC.

This could reflect sensitivity to syntagmatic sequence, i.e. their collocation, or it could reflect sensitivity to the binding of the verb to the VAC as a whole, meaning and all. There are many other demonstrations that language users have implicit knowledge of sequences of language (for reviews see Ellis, 1996, 2001, 2012). For example, reading time is affected by collocational and sequential probabilities. Bod (2001), using a lexical-decision task, showed that high-frequency three-word sentences such as "I like it" were reacted to faster than low-frequency sentences such as "I keep it" by native speakers. Ellis, Frey, and Jalkanen (2009) used lexical decision to demonstrate that native speakers preferentially process frequent verb-argument and booster/maximizer-adjective two-word collocations. Durrant and Doherty (2010) used lexical decision to assess the degree to which the first word of low- (e.g., *famous saying*), middle- (*recent figures*), high- frequency (*foreign debt*) and high frequency and psychologically-associated (*estate agent*) collocations primed the processing of the second word in native speakers. The highly frequent and high-frequency associated collocations evidenced significant priming. Arnon and Snider (2010) used a phrasal decision task ('Is this phrase possible in English or not?') to show that comprehenders are also sensitive to the frequencies of compositional four-word phrases: more frequent phrases (e.g. *don't have to worry*) were processed faster than less-frequent phrases (*don't have to wait*) even though these were matched for the frequency of the individual words or substrings. Tremblay, Derwing, Libben, and Westbury (2011) examined the extent to which lexical bundles (LBs, defined as frequently recurring strings of words that often span traditional syntactic boundaries) are stored and processed holistically. Three self-paced reading experiments compared sentences containing LBs (e.g., *in the middle of the*) and matched control sentence fragments (*in the front of the*) such as *I sat in the middle/front of the bullet train*. LBs and sentences containing LBs were read faster than the control sentence fragments in all three experiments.

So much for reading and for lexical decisions. However, here we use recognition threshold which is arguably the purest measure of perceptual recognition, and we have shown effects of first order and second order probabilities, and, on top of these, an additional recognition advantage for VACs where the verb has a higher contingency with the VAC than with other VACs, i.e. where it is a better predictor of that VAC over other ones. It is clear that our participants' language processing systems have been tuned by experience of usage to represent theses associations and their strengths.

4.2 Naming

Experiment 2 demonstrated effects of Verb-VAC frequency ($t = -3.65$) upon preposition naming latency. Verbs which appear more often in a VAC in usage prime the retrieval of the preposition name. We are scrutinizing VAC preposition access here, so the lack of effect of verb frequency is not surprising. It is less clear why there is an effect of contingency (ΔPcw) upon VAC recognition, but not upon preposition naming. Further research is needed here.

4.3 Comparison of findings with those from free association tasks

Both of the current experiments replicate the findings of Ellis et al. (2014) in showing effects of Verb-VAC conditional probability upon on-line processing, and Experiment 1 likewise shows effects of verb-VAC contingency. What is not replicated here are effects of semantic prototypicality. We believe that this is because the present experiments focus upon the statistical binding of syntagmatic VAC forms for recognition or naming. Ellis (2016) reports a parallel line of investigations focusing on paradigmatic associations and on-line processing for meaning where two experiments demonstrate robust effects of semantic prototypicality upon lexical decision. These confirm findings of spreading activation between words in lexical decision tasks as discovered by Meyer and Schvaneveldt (1971), a finding that revolutionized our understanding of the mental lexicon. In so doing they extend the phenomenon to the processing of grammatical constructions.

The absence of semantic effects in the present experiments parallels research on lexical processing. In a study of the lexical decision and naming of 2,428 monosyllabic words, Balota et al. (2004) found that semantic factors such as imageability and the semantic connectivity between a word and other words had effects above and beyond other lexical and sublexical factors such as frequency and neighborhood density, but that lexical decision was more highly affected than naming. Further research and more sophisticated analyses by Baayen, Feldman,

and Schreuder (2006) revealed that most of the semantic predictors that are significant for lexical decision are irrelevant for word naming, confirming earlier findings that visual lexical decision shows a greater sensitivity to semantic variables (Seidenberg & McClelland, 1989a; Seidenberg & McClelland, 1989b).

4.4 Limitations

There are many limitations to our study. The major ones we know about that come to mind are as follows. Recognition threshold is arguably the purest measure of perceptual recognition, though even this procedure is subject to higher-level effects in that a person identifying highly degraded stimuli may well engage in sophisticated guessing where they are more likely to guess higher frequency items: one cannot infer that a variable is influencing perceptual identification in masked recognition experiments without taking into consideration all of the potential guessing biases that a participant brings with them to the experimental setting (Catlin, 1973). Then again, in every instance of everyday processing we use our expectations and biases to try to determine the most appropriate interpretation.

Stripping down the VAC to the verb-preposition collocation adds problematic confounds to our interpretation. Consider, for example, the verb-preposition collocation *throw up*. If this were presented to subjects, then whatever reaction they had could be due to *throw up* as an intransitive prepositional verb (e.g., He threw up because he had too much to eat), or as an idiomatic transitive phrasal verb (e.g., He threw up his hands in despair), or as a compositional transitive phrasal verb (e.g., He threw up his car keys to her). Thus, there is an as yet unidentified amount of variability on the data that may create, amplify or weaken the correlations found here. We are grateful to an anonymous reviewer for pointing this out.

However hard we tried, it was impossible to achieve a sample of stimulus items where the predictor variables were completely orthogonal. Furthermore, as can be seen from the scatterplots overlaid upon the effects plots in Figures 1 and 2, some of our variables, particularly contingency, are patchily distributed.

4.5 Conclusions

We set out on these two experiments concerned that our previous findings of effects upon VAC processing in free association tasks might reflect conscious processing and the use of *ad hoc* categories. We have replicated their generality in speeded automatic on-line processing tasks. Frequency and conditional frequency effects were evident in both perceptual recognition and naming. Contingency (ΔPcw) was additionally influential in recognition. We conclude therefore that

speeded automatic on-line VAC processing involves rich associations, tuned by verb type and token frequencies and their contingencies of usage, which probabilistically bind lexis and syntax in VAC recognition and naming.

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Appendix A

The complete set of 192 stimuli with their Verb-Corpus Frequency, Verb-VAC frequency, VAC-verb contingency (ΔPcw), and Verb-VAC semantic prototypicality statistics. For each VAC, there are verbs in Stimulus Classes which reflected high, medium, and low semantic prototypicality (sem+, sem0, sem-), high, medium, and low VACfrequency, (vacfreq+, vacfreq0, vacfreq−), high, medium, and low contingency (ΔPcw+, ΔPcw0, ΔPcw−), and high, medium, and low corpus frequency verbs which never appear in the construction (never).

Stimulus class	VAC	Verb lemma	Verb corpus frequency	Verb frequency in VAC	Contingency ΔPcw	Prototypicality betweenness centrality
ΔP−	About	tell	72651	60	−0.001616	0.031554
ΔP+	About	talk	28867	3832	0.156649	0.056935
ΔP0	About	understand	21977	40	0.000414	0.001054
never	About	appoint	7555	0	−0.1	0
never	About	catch	13890	0	−0.1	0
never	About	reduce	17560	0	−0.1	0
sem−	About	lie	13190	90	0.002974	0.000123
sem+	About	move	37573	74	0.000939	0.11688
sem0	About	float	1861	3	1.90E-05	0
vacfreq−	About	point	13693	1	−0.00073	0
vacfreq+	About	chat	1264	63	0.002531	0
vacfreq0	About	jump	4947	4	−0.000114	0
ΔP−	Across	see	184478	15	−0.007532	0.01125
ΔP+	Across	walk	19994	243	0.045077	0.071111
ΔP0	Across	ship	1233	1	0.000121	0
never	Across	allow	31708	0	−0.1	0
never	Across	define	9306	0	−0.1	0
never	Across	predict	3709	0	−0.1	0
sem−	Across	live	31402	14	0.000894	0.000852
sem+	Across	hit	10278	3	−8.00E-06	0.029071
sem0	Across	swim	2151	19	0.003491	0.001779
vacfreq−	Across	follow	41428	1	−0.002142	0
vacfreq+	Across	flash	1543	32	0.005997	0.001457
vacfreq0	Across	chase	2008	3	0.000457	3.50E-05
ΔP−	Against	unite	1306	14	0.001487	0.005424
ΔP+	Against	vote	5185	217	0.02389	0
ΔP0	Against	settle	7061	4	4.80E-05	0.005604
never	Against	call	51741	0	−0.1	0
never	Against	care	7607	0	−0.1	0
never	Against	conceive	1757	0	−0.1	0
sem−	Against	stand	30620	173	0.017555	0.002571

Stimulus class	VAC	Verb lemma	Verb corpus frequency	Verb frequency in VAC	Contingency ΔPcw	Prototypicality betweenness centrality
sem+	Against	break	18399	9	−3.30E-05	0.037351
sem0	Against	crash	2160	29	0.00311	0.002037
vacfreq−	Against	collect	7727	1	−0.000324	0
vacfreq+	Against	brush	1955	74	0.008136	0.001034
vacfreq0	Against	advance	2800	4	0.000288	0.002428
ΔP−	Among	get	211788	15	−0.006672	0.040913
ΔP+	Among	occur	15351	27	0.008581	0.000957
ΔP0	Among	vanish	1497	2	0.000615	0.00063
never	Among	add	26641	0	−0.1	0
never	Among	devoted	2074	0	−0.1	0
never	Among	ignore	7043	0	−0.1	0
sem−	Among	remain	25526	11	0.002411	0.000254
sem+	Among	play	36811	9	0.001077	0.05194
sem0	Among	step	5352	3	0.000748	0.001341
vacfreq−	Among	die	20979	1	−0.000831	0.001909
vacfreq+	Among	circulate	1379	17	0.005869	0.001958
vacfreq0	Among	belong	6152	6	0.001753	0
ΔP−	Around	spring	1659	4	0.00067	0.00381
ΔP+	Around	look	108373	353	0.061248	0.027268
ΔP0	Around	bend	3110	3	0.000397	0.004476
never	Around	abolish	1858	0	−0.1	0
never	Around	consider	28494	0	−0.1	0
never	Around	prefer	6608	0	−0.1	0
sem−	Around	happen	30997	23	0.002643	0.000763
sem+	Around	go	224168	212	0.027829	0.137623
sem0	Around	concentrate	6916	8	0.001137	0.002045
vacfreq−	Around	burn	4873	1	−8.40E-05	0.003727
vacfreq+	Around	tighten	1420	39	0.007361	0.000468
vacfreq0	Around	come	143580	51	0.001648	0.010893
ΔP−	Between	work	61068	16	−0.001509	0.011308
ΔP+	Between	distinguish	3863	697	0.083798	0.000769
ΔP0	Between	spill	1296	1	4.80E-05	0
never	Between	coincide	1598	0	−0.1	0
never	Between	grant	6608	0	−0.1	0
never	Between	remember	25331	0	−0.1	0
sem−	Between	open	21642	22	0.001433	4.00E-04
sem+	Between	run	38688	94	0.009153	0.049416
sem0	Between	pause	2978	6	0.000556	0.001114
vacfreq−	Between	check	9375	1	−0.000407	0
vacfreq+	Between	switch	4301	41	0.0047	0.000547
vacfreq0	Between	transfer	5526	7	0.000533	0.003581

Stimulus class	VAC	Verb lemma	Verb corpus frequency	Verb frequency in VAC	Contingency ΔPcw	Prototypicality betweenness centrality
ΔP−	For	depart	1352	45	0.000421	0.002162
ΔP+	For	ask	57431	2659	0.026128	0.000292
ΔP0	For	display	5425	4	−0.000263	0
never	For	deem	1856	0	−0.1	0
never	For	protect	8741	0	−0.1	0
never	For	remind	5200	0	−0.1	0
sem−	For	sit	27625	328	0.002061	0.001226
sem+	For	hold	46230	320	0.000921	0.032849
sem0	For	proceed	4134	16	−5.70E-05	0.002099
vacfreq−	For	advise	5273	1	−0.000287	0
vacfreq+	For	opt	1722	513	0.00557	0
vacfreq0	For	flow	2535	3	−0.00011	0
ΔP−	Into	squeeze	1921	46	0.000813	0.008907
ΔP+	Into	fall	26023	1834	0.035264	0.028624
ΔP0	Into	diminish	1369	1	−5.70E-05	0
never	Into	expect	27887	0	−0.1	0
never	Into	recognize	5799	0	−0.1	0
never	Into	respect	1784	0	−0.1	0
sem−	Into	smile	10196	53	0.000486	0
sem+	Into	travel	8290	33	0.000193	0.030758
sem0	Into	pop	1907	88	0.001655	0.002598
vacfreq−	Into	raise	18984	1	−0.001051	0
vacfreq+	Into	peer	1621	208	0.004074	0
vacfreq0	Into	pin	1203	2	−2.80E-05	0
ΔP−	Like	give	125313	22	−0.00568	0.02096
ΔP+	Like	seem	59547	437	0.024009	0.003818
ΔP0	Like	plunge	1355	1	−1.40E-05	0
never	Like	acquires	6685	0	−0.1	0
never	Like	allege	1820	0	−0.1	0
never	Like	require	27944	0	−0.1	0
sem−	Like	become	65875	69	0.00061	0.001266
sem+	Like	pass	19595	7	−0.000665	0.028837
sem0	Like	spin	1650	6	0.000283	0.000266
vacfreq−	Like	reflect	11060	1	−0.00056	0
vacfreq+	Like	smell	2209	35	0.002067	4.60E-05
vacfreq0	Like	gather	4726	4	−1.60E-05	0.000194
ΔP−	Of	want	87178	57	−0.003631	0.008277
ΔP+	Of	consist	6295	3021	0.067828	0.000195
ΔP0	Of	desire	1386	1	−5.60E-05	0
never	Of	associate	8054	0	−0.1	0
never	Of	base	19034	0	−0.1	0

Stimulus class	VAC	Verb lemma	Verb corpus frequency	Verb frequency in VAC	Contingency ΔPcw	Prototypicality betweenness centrality
never	Of	forgive	1934	0	−0.1	0
sem−	Of	admit	10839	40	0.000291	0
sem+	Of	taste	1423	30	0.000597	0.02661
sem0	Of	request	2665	2	−0.000105	0
vacfreq−	Of	sound	9235	1	−0.000498	0
vacfreq+	Of	dream	2509	415	0.009225	0
vacfreq0	Of	whisper	2817	3	−9.10E-05	0
ΔP−	Off	round	1376	3	0.001794	0.01193
ΔP+	Off	put	67251	26	0.012436	0.006613
ΔP0	Off	strip	1517	3	0.001786	0.001001
never	Off	experience	6738	0	−0.1	0
never	Off	insert	1765	0	−0.1	0
never	Off	provide	51092	0	−0.1	0
sem−	Off	let	27961	11	0.005289	0.000633
sem+	Off	cut	17759	20	0.011478	0.046312
sem0	Off	fight	10193	5	0.002546	0.002982
vacfreq−	Off	grow	18372	1	−0.00041	0.004147
vacfreq+	Off	seal	1388	11	0.006785	0.000748
vacfreq0	Off	drain	1592	3	0.001782	0.00024
ΔP−	Over	think	142884	60	−0.005002	0.009273
ΔP+	Over	take	172544	1696	0.076423	0.050725
ΔP0	Over	knock	4333	57	0.002651	0.000913
never	Over	described	23107	0	−0.1	0
never	Over	invent	1804	0	−0.1	0
never	Over	name	5928	0	−0.1	0
sem−	Over	lean	4464	227	0.011278	0.001142
sem+	Over	cover	18578	26	0.000274	0.030188
sem0	Over	struggle	3559	12	0.000409	0.001915
vacfreq−	Over	seek	16511	1	−0.000879	0
vacfreq+	Over	glance	3693	98	0.00477	5.80E-05
vacfreq0	Over	feel	57807	9	−0.002799	0.006049
ΔP−	Through	know	177192	29	−0.008638	0.000385
ΔP+	Through	read	21154	112	0.004004	0.002188
ΔP0	Through	sell	20170	32	0.000348	0.000171
never	Through	involve	22543	0	−0.1	0
never	Through	own	6331	0	−0.1	0
never	Through	translate	2130	0	−0.1	0
sem−	Through	watch	18830	26	0.000145	4.40E-05
sem+	Through	beat	7952	3	−0.000309	0.019424
sem0	Through	warm	1484	5	0.000148	0
vacfreq−	Through	aim	7542	1	−0.000379	0

Stimulus class	VAC	Verb lemma	Verb corpus frequency	Verb frequency in VAC	Contingency ΔPcw	Prototypicality betweenness centrality
vacfreq+	Through	wander	2332	98	0.004415	0.000654
vacfreq0	Through	ease	2338	3	7.00E-06	0.00022
ΔP−	Towards	make	209036	30	−0.008019	0.025677
ΔP+	Towards	turn	43782	368	0.043527	0.042625
ΔP0	Towards	stretch	4446	17	0.001874	0.006326
never	Towards	include	34858	0	−0.1	0
never	Towards	stems	1383	0	−0.1	0
never	Towards	welcome	5523	0	−0.1	0
sem−	Towards	help	40178	32	0.001737	0.000493
sem+	Towards	extend	9524	15	0.001338	0.030295
sem0	Towards	leap	1998	8	0.000887	0.000536
vacfreq−	Towards	throw	10840	1	−0.000485	0
vacfreq+	Towards	drift	1924	62	0.00764	0.0023
vacfreq0	Towards	sink	2895	5	0.000462	0.001625
ΔP−	Under	find	95330	8	−0.004632	0.00201
ΔP+	Under	operate	10040	134	0.011757	0.000765
ΔP0	Under	begin	41430	20	−0.000494	0.002829
never	Under	aid	1506	0	−0.1	0
never	Under	believe	33409	0	−0.1	0
never	Under	conclude	5513	0	−0.1	0
sem−	Under	claim	18435	23	0.001077	8.50E-05
sem+	Under	broke	18399	27	0.001447	0.029654
sem0	Under	cook	2895	2	2.10E-05	0.000217
vacfreq−	Under	eat	13612	1	−0.000674	0
vacfreq+	Under	collapse	2282	39	0.003458	0.001892
vacfreq0	Under	fold	1585	3	0.000187	0.002274
ΔP−	With	show	58052	93	−0.002399	0.010654
ΔP+	With	deal	16117	6407	0.060182	0.006339
ΔP0	With	fill	10409	617	0.005294	0.011627
never	With	forbid	1293	0	−0.1	0
never	With	hand	5075	0	−0.1	0
never	With	intend	10483	0	−0.1	0
sem−	With	hope	21003	21	−0.000989	4.00E-05
sem+	With	change	26434	157	1.00E-06	0.108972
sem0	With	trace	2548	2	−0.000125	0
vacfreq−	With	stress	4187	1	−0.000227	0
vacfreq+	With	disagree	1271	348	0.003246	0.000475
vacfreq0	With	promise	6048	4	−0.000304	0

The role of force dynamics and intentionality in the reconstruction of L2 verb meanings

A Danish-Spanish bidirectional study*

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This chapter examines the role of force dynamics and intentionality in the description of placement events by two groups of native speakers of typologically and genetically different languages, Danish and Spanish, and by two groups of intermediate adult learners, Danish learners of L2 Spanish and Spanish learners of L2 Danish. The results of the study showed that (a) force dynamics and intentionality are important semantic components in both languages, but their distribution and relative focus differed cross-linguistically, and (b) the two learner groups had difficulties in reconstructing the meanings of the L2 verbs involving these two semantic components. Learning difficulties were observed when moving from a less to a more complex L2 system, when moving in the opposite direction, i.e., from a more to a less complex L2 system and when moving to an L2 system that is as complex as the learners native one.

Keywords: placement events, force dynamics, Danish, Spanish, L2

1. Introduction

The concept of force dynamics refers to the way in which two entities interact with respect to force (Talmy, 1988). Among other conceptual domains, force dynamics is one of the semantic components that take part in the conceptualization of

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caused-motion events, that is, situations where some kind of agent makes an object move to a certain location. Caused-motion events occur all the time in our daily life. We are used to moving objects from one place to another, and depending on how big those objects are or how strong we are, it will take us more or less effort, that is, a higher or lower degree of force, to take that object to its final destination. Compare, for example, the difference between verbs such as *carry* and *drag* in English. However, the importance of force dynamics does not only concern the 'taking and carrying' part of a caused-motion event, but also the 'placing' stage, that is, how we place an object in its final location. Compare, for instance, the different degrees of force involved in *he puts/leaves/throws the book on(to) the table*. Another basic related semantic component in this type of events, complementary to force dynamics, is intentionality, i.e., whether the agent changes the location of an object on purpose or accidentally. Compare, for example, the Swedish verbs *släppa* 'drop intentionally' and *tappa* 'drop unintentionally'.

These semantic components are crucial in the configuration and description of placement events, the specific type of caused-motion event under study in this chapter. They are basic notions that help us distinguish between different ways of placing objects in different places. Previous cross-linguistic research on the semantic categorization of placement events has shown that these types of events are pervasive and frequent in all languages (Kopecka & Narasimhan, 2012). However, this research has also shown that languages provide their speakers with different linguistic resources to describe these events and, as a result, the semantic distinctions encoded in placement event descriptions vary across languages. A very well-known example is the set of positional verbs available in Germanic languages or the lack of this type of verbs in Romance languages.

These encoding differences are interesting for cross-linguistic semantic research – it is always stimulating to find out how similarly and/or differently languages map certain semantic domains – but become crucial for the study of second language acquisition since cross-linguistic differences in semantic categorization pose difficulties for adult learners (cf. Ijaz, 1986; Malt & Sloman, 2003; Saji & Imai, 2013). L2 learners need to detect possible differences in the semantic distinctions coded in their L1 and L2 and to learn the appropriate linguistic means to express those meanings coded in the L2. From this perspective, second language learning entails learning to reconstruct the meaning of the L2 or learning to categorize the world as the native speakers (NSs) of the L2, a process that has been described in the literature as learning appropriate L2 ways of thinking-for-speaking (TFS) (Cadierno, 2008) or learning to re-think for speaking (Robinson & Ellis, 2008). The ease or difficulty of the learner's reconstruction process can be affected by the number and generality of the categories involved in each language. Previous research into the L2 expression of placement events has shown that it is

difficult for learners to move not only from a general system to a more specific system (e.g., Viberg, 1998; Gullberg, 2009) but also from a more specific system into a general one (Cadierno, Ibarretxe-Antuñano, & Hijazo-Gascón, 2016).

In this chapter, we explore the role of force dynamics and intentionality in the description of placement events in Danish and Spanish, both as L1 and L2. The structure of this chapter is as follows. Section 2 offers a brief overview of the literature on placement events and force dynamics. After a description of the methodology used in this study, Section 4 presents two studies where we contrast how Danish and Spanish NSs deal with force dynamics and intentionality in the description of placement events and whether learners of both languages have acquired the native categories and rhetorical styles of their respective L2s when describing the same situations. The chapter finishes with some conclusions and future lines of research.

2. Force dynamics and intentionality in placement events

A placement event can be defined as a special type of caused-motion event, where typically some kind of agent causes an object to move to a specific location. Prior research on placement events (Talmy, 1985; Jackendoff, 1990; FrameNet (Ruppenhofer, Ellsworth, Petruck, Johnson, & Scheffczyk, 2010); Narasimhan, Kopecka, Bowerman, Gullberg, & Majid, 2012) has proposed a basic set of semantic components to describe these events. Some of these are: Figure (what is moved), Agent (the causer of the movement), Ground (the location where it is placed), Causation (what triggers the placement), Motion (the act of moving itself), and Path (the trajectory followed by the Figure). These basic components represent the core placement schemata but they might be extended to capture finer-grained distinctions and relations between these elements. For example, to differentiate diverse types of Grounds (a bowl, a three-dimensional container vs. the floor, a two-dimensional supporting surface), to describe intentionality (accidental vs. intentional), or to specify how much force the Agent exerts on the Causation (compare *drop*, *dump* and *throw*).

Although force dynamics and intentionality are two of the basic semantic notions in placement events, they have not been given the attention they deserve in the placement event literature. One reason to explain this lack of detailed studies might lie in their own nature: they are instrinsic and necessary notions for the description of a placement event itself and, as such, researchers may have taken them for granted and focused on more divergent notions such as the configurational and topological properties of the elements involved in a placement event. Therefore, most of the studies on this topic might touch on the role of

force dynamics and/or intentionality but without going into deeper discussion. This becomes very clear if we review the papers included in the collective volume *Events of Putting and Taking* (Kopecka & Narasimhan, 2012), a blueprint in the study of placement events from a cross-linguistic perspective. All studies followed the same methodology and collected data using the same verb-clip stimuli (Bowerman, Gullberg, Majid, & Narasimhan, 2004; Narasimhan et al., 2012). These videos were carefully designed so as to provide researchers with a set of contrastive scenes to capture different semantic components of these events (types of Figures and Grounds, use of instruments, etc.). One of the semantic notions to be contrasted was intentional vs. accidental dropping as enacted in three videos: 009 DROP BOOK ACCIDENTALLY ON FLOOR, 008 DROP BOOK DELIBERATELY ON FLOOR, and 010 TOSS BOOK ON FLOOR (see Table 1 in Section 3.2 for stills of these videos).

A quick look at the papers included in this volume reveals that most of the papers actually mention these scenes and the verbs used by speakers, but few take the question of intentionality and force dynamics further. For instance, Levinson and Brown (2012, pp. 286, 288) point out that Yélî Dnye speakers have some less frequent verbs of placement that depict some force dynamic differences such as *ghay* 'fall', *pw:ono* 'drop', and *dyimê* 'fall to ground'. Kopecka's (2012) study on Polish placement events also mentions that some force dynamic verbs such as *rzucić* 'throw' and *pušic* 'drop' require an accusative PP if they express a final destination. Nouaouri (2012) explains how Moroccan Arabic speakers employ the intransitive verb *t2ah2* 'fall' in a dative of interest construction when they want to describe an accidental change of location. If the placement event is intentional they will choose between two options: the verb *t2iyyeh2* 'drop, let fall' and the verbs *slah2*, *rma* 'throw, toss'. The difference between these two options lies in the degree of force exerted. The latter pair involves a higher degree of force and this is why all speakers choose the verb *rma* 'throw, toss' to describe the 'tossing' event. Narasimhan (2012) points out that Hindi speakers prefer specific put verbs for uncontrolled movement (*gir* 'fall') over the general verb *rakh* 'put'. However, Hindi speakers do not seem to pay attention to the force dynamics since the verb *phEk* 'throw' is used for both the accidentally dropping and the tossing scenes. For Tamil speakers, on the other hand, neither intentionality nor force dynamics seems to play an important role in the categorization of these events. The general verb *pooDU* 'put/drop' is used across those scenes no matter how intentional or accidental the placement event is. Andics (2012) highlights the importance of intentionality (what he calls 'agentive control relations') in Hungarian placement events and argues that "Agentive control relations in a placement event could not sufficiently be described by specifying the relation at the Source and the Goal. Events also differed in whether the Figure was under agentive control along the

motion Path or not" (Andics, 2012, p. 196). As such, Hungarian speakers clearly make a distintion between prototypical cases of intentional dropping and accidental dropping by using different verbs, namely, *dob* 'throw' and *ejt* 'let fall' respectively. O'Connor (2012) notes that in Lowland Chontal, a language that typically uses compound stem predicates with information about the manner, means and shape of Path of change as well as the type and posture of Figure, speakers tend to use few compound stem predicates when describing accidental and intentional placement events. In these cases, speakers use the same variety of simple predicates (*ñoy-* 'lay', *mas-* 'release', *te'e-* 'drop', *te-* 'fall', *jwixko-* 'toss, throw') without taking into account the type of Figure. She concludes that "these verbs have less to do with specific figures and more to do with perceived control of placement" (O'Connor, 2012, p. 316).

Ibarretxe-Antuñano's (2012) description of placement events in Basque and Spanish is perhaps the most detailed account of intentionality and force dynamics in the book. This author points out that speakers of these two languages pay attention to three conceptual elements when describing placement and removal events. These three elements are (i) agency: it refers to the causer of the movement, either oneself (e.g., *the book falls down*) or an external agent (e.g., *the book is thrown out*), (ii) force dynamics, and (iii) intentionality. They interact and appear in different degrees in the semantics of the verbs and constructions used to describe these events. Ibarretxe-Antuñano (2012, p. 138) proposes the following continuum to capture these differences.

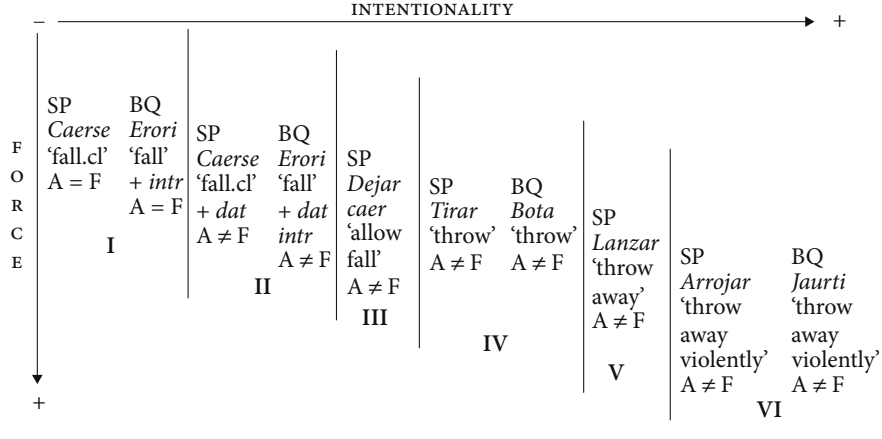

Figure 1. Agency, intentionality and force dynamics continuum in Basque and Spanish placement events

This author illustrates this continuum with examples in Spanish as reproduced in (1) and argues that speakers divide the semantic space on the basis of the degree of intentionality that the agent shows (no intentionality in (1a) vs. intentionality (1b–e)) and the force that the agent exerts in order to move the object from one place to another (gentle in (1b) and increasingly more violent in (1c–e)).

(1) a. *se le cae el libro*
CL.3 DAT.3SG falls the book
'He drops the book unintentionally'
b. *deja caer el libro*
allows fall the book
'He drops the book intentionally but gently'
c. *tira el libro*
throws the book
'He throws the book'
d. *lanza el libro*
throws.away the book
'He throws the book away'
e. *arroja el libro*
throws.away.violently the book
'He violently throws the book away'

Ibarretxe-Antuñano shows how Spanish and Basque NSs consistently make use of these resources to distinguish between different types of placement and removal events with a very low rate of cross-speaker variability as summarized in Figure 2.

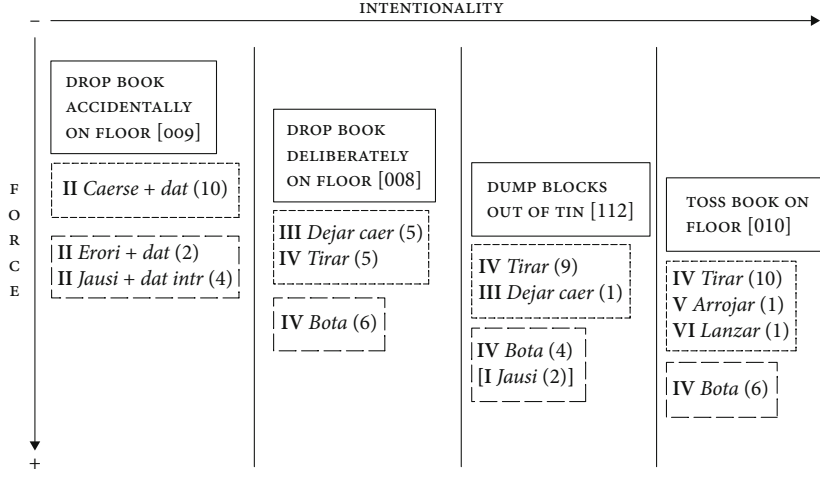

Figure 2. Intentionality and force dynamics in PUT task in Spanish and Basque. The number in () indicates the number of speakers that used that construction

Similarly to Moroccan Arabic speakers, Spanish speakers use three different types of verbs to distinguish between unintentional and intentional events, and within the latter, between lower and higher force: *caerse* + dative 'fall CL + dative', *dejar caer* 'let fall', and *tirar* 'throw'. Basque speakers, on the other hand, differentiate between unintentional placement (the verbs *erori*, *jausi* 'fall' in the dative construction) and intentional placement, but do not seem to pay attention to differences in force dynamics since they use the same verb *bota* 'throw' both for deliberately dropping and for tossing.

What one can conclude from the studies reviewed above is that, generally speaking, all languages seem to deal with these notions of intentionality and force dynamics in one way or another. Every language provides the speaker with some specific verb that highlights the forceful (*throw*, *toss*) and/or unintentional (*let fall*) placement, but above all, these studies reveal that speakers do not pay attention to the same details; they divide the placement events in different ways. For example, Tamil speakers basically ignore these components and simply use a general verb to cover all scenes. Spanish speakers, on the other hand, do care about these distinctions and consistently discriminate different degrees of intentionality and force dynamics. In fact, it has been shown that Spanish speakers are better at remembering intentional and accidental events than English speakers. In an experimental study on causative motion, Filipović (2013) found that speakers of these two languages produced similar constructions to describe intentional caused motion actions but that Spanish speakers offered explicit information about the non-intentional character of the event. These preferences were reflected on the memory tests speakers went through. English and Spanish speakers recall intentional caused motion events equally, but Spanish performed better in those cases were accidental causation was involved.

Taking as a starting point Ibarretxe-Antuñano's (2012) previous account of placement events in Spanish, this chapter explores the role of force dynamics and intentionality in the description of placement events in Danish and Spanish, both as L1 and L2. By means of a bidirectional design, this chapter addresses the directionality of L2 meaning reconstruction in a single study.

The choice of these two languages is deliberate. First, Spanish and Danish show opposite patterns of conflation and distribution of semantic information in the linguistic encoding of motion and caused-motion events (Talmy, 1991). Spanish is a verb-framed (*salir corriendo* 'exit running') and positional verb-less language (*estar* 'stative be') (Ameka & Levinson, 2007; Cadierno, 2004) whereas Danish is a satellite-framed (*løbe ud* 'run out') and positional verb (*ligge* 'lie', *stå* 'stand') language. This complementary characterization makes them perfect candidates for the kind of bidirectional second language acquisition study we develop in this chapter. Secondly, although this is not the goal of our study, our data can

be further used to explore the issue of intratypological variation within genetically-similar languages (Hijazo-Gascón & Ibarretxe-Antuñano, 2013). Thirdly, the last reason is convenience: our previous research in (caused-)motion events (Cadierno, 2004; Ibarretxe-Antuñano, 2012) provide us with ready-available speakers, previously-analyzed data and good knowledge of the two languages in question both from an L1 and L2 perspective.

To the best of our knowledge, this is the first study that focuses on these two semantic components from a bidirectional perspective. Our main research questions are two:

– Are there cross-linguistic differences with respect to force dynamics and intentionality in the verbalization of placement event verbs between Spanish and Danish?
– If so, what are the implications for Spanish and Danish L2 learners whose L1 and L2 do not share the same force dynamic and intentionality patterns?

3. Methodology

3.1 Participants

The results presented here are part of a wider project that studies placement and removal events in Danish and Spanish in L2 acquisition. There were a total of 52 participants in this study: 10 NSs of Spanish (2 male and 8 female), 14 NSs of Danish (4 male and 10 female), 14 adult Danish learners of L2 Spanish (3 male and 11 female) and 14 adult Spanish learners of L2 Danish (2 male and 8 female). The NS data were collected among university students in Spain (University of Zaragoza) and in Denmark (University of Southern Denmark). These informants can be characterized as functional monolinguals as they were not studying English or any other L2 at the time of data collection and the languages that they used in their daily lives were Spanish and Danish, respectively (Brown & Gullberg, 2012). Neither group reported knowledge of the other language. At the time of data collection, the Spanish learners of L2 Danish were all studying Danish at the *Escuela Oficial de Idiomas* (Official School of Languages) in Madrid.[1] Their level of proficiency was also in between B1 and B2 according to the Common European Framework of Reference (CEFR). The Danish learners of L2 Spanish

1. Official Schools of Languages in Spain are regulated by an Organic Law of 2006 and provide teaching in numerous foreign languages.

were first-year students of this language at a Danish university. Their level[2] of Spanish proficiency was in between B1 and B2 according to the CEFR.

In addition to the placement tests, learners in both groups filled out a language background questionnaire in their native languages where they were asked about their exposure to Spanish and Danish, respectively, in both formal and informal settings and were asked to self-evaluate their level of L2 proficiency in the various languages that they knew. The L2 Spanish learner group had all studied Spanish in high school for three years (approximately 235 hours) and most of them had lived and studied Spanish in a Spanish-speaking country for a period ranging from two months to one and half years. All participants reported good knowledge of English and some of them reported some knowledge of other languages such as German and Greek. The L2 Danish learner group had lived and studied Danish in Denmark for a period ranging from one month to four years. All the learners but one reported advanced knowledge of English and some of them reported some knowledge of other languages such as German, French and Italian.

3.2 Data collection

Data were collected with the stimuli of the PUT task, designed at the Max Planck Institute for Psycholinguistics in Nijmegen, The Netherlands (Bowerman et al., 2004; Kopecka & Narasimhan, 2012). This task consists of 61 short video clips arranged in three different randomized orders. Each video shows a human actor performing a caused motion event. The scenes vary along a series of dimensions, such as the nature and spatial configuration of the Figure and the Ground and the manner in which the Figure is moved. Although our data were collected using the full video set (61), this study focuses only on a subset of placement events (8 videos). Removal events are not considered in this chapter. Table 1 shows the list of the 8 video clips used in this study.

This subset of videos was specifically selected to investigate the role of force dynamics and intentionality in the description and acquisition of placement events. The difference between intentional and accidental placement events was taken into consideration in the design of these video stimuli (contrast videos 009 and 008), but none of them was specifically developed to uncover differences in force dynamics. However, previous research in this area suggests that speakers distinguish different degrees of force dynamics in placement events (Ibarretxe-Antuñano, 2012).

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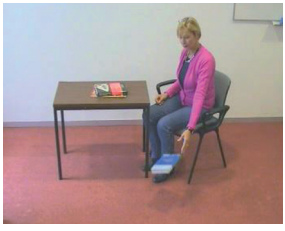
2. Their level was tested through the use of the online test of the Cervantes Institute (http://ave.cervantes.es/prueba_nivel/default.htm), a governmental agency devoted to teach and promote the Spanish language and culture internationally.

Table 1. Subset of placement video-clips. Adapted from Bowerman et al. (2004)

Group A	009 DROP BOOK ACCIDENTALLY ON FLOOR 	008 DROP BOOK DELIBERATELY ON FLOOR 
	010 TOSS BOOK ON FLOOR 	
Group B	001 PUT CUP ON TABLE 	002 PUT PLASTIC CUP ON TABLE WITH MOUTH 
	003 PUT BANANA ON TABLE WITH LONG TONGS 	006 PUT BOX UP ON SHELF 
	007 PUT BOOK ON FLOOR 	

Group A consists of three videos where the placement event occurs with different degrees of force dynamics and intentionality. Group B consists of 5 videos where all placement events are intentional but differ in their force dynamics.

Each participant watched one video clip at a time and was asked to describe the event shown to the experimenter. In the case of the learners, they were told that if they did not know the name for a given object in the video, they could use words like 'that' or 'that thing' or ask the experimenter. If asked, the experimenter provided the Spanish / Danish nouns for the Figure object or the Ground (e.g., Spanish *libro* 'book') but never for the L2 verbs required to describe the placement event in question.

4. Analysis

4.1 Different intentionality and different force dynamics in Group A

As mentioned in previous sections, the semantic elements of force dynamics and intentionality reveal to be important in the description of placement events in Spanish (Ibarretxe-Antuñano, 2012). In order to test how similarly or differently native speakers of Danish and Spanish deal with these two components in placement events, we selected the data from three videos designed to contrast intentionality (see Table 1, Group A). In contrast to prototypical placement events, the Agent in these three video clips does not maintain manual control of the Figure object until it reaches the Ground. Table 2 shows the semantic categories – verbs – used for each scene by each native informant group.

Table 2. Verb types used by Spanish and Danish native speakers.
Numbers in () indicate tokens

Scenes	L1 Spanish	L1 Danish
009 DROP BOOK ACCIDENTALLY ON FLOOR	*Caerse* + dat 'fall CL + dat' (10)	*Tabe* 'drop, lose' (13) *Spilde* 'spill' (1)
008 DROP BOOK DELIBERATELY ON FLOOR	*Dejar caer* 'let fall' (5) *Tirar* 'throw' (5)	*Smide* 'throw' (7) *Tabe* 'drop, lose' (3) *Lade falde* 'let fall' (1) *Lægge* 'lay' (1) *Give* 'give' (1) *Kaste* 'throw away violently' (1)
010 TOSS BOOK ON FLOOR	*Tirar* 'throw' (8) *Lanzar* 'throw away' (1) *Arrojar* 'throw away violently' (1)	*Smide* 'throw' (8) *Kaste* 'throw away violently' (6)
Total number of verb types	5	7

As shown in Table 2, L1 Spanish speakers used a total of five different verbs: the construction *caerse* + dative 'fall CL + dative' for scene 009 (e.g., *se le cayó el libro* 'the book fell on him'); two verbs, *dejar caer* 'let fall' (if the speakers consider the Agent did it without intentionality) and *tirar* 'throw' (if they consider the Agent did the action on purpose), for scene 008, and three verbs for scene 010: *tirar* 'throw', *lanzar* 'throw away', and *arrojar* 'throw away violently', but the latter two only with one token each. L1 Danish speakers use a total of seven different verbs. They employed two verbs, *tabe* 'drop, lose' and *spilde* 'spill', for scene 009; five verbs for scene 009: *smide* 'throw', *tabe* 'drop, lose', *lade falde* 'let fall', *lægge* 'lay', *give* 'give', and *kaste* 'throw away violently'; and two verbs, *smide* 'throw' and *kaste* 'throw away violently', for scene 010. Despite the diversity of verb types in Danish and, to a lesser extent in Spanish, it is important to underline that the tokens per verb differ. Thus, in Danish each scene has one or two predominant verbs: the verb *tabe* 'drop, lose' for scene 009, the verb *smide* 'throw' and *tabe* 'drop, lose' for scene 008, and the verbs *smide* 'throw' and *kaste* 'throw away violently' for scene 010.

In sum, both Spanish and Danish NSs seem to be aware of the differences between the intentionality and force dynamics in these three scenes. If we only focus on those verbs with higher number of tokens, we find a similar distribution of categories in these two languages. Three categories in Danish: *tabe* 'drop, lose', *smide* 'throw', and *kaste* 'throw away violently', and three in Spanish: *caerse* + dat 'fall CL + dat', *dejar caer* 'let fall', and *tirar* 'throw'. Perhaps the two main differences lie in the number of tokens per verb category, with Spanish speakers being more consistent than Danish speakers, and, more importantly, the boundaries between these categories. Spanish speakers clearly differentiate (i) between accidental and intentional dropping, the construction *caerse* + dat 'fall CL + dat' is only used for scene 009, whereas Danish speakers used *tabe* 'drop, lose' for scenes 009 and 008, and (ii) between intentional dropping and intentional throwing, with the verb *dejar caer* 'let fall' only being used for scene 008, whereas Danish speakers used the verb *smide* 'throw' for scenes 008 and 010. Although the number of tokens is minimal, one per verb, it is also interesting to point out that Spanish speakers followed this continuum of increasing force dynamicity quite nicely: *tirar* 'throws' appears in both intentional scenes 008 and 010, but only in the latter the verbs *lanzar* 'throw away' and *arrojar* 'throw away violently' make their appearance. In Danish, on the other hand, both the verbs *smide* 'throw' and *kaste* 'throw away violently' turn up in these two scenes.

On the basis of the L1 data, the L2 learners in these two languages do not have to move between a different number of categories, since both languages have three basic categories for each scene, but they have to learn to distinguish between the boundaries among these categories. Table 3 summarizes the verbs used by L2 Spanish and L2 Danish learners.

Table 3. Verb types used by L2 speakers. Numbers in () indicate tokens

Scenes	L2 Spanish	L2 Danish
009 DROP BOOK ACCIDENTALLY ON FLOOR	*Caerse* + dat 'fall CL + dat' (5)	*Falde* 'fall' (6)
	Perder 'lose' (2)	*Bære* 'carry' (2)
	Estar 'be' (1)	*Gå* 'walk' (2)
	Llevar 'carry' (1)	*Tabe* 'drop, lose' (2)
	Pedir 'ask' (1)	*Blive* 'stay' (1)
	Tener 'have' (1)	*Slå* 'hit' (1)
008 DROP BOOK DELIBERATELY ON FLOOR	*Caer* 'fall' (2)	*Falde* 'fall' (2)
	Estar 'be (stative)' (2)	*Droppe* 'drop' (1)
	Perder 'lose' (2)	*Dumpe* 'drop' (1)
	Caerse 'fall + CL' (1)	*Gå* 'walk' (1)
	Dejar caer 'let fall' (1)	*Have* 'have' (1)
	Lanzar 'throw away' (1)	*Kaste* 'throw away violently' (1)
	Quitar 'remove' (1)	*Lægge* 'lay' (1)
	Tirar 'throw' (1)	*Tabe* 'drop' (1)
	Tocar 'touch' (1)	*Tage* 'take' (1)
		Sætte 'set' (1)
		Slå 'hit' (1)
010 TOSS BOOK ON FLOOR	*Perder* 'lose' (2)	*Putte* 'put, put in' (3)
	Irse 'go away' (1)	*Lægge* 'lay' (3)
	Lanzar 'throw away' (1)	*Falde* 'fall' (1)
	Quitar 'remove' (1)	*Have* 'have' (1)
	Saltar 'jump' (1)	*Ligge* 'lie' (1)
	Tener 'have' (1)	*Smide* 'throw' (1)
	Tirar 'throw' (1)	*Tabe* 'drop' (1)
		Tage 'take' (1)
		Trække 'pull' (1)
Total number of categories	12	17

As shown in Table 3, the L2 Spanish learner group employed a total of twelve different verbs. For the first scene – DROP BOOK ACCIDENTALLY ON FLOOR – the learners used *caerse* + dat 'fall CL + dat', *perder* 'lose', *estar* 'be', *llevar* 'take', *pedir* 'ask', and *tener* 'have'. The descriptions for the video DROP BOOK DELIBERATELY ON FLOOR show the use of nine different types of verbs with very few tokens each: *caer* 'fall', *estar* 'be', *perder* 'lose', *caerse* 'fall + CL', *dejar caer* 'let fall', *lanzar* 'throw away', *quitar* 'remove', *tirar* 'throw', and *tocar* 'touch'. Finally, for the video TOSS BOOK ON THE FLOOR, the learners used the verbs *perder* 'lose', *irse* 'go away', *lanzar* 'throw away', *quitar* 'remove', *saltar* 'jump', *tener* 'have', and *tirar* 'throw', but all with very low frequencies once again. The learners' use of the verbs thus does not coincide with the verbs used by the Spanish NSs. They used eight verbs that were not employed by the Spanish NS group and out of the five verbs that were used by both the NS and the learner group, only two – *dejar caer* 'let fall' and *tirar*

'throw' – cover the appropriate semantic categories, but with a very low token ratio, one speaker per verb in each scene. Other verbs such as *lanzar* 'throw' and *caerse* 'fall + CL' were used across categories. This reveals that Spanish L2 learners, contrary to what native speakers do, do not make clear distinctions between intentional vs. accidental dropping, and between intentional dropping and throwing. In addition, cross-linguistic influence in the form of semantic transfer seems to be present in the learners' use of the Spanish verb *perder* 'lose'. Semantic transfer refers to the "use of an authentic target-language word with a meaning that reflects the influence from the semantic range of a corresponding word in another language" (Jarvis & Pavlenko, 2008, p. 75). The Danish verb *tabe* has two meanings: 'to drop an object' and 'to lose an object', and the learners seem to use the Spanish translation of the inappropriate linguistic label – *perder* 'lose' – in a context where they should have employed the alternative construction *dejar caer* 'let fall'.

The L2 Danish learner group employed a total of seventeen verbs. For the scene DROP BOOK ACCIDENTALLY ON FLOOR, the learners used six different verbs: *falde* 'fall', *bære* 'carry', *gå* 'walk', *tabe* 'drop', *blive* 'stay', and *slå* 'hit'; for the scene DROP BOOK DELIBERATELY ON FLOOR, they used eleven different verbs with very few tokens each: *falde* 'fall', *droppe* 'drop', *dumpe* 'fall, drop', *gå* 'walk', *have* 'have', *kaste* 'throw away violently', *lægge* 'lay', *tabe* 'drop', *tage* 'take', *sætte* 'set', and *slå* 'hit'. Finally, when describing the scene TOSS BOOK ON FLOOR, the learners used nine different verbs, again with few tokens each: *putte* 'put, put in', *lægge* 'lay', *falde* 'fall', *have* 'have', *ligge* 'lie', *smide* 'throw', *tabe* 'drop', *tage* 'take', and *trække* 'pull'. The learners' use of the verbs do not coincide either with the verbs employed by the Danish NSs or with their frequencies. On the one hand, there are five verbs that are used by both the NS and the learner groups (*lade falde* 'fall', *lægge* 'lay', *kaste* 'throw away violently', *smide* 'throw', *tabe* 'drop, lose'), but they do not reflect the same semantic categories. On the other, there are thirteen verbs that were not used by the Danish NSs (*bære* 'carry', *blive* 'stay', *droppe* 'drop', *dumpe* 'drop', *falde* 'fall', *gå* 'walk', *have* 'have', *ligge* 'lie', *putte* 'put, put in', *sætte* 'set', *slå* 'hit', *tage* 'take', and *trække* 'pull'). Despite the type-token diversity in these data, it might be possible to draw a few insights. First, it is interesting to notice that, despite not coinciding with the Danish native speakers' verb choices, L2 Danish learners seem to be aware of the accidental vs. intentional dropping and the force dynamics involved. The number of tokens per verb is not sufficient enough to propose any significant results, but if we closely look at the choice of verbs, some tendencies arise. For the accidental dropping scene, six learners chose the verb *falde* 'fall' (the verb type with the highest token agreement) and two the verb *tabe* 'drop, lose'. The verb *falde* 'fall' does not turn up in the native data but it is very close to the

preferred construction in L1 Spanish speakers for the same video. For the intentional dropping, on the other hand, learners used some verbs that mean 'drop' in Danish, *droppe, dumpe* and *tabe* (only this is in L1 Danish), plus the verb *kaste* 'throw away violently'.

Two tendencies seem to be present in the two L2 learner data in comparison with the two L1 NS data. The first is that both learner groups made use of non-caused motion verbs when describing the placement scenes (e.g., Sp. *estar* 'be (stative)', *tener* 'have'; Da. *gå* 'walk', *have* 'have'). These verbs were not used by the corresponding NS groups. The second tendency is that a greater variety of verbs per scene were used by the two learner groups as compared to the corresponding NS group.

Similar results are obtained if we include the whole set of 31 video stimuli (see Cadierno et al., 2016). For this analysis, which includes a larger set of video-clips, we calculated the Simpson's Diversity Index for the four participant groups. The Simpson's Diversity Index, which varies between 0 and 1, measures speakers' degree of consistency when describing a given scene. The higher the value of *D*, the higher degree of consistency there is in the verbs used by each group. We first calculated *D* for each video clip and for each participant group separately and then we calculated the mean *D* for each informant group. Simpson's Diversity Index was calculated using the following formula: $D = (ni - 1) / N (N - 1)$. *Ni* is the total number of occurrences of a particular verb (e.g., *lægge* 'lay') and *N* is the total number of all verbs. The results of this analysis revealed a higher degree of consistency for the two NS groups in comparison with the two learners groups. The *D* value for the L1 Spanish group was 0.56 whereas the *D* value for the L2 Spanish group was 0.32 (95% CIs for was 0.48–0.64 for the former, and 0.27–0.37 for the latter). Similarly, the *D* value for the L1 Danish group was 0.57 whereas the *D* value for the L2 Danish group was 0.24 (95% CIs for was 0.48–0.67 for the former, and 0.18–0.30 for the latter). A Kruskal Wallis one-way analysis of variance by ranks test conducted on these data again revealed a significant difference between the groups (X^2 (3) = 47.3401; p = 0.000). The results of the post-hoc analysis using Mann-Whitney tests with Bonferroni corrections showed significant differences between each L1 NS group and its corresponding L2 learner group, i.e., between L1 Spanish and L2 Spanish (p = 0.000; Z = 4.405; r = 0.559) and between L1 Danish and L2 Danish (p = 0.000; Z = 5.05; r = 0.641). No significant differences were found between the two NS groups (p = 0.953; Z = –0.063; r = –0.008) and between the two learner groups even though the significance level is borderline (p = 0.061; Z = 2.577; r = 0.327). In other words, the two NS groups were significantly more consistent when describing the video clips than the two learner groups.

4.2 Different force dynamics and same intentionality in Group B

Results from the previous study revealed that the distribution of force dynamics was not exactly the same in Danish and Spanish. NSs in these languages are aware of the different degrees of force in dropping and throwing but the subtle differences and boundaries among these events seem to be problematic for the L2 learners. As a follow-up study, we decided to select another group of videos (Group B in Table 1 above) where placement events were all intentional but performed with a 'special' degree of force dynamics that is neither dropping nor throwing. All these videos describe placement events where the Figure and the Ground maintain a relationship of support. These videos could be problematic for both groups of learners but for different reasons. Danish learners of Spanish might find it difficult to notice and describe the different degree of force dynamics. Spanish can use different lexical items to indicate how gentle the object is placed on a surface. The neutral verb is always *poner* 'put' but the verb *dejar*, which means 'allow, let' in general but 'leave on a place' in this context, underlines the gentle character of this action (see Soares da Silva, 2007). Spanish learners of Danish, on the other hand, might find it difficult to ignore the force dynamic and intentionality information that is typical in their native language, and to pay attention to the positional information of the Figure object (*lægge* 'put horizontally', *sætte/stille* 'put vertically') that Danish requires for this type of placement events.

Table 4 summarizes the verbs used in these scenes by Danish and Spanish native and learner speakers. Verbs with more than 50% usage are in bold.

Just by looking at the type of verbs native speakers use, it becomes clear that the focus of attention in each language is different. Unlike the previous study where all speakers paid attention to force dynamics and intentionality (in different degrees), here preferences are quite different. Danish NSs focused on the positional characteristics of the Figure, and as such, they mainly used the verbs *sætte* 'set' and *stille* 'set' to describe vertical placement and *lægge* 'lay' to describe horizontal placement. Other verb types such as *putte* 'put, put in' and *placere* 'place' were also used but less frequently. Spanish NSs, on the other hand, avoided any reference to positional information and focused on the degree of force dynamics. The verb *dejar* 'leave (on a place)' was the preferred verb option across the five videos. The other four verbs were only used occasionally. One of them is the general verb *poner* 'put' but the other three reflect the foregrounded semantic notion crucial for Spanish speakers: force dynamics. Thus, the verb *depositar* means 'put, place on a surface', *posar* 'put, place gently', and *colocar* 'place something'. These data reveal that the semantic information for these two groups of native speakers in this type of placement events is totally different. In fact, in a previous study on Spanish and Danish placement events, Cadierno et al. (2016)

Table 4. Verb types and frequency by Spanish and Danish speakers and learners

Scenes	L1 Spanish	L2 Spanish	L1 Danish	L2 Danish
001 PUT CUP ON TABLE	***dejar*** 70% *poner* 10% *depositar* 10% *posar* 10%	***poner*** 71.4% *ponerse* 14.3% *placear* 14.3%	***sætte*** 57.1% *stille* 42.9%	*sætte* 42.9% *stille* 28.5% *lægge* 21.4% *tage* 7.1%
002 PUT PLASTIC CUP ON TABLE WITH MOUTH	***dejar*** 90% *colocar* 10%	***poner*** 71.4% *ponerse* 7.1% *placear* 14.3% *caer* 7.1%	***sætte*** 76.9% *stille* 7.7% *putte* 7.7% *placere* 7.7%	*sætte* 35.7% *stille* 28.6% *lægge* 14.3% *placere* 7.1% *putte* 7.1% *tage* 7.1%
003 PUT BANANA ON TABLE WITH LONG TONGS	***dejar*** 70% *poner* 20% *depositar* 10%	***poner*** 69.2% *ponerse* 15.4% *placear* 15.4%	***lægge*** 92.9% *placere* 7.1%	***lægge*** 50% *placere* 7.1% *putte* 14.3% *sætte* 21.4% *tage* 7%
006 PUT BOX UP ON SHELF	***dejar*** 80% *poner* 10% *colocar* 10%	***poner*** 64.3% *ponerse* 14.3% *placear* 7.1% *tomar* 7.1% *ticar* 7.1%	***sætte*** 42.9% ***stille*** 42.9% *placere* 14.3%	***lægge***: 57.1% *sætte* 35.7% *tage* 7.1%
007 PUT BOOK ON FLOOR	***dejar*** 70% *depositar* 20% *posar* 10%	***poner*** 53.8% *ponerse* 15.4% *placear* 15.4% *dejar* 7.7% *caer* 7.7%	***lægge*** 100%	***lægge*** 64.3% *placere*: 7.1% *putte* 7.1% *sætte* 21.4%

showed that these scenes are categorized differently by speakers of Danish and Spanish. This was shown by means of a hierarchical agglomerative cluster analysis with Euclidian distance and Ward linkage. Hierarchical agglomerative cluster analysis is a multivariate statistical procedure consisting of a bottom-up approach where each observation starts in its own cluster, and clusters are successively subsumed as members of larger, more inclusive clusters at higher levels of similarity until all clusters are merged into a single cluster that contain all the observations (Aldenderfer & Blashfield, 1984, p. 7).[3] The cluster analysis performed on the L1

3. A measure of dissimilarity between sets of observations is required in order to decide which clusters should be combined. In hierarchical clustering methods, this is accomplished by using a given metric (a measure of distance between pairs of observations), and a linkage rule, which defines how the distance between two clusters is measured. In our analysis we used Euclidean distance, which is the most frequently used distance measure and it is defined as the square

Spanish and L1 Danish data showed that all these videos formed a single cluster in Spanish but they belonged to three different clusters in Danish. Figure 3 shows the relevant clusters from this study.

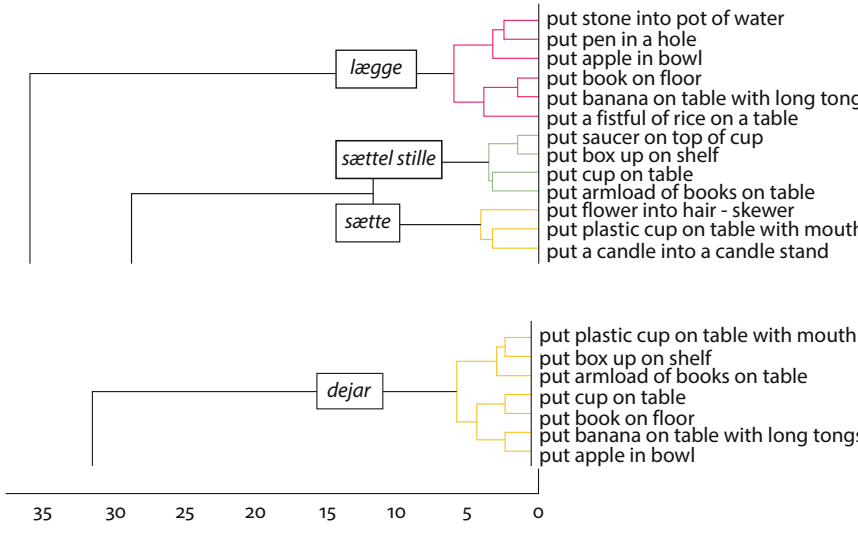


Figure 3. Cluster analysis for Group B videos in Danish and Spanish NSs. Adapted from Cadierno et al. (2016)

If we compare the NSs' and learners' descriptions of the same clips, the choice of verbs looks different, especially in the case of Danish learners of Spanish. These learners needed to move from two semantic categories present in their L1 – *lægge* for horizontally placed objects and *sætte* / *stille* for vertically placed objects – to one single category in their L2 – *dejar* 'leave (on a place)'. However, learners predominantly used the general verb *poner* 'put'. This verb is not inappropriate but it does not coincide with the Spanish NSs' choice, which provides the extra force dynamic information so crucial for native speakers. As in the study reported in the previous section, learners used a wide variety of verb types not used by Spanish NSs such as *ponerse* 'put on' or neologisms such as *placear* (probably a borrowing from Danish *placere* 'place'). In the case of Spanish learners of Danish, these needed to move from one single category in Spanish, *dejar* 'leave (on a place)', to

root of the sum of squared distances of a pair of items, and the Ward linkage, which is a linking method that optimizes the minimum variance within clusters, and it is assessed by calculating the total sum of the squared deviations from the mean of a cluster. For a more in-depth description of cluster methods in general and hierarchical agglomerative clustering in particular, the interested reader can consult Aldenderfer and Blashfield (1984).

two categories that focus on different semantic information (no force dynamics but position of the Figure object): *lægge* for horizontally placed objects and *sætte* / *stille* for vertically placed objects. Results were a bit different from the other group of learners. It seems that Spanish learners were aware of the different positional placement verbs in Danish, and as a result they used them for the appropriate scenes. For example, most learners correctly used the verb *lægge* 'lay' for the scene 007 PUT BOOK ON FLOOR or the pair *sætte* / *stille* 'set' for the scene 001 PUT CUP ON TABLE. There are, however, some learners that also used these same verbs inappropriately for scenes that do not correspond to their positional orientation: *lægge* 'lay' for scene 006 PUT BOX UP ON SHELF, and *sætte* / *stille* 'set' for the scene 003 PUT BANANA ON TABLE WITH LONG TONGS.

5. Discussion

The main goal of this study was to examine the role of force dynamics and intentionality in the description of placement events by two groups of native speakers of typologically and genetically different languages, Danish and Spanish, and by two groups of intermediate adult learners, Danish learners of L2 Spanish and Spanish learners of L2 Danish.

We addressed two research questions: (i) Are there cross-linguistic differences with respect to force dynamics and intentionality in the verbalization of placement event verbs between Spanish and Danish?, and (ii) If so, what are the implications for Spanish and Danish L2 learners whose L1 and L2 do not share the same force dynamic patterns?

Regarding the first research question, data revealed that both Danish and Spanish native speakers are aware of the differences between accidental dropping, intentional dropping, and intentional throwing. Therefore, we find a similar distribution of high-token categories in these languages. Three categories in Danish: *tabe* 'drop, lose', *smide* 'throw', and *kaste* 'throw away violently', and three in Spanish: *caerse* + dat 'fall CL + dat', *dejar caer* 'let fall', and *tirar* 'throw'. However, there are differences in their type-token frequency as well as in the boundaries across categories. Spanish speakers are more consistent in the choice of verb (more tokens per verb type) and more categorical in their differentiation between accidental dropping vs. intentional dropping vs. throwing (specific verbs and constructions for each category not applicable to others). The importance of force dynamics in the conceptualization of placement events for Spanish speakers becomes more evident in the second study. Given a situation where all placement events are intentional and describe a support relationship between Figure and Ground, Danish and Spanish speakers direct their attention to totally different

pieces of information. Danish native speakers pay attention to the positional information of the placement events and consistently use *lægge* for horizontally placed objects and *sætte* / *stille* for vertically placed objects. Spanish native speakers, on the other hand, focus on how gently the Figure object is placed on a surface and unanimously choose the verb *dejar* 'leave (on a place)'.

As far as the second question is concerned, we generally find that both groups of learners employed a larger number of verb types than their corresponding groups of native speakers.[4] In general, learners of Danish and Spanish are aware of some of the lexical items involved in the description of accidental / intentional dropping and throwing in their corresponding L2 and therefore, NSs and learners share some verbs in the description of the placement scenes that were analyzed (e.g., *tirar* 'throw', *tabe* 'drop'). However, neither their frequency nor their distribution across categories corresponds to that of the native speakers. L2 Spanish learners, for example, used a high-force dynamic verb such as *lanzar* 'throw away violently' for both intentional dropping and throwing. Therefore, learners have not yet mastered the semantic categories of their second languages; that is, they have not yet reconstructed the meanings of the L2 verbs. This shows up very clearly in the results of the second study. L2 Spanish learners have to move from their two positional placement verb categories in Danish to a single positional-neutral and force-dynamic specific verb in Spanish. Learners predominantly used the general verb *poner* 'put'. This verb would be appropriate in this context but it is not the preferred native speakers' choice. In the case of L2 Danish learners, on the other hand, they have to move from their single force dynamic placement verb category in Spanish to the two force-dynamic neutral and positional-marked verb categories in Danish. If we look at the verbs that were most predominantly used in each scene by the L2 Danish learner group, we can see that in the majority of the cases, these were the same verbs that were also most frequently employed by the Danish NSs, the exception being scene numbered 006 where Danish NSs predominantly used the vertical placement verbs *sætte* and *stille* whereas learners employed the horizontal placement verb *lægge* in 57.1% of the cases. The inappropriate use of the verb *lægge* for this scene together with the use of this same verb by some learners for scenes that are predominantly described by the vertical placement verbs *sætte* and *stille* in L1 Danish (scenes 001 and 002) and the use of the vertical verb *sætte* by some learners for scenes that are predominantly described by the horizontal verb *lægge* in L1 Danish (scenes 003 and 007) suggest

4. An anonymous reviewer has raised the question as to whether the difference between the NS groups and the corresponding learner groups is due to the learners not knowing the target verbs. The results of the study indicate that learners generally knew the verb forms but they did not fully command the meanings of the verbs that they used.

that this group of learners also had difficulties in reconstructing the meanings of the L2 Danish placement verbs.

In sum, both groups of learners at these intermediate levels of L2 proficiency had difficulties in reconstructing the L2 semantic space of force dynamics and intentionality in placement events. That is, learning difficulties were not only present when learners start off with a less complex system and need to acquire a more complex one (Spanish learners of L2 Danish in the second study) but also when they start off with a more complex system and need to move to a less complex one (Danish leaners of L2 Spanish in the second study), as well as when they need to move to a system as complex as their native one (Spanish and Danish learners in the first study). This result is different both from old claims made in the literature by Stockwell, Bowen and Martin's (1965) who hypothesized greater acquisitional difficulty in cases of splits as opposed to coalesced forms, and from previous research in the L2 expression of placement events where learning difficulties in speech had only been found for learners moving from a less to more complex system (Viberg, 1998; Gullberg, 2009, 2011). One possible explanation for the discrepancy in results may be the nature of the research designs employed in the studies.

Whereas previous research has examined the issue of learning directionality in separate studies involving different language pairs, the present study includes a bidirectional design that allows us to make a direct comparison of the type of transition involved in L2 learning by keeping constant both the source and target languages that are investigated and the learners' level of L2 proficiency.

6. Conclusions

The results of the present study show that there are cross-linguistic differences in the way Danish and Spanish NSs deal with the semantic components of force dynamics and intentionality in the categorization and description of placement events. These two semantic components are important in both languages, but their distribution in the categorization of placement events as well as their focus on subtle differences in the degree of force dynamics are different. Results also reveal that both L2 Danish and Spanish intermediate learners have difficulties in reconstructing their L2 verb meanings. They know some of the basic L2 placement verbs but their choice and usage differs from that of the native speakers. These learning difficulties appear regardless of the complex system they have to go to or come from. Therefore, both groups face difficulties in learning alternative ways of thinking for speaking (Cadierno, 2004, 2008) or learning to re-think for speaking (Robinson & Ellis, 2008) as they fail to make target language semantic distinctions and they fail to use the appropriate L2 verbs to express those distinctions.

There are, nevertheless, several areas that need to be addressed in future studies. The sample size of the study should be larger and include not only learners of different levels of proficiency but also speakers of different varieties of these languages. It is a very well-known phenomenon in Spanish dialectology that the use of pronominal verbs and *se* constructions vary from dialect to dialect (see, e.g., Gómez Torrego, 1992; Maldonado, 1999; Sánchez-López, 2002), and this is crucial for the study of intentionality and force dynamics. The elicitation stimuli should also be expanded. Specific and variable-controlled stimuli should be developed in order to capture all the subtle differences described in this analysis. Finally, it would be very interesting to compare and contrast speakers and learners of typologically and genetically similar languages. It has been shown that the closer a second language is to the native language of the learner does not necessarily mean an easier and more successful acquisition process (Hijazo-Gascón, 2015); therefore, bidirectional studies in closely-related languages are a largely unexplored area for further research.

All in all, we hope that the results in this chapter set up the first steps for a wider bidirectional study of the acquisition of placement events.

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Cross-linguistic influence in the interpretation of boundary-crossing events in L2 acquisition*

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This chapter analyses the interpretation of boundary-crossing events in second language acquisition (SLA) to determine whether L2 learners are able to select the target-like option for the interpretation of motion events or whether, on the contrary, their choice reflects cross-linguistic influence (CLI) of their L1. The two groups participating in the study – thirty Spanish learners of L2 English and sixteen English first language (L1) speakers – were subjected to an experiment involving an interpretation task with L2 boundary-crossing events pictures. Findings indicate that Spanish L2 learners selected three possible constructions (manner verb + path satellite, path in verb + manner in satellite and a combination of both) in clear contrast to English L1 speakers who only selected one construction (manner verb + path satellite). CLI has also been found to regulate the type of boundary-crossing event selected, primarily in cases of motion INTO a bounded space in the horizontal axis.

Keywords: cross-linguistic influence, boundary-crossing constraint, thinking for speaking, motion events, lexicalisation pattern

1. Introduction

The study of Cross-linguistic Influence (CLI) in motion events in Second Language Acquisition (SLA) has typically been approached from the thinking for speaking framework proposed by Slobin (1996a) and based on Talmy's (1985, 1991,

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2000) work on cognitive semantics. This hypothesis was originally designed for the analysis of first languages (L1s) and claims that language filters experiences into verbalized events constructed in the process of speaking. The thinking that is carried on-line in the process of speaking varies depending on the speaker's L1, therefore native speakers of typologically different languages exhibit different types of thinking for speaking. This notion involves a more cautious version of Whorf's (1940/1956) linguistic relativity hypothesis.

As stated by Athanasopoulos and Bylund (2013, p. 92) the main difference between linguistic relativity (Lucy, 1992, 1996; Levinson, 2003), and thinking for speaking (Slobin, 1996a, 1996b) lies in the fact that "the former focuses on effects of linguistic structure on non-verbal behaviour and conceptual representation, while the latter focuses on effects of linguistic structure on the cognitive processes involved in speech production". According to Berman and Slobin (1994) the child learns particular ways of thinking for speaking when acquiring a native language, considering that each language trains its speakers to pay different kinds of attention to specific details of events in the process of speaking.

Languages differ in the way they lexicalise semantic components and according to Berman and Slobin (1994) and Slobin (2000, 2004), also in the way they filter experience through language with the purpose of speaking. In its turn, the boundary-crossing constraint refers to whether a path involves the crossing of a boundary or not (Aske, 1989; Slobin & Hoiting, 1994). For example *He ran out of the room* (Salió de la habitación corriendo) indicates the crossing of a boundary while *He ran up the tree* (Subió al árbol) is a case of non-boundary-crossing. In satellite-framed languages (henceforth S-languages) such as English, manner is mapped onto the verb while +/– boundary crossing is typically mapped onto a satellite. In verb-framed languages (henceforth V-languages), such as Spanish, manner is only mapped onto the verb in non-boundary crossing situations, as the above-mentioned example *Subió al árbol* (He ran up the tree). However, in boundary-crossing situations manner of motion is expressed in a separate constituent, as in *Salió de la habitación corriendo* (He ran out of the room). These typical mappings of V- and S-languages influence the type and frequency of manner of motion verbs.

Spanish and English speakers vary in the way they express and interpret motion events. If we apply this typological difference to the field of SLA, it is expected that cross-linguistic differences will occur between native English speakers and Spanish learners of L2 English and influence how speakers from both languages interpret spatial motion across boundaries. We focus on the boundary-crossing constraint as (a) Talmy's two-way typology shows tendencies in languages to lexicalise path in the verb (V- languages) or in a satellite (S-languages). This typology is especially relevant in the crossing of spatial

boundaries because in the description of motion events involving the crossing of a boundary, V-languages use path verbs to indicate the change of location, as in *exit* or *enter* and (b) most research on motion events has not focused on boundary-crossing, with the exception of a few studies such as Naigles, Eisenberg, Kako, Highter, and McGraw (1998), Gennari, Sloman, Malt, and Fitch (2002), and Özçaliskan (2003, 2015) in first language acquisition and Cadierno (2010) and Hendriks and Hickmann (2015) in SLA.

In the present chapter we use the thinking for speaking hypothesis as it includes all forms of linguistic production (speaking, writing, signing) and reception (listening, reading, viewing), it constitutes a more cautious and dynamic version of linguistic relativity and it has been widely used in the analysis of motion events. In SLA, thinking for speaking implies learning another way of thinking for speaking (Stam, 1998; Cadierno, 2004, 2008) or learning to re-think for speaking (Robinson & Ellis, 2008). Different lexicalization patterns regarding manner of motion can be observed in particular in "the boundary-crossing constraint". A lexicalisation pattern refers to the association between meaning and a surface form by the process of lexicalisation. Thus, the aim of this chapter is to analyse the interpretation of boundary-crossing events in SLA in order to determine whether L2 speakers will be able to select the target-like option for the interpretation of boundary-crossing events in the L2 or whether their choice for the interpretation of these motion events will reflect cross-linguistic influence leading learners to use a lexicalisation pattern of their L1.The study is organized as follows: First, an overview of thinking-for-speaking in SLA is offered, then the boundary-crossing constraint is explained. Finally, the empirical study is discussed.

2. Thinking for speaking in SLA

According to Talmy (1985, 1991, 2000), whose work on cognitive semantics and on how semantic structure reflects the speaker's conceptual system has had a great impact, the different languages of the world distribute the semantic components of motion events differently depending on the lexicalisation patterns they use. Talmy proposed a typology for the typical meaning-form mappings in the expression of motion events. S-languages include Chinese and all the branches of the Indo-European family (except Romance languages). These are characterised by expressing the fact of motion and a co-event (generally manner or cause of motion) in the verb while the path is expressed by means of a satellite, which typically takes the form of verb particles as in *He dashed out of the office* (motion + manner). V-languages, which include Romance, Semitic and

Polynesian languages express the fact of motion and the path in the verb while the co-event (typically manner or cause of motion) is coded in a separate constituent which usually takes the form of an adverbial or a gerund as in Spanish *El perro salió de la casa corriendo* (The dog came out of the house running) which would be expressed in English as *The dog ran out of the house*. In 2000, Slobin stated that V-languages exhibit a smaller lexicon of manner of motion and speakers of S-languages use manner information more frequently than V-language speakers. Talmy's typology has been the basis of many studies in motion event description, the amount of research has led to criticism and to a reformulation of the typology. According to Slobin (2004) and Zlatev and Yangklang (2004) among others, there are some languages that do not seem to fit into Talmy's typology as both manner and path are encoded in constituents of equal status. Slobin (2006) proposed a third type: equipotentially-framed languages "where both path and manner receive equal weight" (Slobin, 2006, p. 59).

In SLA, as stated in the introduction, thinking for speaking involves learning another way of thinking for speaking, as Cadierno (2004), Cadierno and Lund (2004) and Stam (1998) claim or learning to re-think for speaking (Robinson & Ellis, 2008). Research has mainly focused on answering the question of whether L2 learners can actually acquire the L2 thinking for speaking patterns and many studies have dealt with cross-linguistic research in motion events, such as Athanasopoulos, Damjanovic, Burnand, and Bylund (2015), Brown and Gullberg (2010, 2011, 2012), Bylund (2009), Bylund and Athanasopoulous (2015), Bylund and Jarvis (2011), Cadierno (2004), Cadierno and Ruiz (2006), Daller, Treffers-Daller, and Furman (2010), Filipović (2011), Flecken, Carroll, Weimar, and von Stutterheim (2015), Hendriks and Hickmann (2015), Hijazo-Gascón (2011), Pavlenko and Volynsky (2015), Stam (2010, 2015), Tomczak and Ewert (2015), Vulchanova, Martínez, Eshuis, and Listhaug (2012), and Wu (2011).

Some of these studies consider the acquisition of motion events in S-languages by Spanish L1 speakers. For example, Cadierno (2004) carried out a study with a group of Spanish learners of L2 Danish and a Danish group of first year university students. The results indicated that Danish learners used fewer motion verbs in Spanish, showed a higher degree of elaboration of path of motion, did not use event conflation in their narratives in Spanish and descriptions of trajectories in Spanish were only given by half of the subjects. Stam (2010, 2015) in a longitudinal case study conducted with a Spanish L1 speaker learning English as an L2 showed that the expression of the semantic component of path changed but manner did not.

Motion events by S-language native speakers learning Spanish as an L2 have been analysed by Cadierno and Ruiz (2006); this study indicates that the Spanish native speakers showed a wider variety of motion verbs and proficiency seemed

to constrain cross-linguistic influence. A second study by Navarro and Nicoladis (2005) supports these results as the learners' group use fewer bare path verbs, resorting to the English pattern instead. These two studies indicate a less prominent role of the L1 thinking for speaking patterns in more advanced students.

3. The boundary-crossing constraint

Some researchers (Aske, 1989; Slobin & Hoiting, 1994) have proposed that Talmy's two-way typology is more relevant in cases where a change of location is represented. Aske (1989) states that English shows two types of path phrases: locative path phrases and telic path phases. The former add a location in which an activity takes places, as in *She is running in the kitchen;* the latter are "similar in form (in English) but act semantically as a type of nonverbal predicate in that they predicate, besides the path of motion an end of path-location state in the Figure" (Aske, 1989, p. 6), as in *He is running into the kitchen.* In contrast to English, Spanish cannot express path outside the verb in telic path phrases "which also predicate an end-of-path location in the moving object" (Aske, 1989, p. 11). Telic path phrases, as analysed by Vendler (1957), such *as Pat swam into the cave* or *The leaf blew off the table* cannot be replicated in Spanish as this language lacks telic secondary non-verbal predicates which predicate an end-state of the Figure argument (*into the cave, off the table*). According to Aske, this may happen because Spanish has no resultative non-verbal predicates; it only has depictive non-verbal predicates as in "Juan comió la carne cruda" (Juan ate the meat raw). Spanish allows manner verbs only with locative end phrases, which Slobin and Hoiting (1994, p. 496) name "path-focus" expressions.

These authors also distinguish "boundary-focus" expressions that refer to those cases where the figure crosses a boundary, as in *enter* or *exit*. Thus, the "boundary-crossing constraint" refers to whether a path involves the crossing of a boundary or not. As mentioned in the introduction, in V-languages, such as Spanish, manner can only be mapped onto the verb in non-boundary crossing situations; in boundary-crossing situations manner of motion is expressed in a separate constituent. In S-languages, manner is coded in the verb in both boundary and non-boundary crossing situations. In the following paragraphs, we will focus on the most relevant studies regarding the boundary-crossing constraint both in first and second language acquisition.

In first language acquisition, Naigles et al. (1998) showed that English speakers predominantly used manner-of-motion verbs (e.g., run) while Spanish speakers used more path-of-motion verbs (e.g., salir/exit). Spanish and English speakers also differed in the degree to which they mentioned the manner of motion and in

the types of sentence frames they preferred. Furthermore, Spanish speakers used more path verbs for the traversal of boundaries when the boundary was horizontal, while in the case of punctual vertical boundary-crossing events they used manner verbs as in *tirarse a la piscina* (trow oneself/plunge into the swimming-pool). Two additional studies on first language acquisition can be mentioned: Gennari et al. (2002) and Özçaliskan (2015).

The former indicates that S-language speakers (English) used mainly manner verbs in manner-salient motion scenes that involve boundary-crossing, and V-language speakers (Spanish) used predominantly path verbs. Özçaliskan (2015) developed and used the same stimulus picture task that we use in the present study to analyse whether the constraints imposed by an experimental task, which is manner salient, will have an effect on how speakers of V and S-languages convey boundary-crossing events in first language acquisition. Findings indicated that Turkish speakers used manner verbs to describe rapid or instantaneous acts, especially in boundary-crossing event types such as *diving into a pool of water* or *leaping over a hurdle*, but not to describe temporarily extended events, such as *crawling/running into a house, flying out of a jar, creeping out of a house, crawling over a carpet*. A similar result had been found by Naigles et al. (1998) in Spanish, another V-language, regarding vertical motion. This may happen because crossing a spatial boundary "can be construed as a change of state and V-language speakers most characteristically use verbs to encode change of state" (Özçaliskan, 2015, pp. 14–16). The fact that some scenes describing very rapid or instantaneous acts showed higher frequencies of manner verbs points to the fact that duration of motion can be a possible factor that contributes to the boundary-crossing constraint in V-languages. Besides, motion OVER a plane allowed more expression of manner than motion INTO and OUT of a bounded space in both English and Turkish, which indicates that the type of boundary is a relevant factor in the use of manner verbs in V-languages.

With regard to empirical research on the boundary-crossing constraint in SLA, two studies stand out: Cadierno's (2010) and Hendriks and Hickmann's (2015). In the former it was found that the Spanish group used the construction non-manner verb + path in satellite to a larger extent than the German and Russian groups, which showed the typical lexicalisation pattern of S-languages and the Spanish group showed a more varied pattern of distribution. Moreover, inter-typological differences among the groups were found between German and Russian learners whose L1 is an S-language and Spanish learners whose L1 is a V-language.

In the study by Hendricks and Hickmann (2015) it is shown that in voluntary motion situations in French, path is mainly expressed in the verb and in English in satellites. In the caused motion data, English native speakers follow

Talmy's predictions. In French native speakers' data, a large number of verbs do not express path but cause and agent actions or cause and manner of the object, while English learners of French express boundary-crossing in the verb in voluntary motion events, such as *traverser* but when expressing caused motion they use the English satellite-framing construction, as in *il pousse le panier sur la route* (he pushes the basket on the road), but *sur* is not used in French.

As has been shown, studies on boundary-crossing in first language acquisition indicate that S-language speakers use more manner verbs while V-language speakers prefer path verbs. In SLA, as Cadierno (2010) shows, L1 Spanish speakers use the construction non manner verb + path in satellite to a larger extent and English learners of French tend to rely on satellite-framing to express boundary crossing, according to Hendriks and Hickmann (2015).

As mentioned above, little empirical research has been conducted on the effects of the linguistic constraints of a language on expressing the boundary-crossing constraint and none, to the best of our knowledge, on interpreting this constraint in SLA. This study aims at filling that gap by analysing the effects of CLI on the interpretation of boundary-crossing events.

4. The study

The present study aims to determine whether L2 speakers will be able to select the target-like option for the expression of boundary-crossing events in the L2 or whether CLI will apply, in other words, whether their choice for the expression of motion events will reflect the lexicalisation pattern of their L1 or whether they will have acquired the L2 thinking for speaking pattern. A native English speakers' group was used as a control group so as to find out whether L1 English speakers would interpret boundary-crossing events following the typical L1 lexicalisation pattern.

We expected difficulties for Spanish learners of English as (a) English and Spanish are typologically distinct languages and (b) Spanish shows constraints in the traversal of boundaries. It is predicted that native speakers of English (S-language) will choose the option where manner is encoded in the verb and path in a satellite. For Spanish speakers (V-language), it may be the case that they have acquired the L1 English thinking-for-speaking pattern and they therefore choose the S-language pattern or, if not, they may choose the option which is consistent with their L1, i.e. where the semantic component of path is expressed in the verb and manner in a separate constituent. It may also be the case that the Spanish learners are influenced by their native language in some of their choices

relying on the option where manner is expressed in a separate constituent and they rely on the L2 patterns in other choices, selecting the option where manner is encoded in the verb.

Therefore, the following research questions are addressed:

1. Will native speakers of English interpret different patterns to express boundary-crossing situations?
2. Will Spanish learners of L2 English interpret the expression of motion events in the L2 in the same way as native speakers? If not, will they interpret the same lexicalisation pattern as in their L1 as a result of CLI?
3. Will Spanish learners of L2 English interpret the L1 lexicalisation pattern in some cases and the L2 pattern in others?

4.1 Participants

A total of forty-six subjects participated in the study: Thirty Spanish learners of L2 English, who were first-year Spanish students at a Spanish University and sixteen American students in the USA. The Spanish participants were six male and twenty-four female students whose average age was 18. Learners' knowledge of English was measured by means of the quick Oxford placement test (UCLES, 2001).

Information on the language use of the L2 learners was obtained using the language background questionnaire by Gullberg and Indefrey (2003). According to the placement test the subjects were B1 level, as established in the Common European Framework of Reference scale. The language use questionnaire revealed that they had been studying English for 10.5 years, both at elementary school and at high school. They were exposed to English daily at university and they had never lived in an English-speaking country. As regards the English L1 speakers, a total of 30 subjects took part in the data collection, but those who had lived in a Spanish speaking country or who had taken Spanish courses were discarded from the study, therefore, only 16 participants who had no previous knowledge of Spanish or any other V-framed language participated in the research. They were ten male and six female and their average age was 37.5.

4.2 Stimulus and procedures

The stimulus consisted of an interpretation task where the subjects saw 12 pictures of boundary-crossing events. These stimulus pictures were originally developed by Özçaliskan (2003, 2015). They have also been used by Cadierno (2010) to elicit production data. The manner verbs which appear in the pictures are based

on a previous classification of manner verbs (Özçaliskan, 2004; Slobin, 2000) which includes different subtypes, such as rapid motion (e.g. *dash*), leisurely motion (e.g. *crawl*), smooth motion (e.g. *fly*) and furtive motion (e.g. *creep*) (cf. Özçaliskan, 2015, p. 5).

In contrast to Özçaliskan (2015) and Cadierno (2010), our study does not focus on production but on interpretation of boundary-crossing events. With this purpose in mind, the subjects were asked to look at the pictures and determine the most appropriate way to describe them by choosing between two possible answers. One of the answers showed the L2 lexicalisation pattern where manner is coded in the verb and path in a satellite and the other showed the L1 pattern where manner is expressed in a separate constituent, more specifically in a gerund. Table 1 shows the list of scenes in the order they were presented to the participants.

Table 1. List of scenes in order of presentation

Order of presentation	Scene
1	Run INTO a house
2	Fly OUT of a jar
3	Crawl OVER a carpet
4	Dive INTO a pool
5	Dash OUT of a house
6	Flip OVER a bar
7	Tumble INTO a net
8	Creep OUT of a house
9	Leap OVER a hurdle
10	Crawl INTO a house
11	Sneak OUT of a sack
12	Jump OVER a cliff

The data were collected in the middle of the academic year. The participants were introduced to the character in the cartoon and were told to name the character "He". The instructions were given in English. First, they were shown the 12 pictures which depicted a man moving in a certain direction in a specific manner to a specific place and then they were asked to look at the two sentences describing each of the pictures. One of the sentences corresponded to the L2 use of boundary-crossing motion events and the other to the use of L1 boundary-crossing events. For example, they saw a scene where a man is seen dashing OUT of a house and they were given two possible descriptions of the picture, *The man dashes out of the house* and *The man goes out of the house dashing*. They were told to indicate the description they considered target-like. If they considered both options to be

target-like they could tick them both. In each picture the L1 and the L2 uses of boundary-crossing events examples appeared in a different order. If they considered more than one option possible, they could tick both options. They were given a maximum of 20 minutes to fulfil the task.

4.3 Coding

The data were first coded according to the category the subjects selected, i.e. conflation of motion and manner (manner verb + path in satellite), no conflation of motion and manner (path verb + manner expression) or a combination of both. English L1 speakers selected the category of conflation of motion and manner (manner verb + path in satellite) while L2 learners selected three different categories: conflation of motion and manner (CMM) (manner verb + path in satellite), no conflation of motion and manner (NCMM) (path verb + manner expression) and a third category where both options were considered to be possible, i.e. conflation of motion and manner and no conflation of motion and manner (CMM/NCMM).

In a second step the data were coded according to the type of motion event they depicted. The stimulus pictures included three types of path with locative end states, depicting three types of motion events: motion INTO a bounded, motion OUT of a bounded and motion OVER a space.

5. Results

The data are presented first according to the category provided by the subjects (CMM, NCMM and a combination of both CMM/NCMM) and secondly they are coded for boundary-crossing event type (motion INTO, OUT of and OVER a space).

5.1 Category: CMM, NCMM, CMM/NCMM

English L1 speakers only interpreted one category to be appropiate: conflation of motion and manner (CMM) where motion and manner are conflated in the verb and path is indicated in a satellite, i.e. manner verb + path in satellite. The 16 English native speakers that participated in this study did not consider the option where path is coded in the verb and manner appears in a satellite, in this case a gerund, as in "The man goes OVER a cliff jumping". In other words, English L1 speakers only interpreted as appropriate the sentences where motion and manner

were conflated in the verb, as in "The man jumps OVER a cliff". None of the examples where manner was expressed in a separate constituent were selected. They only considered one possible pattern in their L1 which corresponds to the lexicalization pattern which is typical in S-languages where manner and motion are conflated in the verb.

In contrast to English L1 speakers, L2 learners produced three possible categories:

- CMM, where there is manner verb + path in satellite, as in "He dashes OUT of a house";
- NCMM, where we have a path verb+ manner expression "He goes OUT of a house dashing" and
- a combination of both CMM/NCMM, where there is a manner verb + path in satellite and path verb + manner expression. In those cases they consider both options target-like as in "He dashes OUT of a house" and "He goes OUT of a house dashing".

Table 2 indicates the percentages for each of the answers provided by the subjects, with the raw figures in parentheses. They are organised according to the type of boundary-crossing event (motion INTO, OUT OF and OVER a bounded space). Table 3 shows the mean and standard deviations associated to the type of event and Table 4 includes the mean and standard deviations related to the scenes, listed according to their order of presentation to the subjects.

Table 2. Results for English L2 learners. Percentages and frequencies of motion INTO, OUT OF and OVER scenes

Scene	CMM	NCMM	CMM/NCMM
Run INTO a house	26.7% (8)	50.0% (15)	23.3% (7)
Dive into INTO a pool	90.0% (27)	3.3% (1)	6.7% (5)
Tumble INTO a net	80.0% (24)	10.0% (3)	10.0% (3)
Crawl INTO a house	40.0% (12)	46.7% (14)	13.3% (4)
Fly OUT OF a jar	40.0% (12)	43.3% (13)	16.7% (5)
Dash OUT OF a house	30.0% (9)	46.7% (14)	23.3% (7)
Creep OUT OF a house	30.0% (9)	66.7% (20)	3.3% (1)
Sneak OUT OF a sack	50.0% (15)	43.3% (13)	6.7% (2)
Crawl OVER a carpet	53.3% (16)	30.0% (9)	16.7% (5)
Flip OVER a bar	66.7% (20)	23.3% (7)	10.0% (3)
Leap OVER a hurdle	73.3% (22)	20.0% (6)	6.7% (2)
Jump OVER a cliff	70.0% (21)	23.3% (7)	6.7% (2)

Table 3. Mean and standard deviations associated to type of boundary-crossing event in the L2 group

Motion	CMM		CMM/ NCMM		NCMM	
	Mean	Std. dev.	Mean dev.	Std. dev.	Mean dev.	Std. dev.
INTO	59.17	24.11	13.33	23.43	27.50	24.87
OUT OF	37.50	32.00	12.50	18.28	50.00	32.16
OVER	65.83	28.98	10.00	19.25	24.17	25.83

Table 4. Mean and standard deviations related to the scenes in the L2 group

Scene	CMM		CMM/ NCMM		NCMM	
	Mean	Std	Mean	Std	Mean	Std
1	26.67	44.98	23.33	43.02	50.00	50.85
2	40.00	49.83	16.67	37.90	43.33	50.40
3	53.33	50.74	16.67	37.90	30.00	46.61
4	90.00	30.51	6.67	25.37	3.33	18.26
5	30.00	46.61	23.33	43.02	46.67	50.74
6	66.67	47.95	10.00	30.51	23.33	43.02
7	80.00	40.68	10.00	30.51	10.00	30.51
8	30.00	46.61	3.33	18.26	66.67	47.95
9	73.33	44.98	6.67	25.37	20.00	40.68
10	40.00	49.83	13.33	34.57	46.67	50.74
11	50.00	50.85	6.67	25.37	43.33	50.40
12	70.00	46.61	6.67	25.37	23.33	43.02

The values of standard deviations in Tables 3 and 4 provide a better sense of the distribution of choices across type of event and scene. Particularly, it helps visualizing a certain regularity in the scenes, with a reasonable lower value of standard deviations for those columns with a lower mean value.

5.2 Type of boundary-crossing event

The boundary-crossing events were divided into three types, motion INTO, OUT of and OVER a space. Figure 1 shows the type of boundary-crossing event related to the degree of preference in the selection of the scenes according to whether they indicate conflation of motion and manner (CMM) and no conflation of motion and manner (NCMM). The subjects also showed a third category, which includes both conflation of motion and manner and no conflation of motion and manner CMM/NCMM. Figure 1 also indicates the distribution of the L2 motion scenes according to the number of examples selected by the type of boundary-crossing event (motion INTO, OUT of and OVER a space).

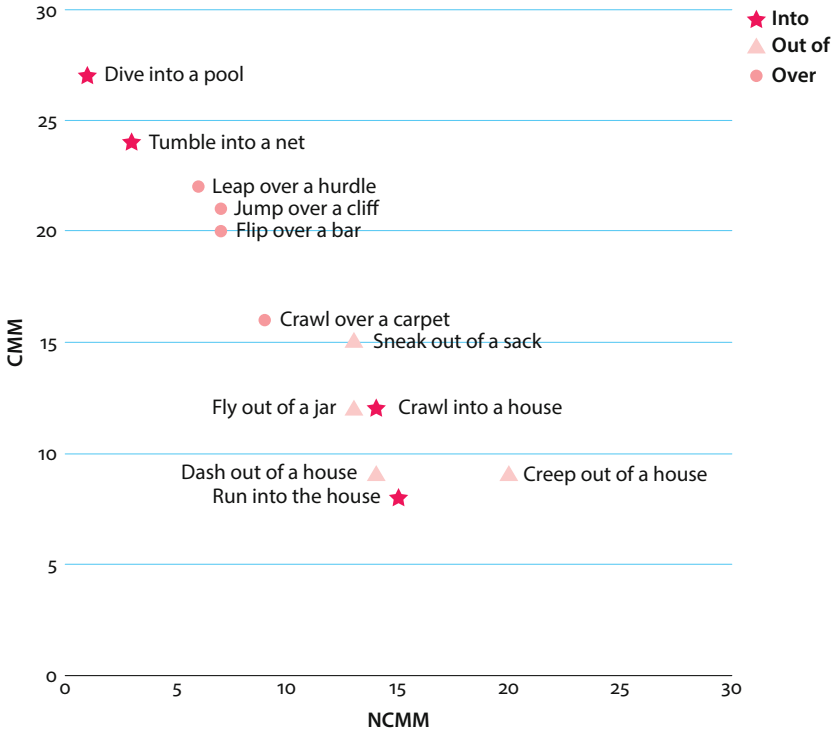

Figure 1. Distribution of the L2 motion scenes according to the number of examples selected by the type of boundary-crossing event (motion INTO, OUT of and OVER a space) and by category (conflation of Motion and Manner (CMM) and no conflation of Motion and Manner (NCMM)

We used the Friedman test for categorical data with repeated measures for the data shown in Table 5 below. Since the obtained p-value<0.0001 is less than the significance level (0.05) it can be concluded that there is a relationship between the type of boundary-crossing event (motion INTO, OUT of or OVER a bounded space) and the category selected by the student (CMM, NCMM or CMM/NCMM), and that the results shown in Figure 1 are not random. From these data it can be inferred that the type of boundary-crossing event influences the choice of the category, i.e., whether it is interpreted in the same way as the L1 lexicalisation pattern or whether they follow the L2 lexicalisation pattern or a mixture of both. As can be observed in Figure 1, motion OVER a bounded space is interpreted by L2 learners as close to their L2 English lexicalisation pattern while motion OUT of a bounded space is closer to the L1 Spanish pattern.

Table 5. Distribution of frequencies according to the type of boundary crossing event

	CMM	NCMM	CMM/NCMM
MOTION INTO	71	33	16
MOTION OUT OF	45	60	15
MOTION OVER	79	29	12

As can also be observed in Figure 1, the results indicate that in the scenes involving motion INTO a bounded space, there are two potential clusters within the same type of scene. The scenes "dive INTO a pool" and "tumble INTO a net" show 27 and 24 occurrences respectively in the category of CMM. In contrast, the scenes "crawl INTO a house" and " run INTO the house" only show 19 and 8 occurrences respectively. We can say that there are two potential clusters within the same type of scene.

In order to test a possible difference between these two sets of verbs (tumble INTO and dive INTO vs. run INTO and crawl INTO) we performed again the suitable Friedman test for categorical data with repeated measures for the data shown in Table 6 below. The p-values obtained are: INTO: $p < .0001$, OUT OF: $p = 0.1872$, OVER : $p = 0.4956$, which is less than the significance level (0.05) only for the case of INTO, where the null hypothesis can be rejected. Thus, it can be concluded that there is a relationship between the type of construction (run INTO the house, dive INTO a pool, tumble INTO a net and crawl INTO a house) and the category (CMM, NCMM or CMM/NCMM), and that the separation between elements in the boundary-crossing event motion OUT of a bounded space, as shown in Figure 1, is not random. The same statistical analysis was applied to the two remaining types (motion OUT of a bounded space and motion OVER a bounded space) giving no significance, as expected. Therefore, the scenes involving motion in the vertical axis (dive INTO a pool, tumble INTO a net) show the L2 English pattern while the two scenes depicting horizontal motion show the L1 Spanish pattern (run INTO a house, crawl INTO a house).

Table 6. Distribution of frequencies for motion into a bounded space scenes

	CMM	NCMM	CMM/NCMM
Run INTO the house	8	15	7
Dive INTO a pool	27	1	2
Tumble INTO a net	24	3	3
Crawl INTO a house	12	14	4

6. Discussion

In relation to the first study question (i.e., whether native speakers of English would select different patterns to express boundary-crossing situations), the results indicate that they only interpret the option of conflation of motion and manner in the verb (manner verb + path in satellite) as appropriate. In our study the monolingual English group selected the sentence expressing motion events which shows the lexicalisation pattern of their L1. As expected, they chose the option which is typical in S-languages.

Our second research question tried to determine whether Spanish learners of L2 English would interpret the expression of motion events in the L2 in the same way as native speakers or whether they would show the L1 pattern due to CLI. Findings show that, as opposed to the native speakers' group, Spanish learners selected three possible categories, (a) conflation of motion and manner (CMM), (b) no conflation of motion and manner (NCMM) and (c) a third category where both CMM and NCMM were selected as appropriate, the third category being the less frequently occurring. In contrast with English L1 speakers, Spanish native speakers also considered the category that is consistent with their L1, i.e. motion in verb + manner in satellite. In Özçaliskan's (2015) study, two tasks were used for the data collection, a free description condition where the subjects were asked to describe the scenes in their own words and a plus-verb condition where they were asked to use a provided manner verb. The majority of English speakers used a manner verb to describe each boundary-crossing event while in Turkish only rapid or instantaneous boundary-crossing events such as "dive INTO a pool" were described with manner verbs both in the free description condition and in the plus verb condition, however in scenes depicting temporally extended boundary-crossing events Turkish speakers did not use manner verbs in any of the two conditions. In our study the scenes "dive INTO a pool" and "TUMBLE into a net", which indicate instantaneous or rapid motion have been found to show the L2 English pattern to a greater extent (cf. Table 6). In other words, the fact that an event indicates rapid motion seems to lead the Spanish subjects to interpret the manner verb in English L2 to be target-like. Our results also support Cadierno's (2010) findings. Although her study focuses on production and our study deals with interpreting, the results are similar in that the Spanish speakers produced more than one option in the L2, in fact, they produced three possible categories in the selection of the sentences while English L1 speakers only interpreted one possible category. Findings show that English L1 speakers only interpret one lexicalisation pattern as appropriate while the L2 learners interpret three possible categories, where the lexicalisation pattern is consistent with their L1 Spanish. This seems to point to the occurrence of CLI.

This takes us to our third research question which aimed at finding out whether Spanish learners of L2 English would show the L1 lexicalisation pattern in some cases and the L2 pattern in others or not. In the scenes involving motion OVER a plane the subjects tended to choose the English L2 lexicalisation pattern, as can be observed in Table 2. They selected the target-like pattern in more than 50% of cases. However, in those scenes involving motion OUT of a boundary the L1 Spanish lexicalisation pattern was preferred in more than 40% of cases. Apparently, the scene that involves "furtive" horizontal motion (creep OUT of a house (66.7%) shows the Spanish L1 pattern to a greater extent. The scene dash OUT of a house (46.7%)) also follows the L1 Spanish lexicalisation pattern slightly more than those scenes involving vertical motion (fly OUT of a jar (43.3%) and sneak OUT of a sack (43.3%). It might be argued that CLI is at work and that horizontal motion scenes involving motion OUT of a space tend to follow the L1 pattern in cases of horizontal motion and they approach closely the L2 pattern when there is vertical motion.

Another possibility may be that the L2 pattern is preferred when the verbs used in the motion events are more frequent in English and therefore more familiar to the subjects. In order to explore this possibility we searched the British National Corpus (BNC) for the combination of "motion verb + preposition" for all the verbs that appear in our data collection task. The two verbs indicating vertical motion in our task occur more frequently than those indicating horizontal motion: "sneak out" shows 28 occurrences in the BNC and "fly out" (100) as opposed to "creep out" (14) and "dash out" (16). In other words, the fact that these verbs are more frequent in English may be related to a greater familiarity with them in the L2, which can lead the subjects to interpret the verbs in the scenes indicating vertical motion as more L2-like.

This plausible explanation, however, is not supported by the results found in the verbs involving motion INTO a bounded space where a striking difference is found. Two scenes indicate that, in cases of vertical motion, the L2 English lexicalisation pattern is preferred (dive INTO a pool, 90% and tumble INTO a net, 80%). In Spanish, the scene dive INTO a pool is typically described as *Sumergirse en una piscina* and the scene "tumble INTO a net" corresponds to *Saltar en una red*. In both verbs, *sumergirse* and *saltar,* manner is mapped onto the verb in Spanish. It may be the case that there is CLI with positive effects as in English L2 manner is also mapped into the verb. If these verbs in the L1 are seen as compatible with the L2, *transfer to somewhere* (Andersen, 1983) may happen. In other words, the occurrence of mapping of manner in the verb in the L1 can lead to transfer to the L2 as the verbs "dive" and "tumble" also map manner into the verb. This is also supported by the fact that in Turkish L1 (another V-language) rapid or instantaneous acts were described with manner verbs, as Özçaliskan's (2015) or

Naigles et al. (1998) found. Spanish L1 speakers used manner verbs in punctual vertical boundary-crossing events, as in *tirarse a la piscina* (trow oneself/plunge into the swimming-pool).

On the other hand, verbs indicating horizontal motion apparently favour the L1 Spanish lexicalisation pattern (crawl INTO a house where conflation of motion and manner only occurs in 40% of cases and run INTO the house where it occurs in 26.7% of cases). In both cases in Spanish the category path in verb + manner in satellite, in this case a gerund is used (*Entrar en casa gateando* and *Entrar en casa corriendo*, respectively). This may be due to CLI leading to non-target-like results as in English L1 the category manner in verb + path in satellite is used.

Yet in case the frequency of occurrence of these motion verbs might play a role, as in the case of motion OUT of a boundary, the British National Corpus simple search was also consulted. This allowed us to obtain the total frequency of the search string, in this case verb + preposition. In this corpus the verb + preposition "crawl into" shows 16 occurrences while "run into" has 439 occurrences. As regards those verbs indicating vertical motion, "dive into" has 38 occurrences while "tumble into" shows 12 instances. The verb "run into" which indicates horizontal motion is the most frequently occurring, followed by the verb "dive into", which indicates vertical motion while "crawl into" and "dive into" are less frequently occurring. It seems that the verbs indicating horizontal motion are more frequently occurring than those indicating vertical motion in contrast with the scenes indicating motion OUT of a bounded space. The number of occurrences of the motion verbs in the BNC, which could indicate more familiarity with the verbs for the students, does not seem to be a probable explanation for the fact that when motion OUT and INTO a bounded space occur in the horizontal axis the Spanish L1 lexicalisation pattern prevails. The possible occurrence of CLI seems to be a more plausible explanation. In the case of motion OUT a bounded space the scenes involving horizontal motion are interpreted as L1 Spanish-like and the verbs indicating vertical motion are more frequent according to the BNC. Yet, in the scenes involving motion INTO a bounded space horizontal motion also favours the L1-Spanish interpretation, in spite of the fact that horizontal motion verbs are also more frequent as the BNC shows. The interpretation of CLI as the possible cause of choosing the sentences showing the L1 lexicalisation pattern in the cases of horizontal motion is also supported by the fact that the scenes involving motion OVER a bounded space show different frequencies of occurrences in the BNC ("jump over" 46, "leap" 17, "flip over", 11 and "crawl over", 6) yet none of them seems to be related to CLI. Apparently, CLI is related to horizontal motion in scenes involving motion INTO and OUT of a bounded space but not in scenes involving motion OVER a bounded space.

7. Conclusion

Slobin's work on thinking-for-speaking in motion events has mainly relied on Talmy's theory of cognitive semantics. Our focus of study has been the interpretation of boundary-crossing events and the thinking-for-speaking hypothesis has been used as the framework. It was predicted that Spanish learners of English might have difficulties interpreting boundary-crossing events because the two languages are typologically different according to Talmy's framework and Spanish shows constraints in the traversal of boundaries as it does not typically use manner verbs across boundaries. The results drawn from the interpretation task have shown that L1 English speakers only considered one possible option that corresponds to the lexicalisation pattern of S-languages. In contrast, the Spanish learners provided three possible categories, including both the English L1 lexicalisation pattern and the Spanish L1 pattern. Furthermore, the same lexicalisation pattern as in L1 Spanish is used more frequently when motion OUT of a boundary in the horizontal axis is involved while it does not seem to occur when motion OVER a bounded space occurs. Frequency of occurrence of the "verb + preposition" in the BNC, which could indicate more familiarity of the subjects with the verbs indicating vertical motion, appears to be related to verbs indicating motion OUT of a bounded space but not to those showing motion INTO a bounded space. In our data, CLI is favoured when motion INTO a bounded space occurs in the horizontal axis, which seems to show the occurrence of CLI with non-target-like results, but when motion INTO a bounded space occurs in the vertical axis the English L2 lexicalisation pattern prevails, as *transfer to somewhere* appears to be at work leading to CLI with target-like results. Apparently the frequency of occurrence does not explain why the L1 Spanish pattern is more often used in motion OUT of a bounded space and motion INTO a bounded space in the horizontal axis. It seems that CLI influences the type of category selected by the subjects (CMM, NCMM, CMM/NCMM) and it is linked to the type of boundary-crossing event. However, we cannot forget that this study is limited to a group of Spanish learners of L2 English and a group of native speakers of English. Further research is needed with larger groups of subjects. It would also be interesting to compare different levels so as to observe if the patterns found in this study are modified at higher proficiency levels.

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SECTION III

Typology

Thinking for translating and intra-typological variation in satellite-framed languages*

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We analyze the expression of motion in translations of Tolkien's *The Hobbit* into Polish and German within the framework of Talmy's (1991, 2000) typology of macro-events and Slobin's (1991, 1996) "Thinking for speaking" hypothesis. We show that although both languages pertain to the satellite-framed typological group, Polish provides less diversified Manner and Path descriptions than German, which exploits the satellite-framed lexicalization pattern by far more productively. We relate these contrasts in the rhetorical style to the particular morpho-syntactic and semantic characteristics of the languages under discussion.

Keywords: motion events, Manner, Path, English, German, Polish, intra-typological variation

1. Introduction

According to Talmy (1991, 2000), the world's languages can be classified as either satellite-framed (e.g., Slavic and Germanic) or verb-framed (e.g., Romance). In satellite-framed languages, the Manner component is allowed to be encoded in the verbal root, whereas the Path remains as a satellite (e.g., *run out*). By contrast, in verb-framed languages, the Path is encoded in the verbal root, whereby the Manner is not typically allowed to be conflated with the motion verb (e.g., *salir corriendo* 'exit running'). Slobin (1991, 1996) observes that these lexicalization differences are directly reflected in the rhetorical style and, in particular, satellite-framed speakers provide more dynamic descriptions of motion events, which

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contain expressive details about Path and Manner, while verb-framed speakers tend to provide static descriptions with less information about Manner and Path. As pointed out by Slobin (2005), this is especially relevant for the process of translation, since translators have to adjust the rhetorical style of the source language to the target language.

Most typological studies on translation contrast languages from different lexicalization patterns, while there is little research on languages pertaining to the same typological group, some notable exceptions being Ibarretxe-Antuñano's (2003) analysis of Basque and Spanish, Sugiyama's (2005) analysis of Japanese and French and Kopecka's (2010) comparison of Polish and English (see also Ibarretxe-Antuñano & Filipović, 2013). In order to further contribute to this line of investigation, in this chapter we examine the expression of motion events in translations of Tolkien's *The Hobbit* (Chapter 6) into Polish and German, both satellite-framed (Kopecka, 2010; Lewandowski, 2014a; Berthele, 2004, 2006). We also make reference to the Spanish version, as an emblematic example of a verb-framed translation.

Although our data corroborate Slobin's finding that narratives in satellite-framed languages (i.e., German and Polish) contain much more information about Manner and Path than those in verb-framed languages (i.e., Spanish), we observe, in line with Ibarretxe-Antuñano (2003), that there is important intra-typological variation. In particular, although English, German and Polish pertain to the same typological group, these languages differ with regard to the diversity of Path satellites as well as their morpho-syntactic combinability with the Manner component. Basically, as far as the expression of motion events in narratives is concerned, German exploits the satellite-framed pattern almost as productively as English; by contrast although Polish keeps more faithful to the original than the verb-framed translations, as Slobin (2005) predicts, it often uses some of the strategies found in the Spanish translation, such as e.g., omission of some Manner or Path information, translation of the Manner information in a separate expression or insertion of an additional verb in order to preserve the directional content of the so-called complex Paths (e.g., *dash through the gate-guards, out of the lower door* (…) *down here*).

This article is organized as follows. In Section 2 the basic concepts related to Talmy's (1991, 2000) typology of motion events (2.1) and Slobin's (1991, 1996) "Thinking for speaking" hypothesis (2.2) are introduced and a brief overview of the intra-typological variation in the expression of motion is provided (2.3). The main issue of the present chapter is dealt with in Section 3. After describing the procedure of our study (3.1), we report and discuss the results (3.2). Some relevant conclusions are drawn in Section 4.

2. Theoretical background

2.1 Talmy's typology of motion events

Talmy (1991, 2000) classifies languages as either verb-framed (such as Romance languages, Turkish, Japanese, Basque and Hebrew) or satellite-framed (such as Slavic, Germanic or Hungarian). Whereas the former lexicalize the Path of motion in the verb root and express the Manner, if specified, in a secondary element (e.g., a prepositional phrase (PP) or a gerund), the latter codify the Manner in the verb root, with the Path being associated to a particle, a prefix, etc. The paradigmatic examples in (1a) and (1b) illustrate this opposition.

(1) a. *La botella entró en la cueva* (*flotando*). (Spanish)
the bottle entered in the cave floating
'The bottle entered the cave (floating).'
b. *The bottle floated into the cave.* (English)

As may be appreciated from the above sentences, within this typology, Spanish appears to be a verb-framed language. By contrast, Polish and German belong to the opposite typological group, since, as shown in the examples below, the Path component is coded in these languages by means of prefixes (e.g., *w-* in (2b)), particles (e.g., *rein-* in (2c)), etc. together with specialized PPs (i.e., *do pokoju* 'to the room' in (2b) and *ins Zimmer* 'to the room' in (2c)).

(2) a. *John ran into the room.*
b. *Jan w-biegł do pokoju.* (Polish)
John W-ran to room.GEN
c. *Johann ist in-s Zimmer rein-gelaufen.* (German)
John is.AUX in-ART room into-ran.PTCP

However, it is important to mention at this point that verb-framed languages, such as Spanish, sometimes allow the conflation of Manner with Motion in the main verb, when the event does not involve crossing of a spatial boundary (Slobin & Hoiting, 1994). Consistently, the use of *caminar* 'walk' is possible in (3), because the prepositions *hasta* 'up to' and *hacia* 'toward' imply that the entity coded as a subject (*Juan*) does not surpass the limits of the goal of movement (*the school*).[1]

(3) *Juan caminó hasta / hacia la escuela.*
John walked up to toward the school
'John walked up to / toward the school.'

1. Cf. Aske (1989) and Fábregas (2007, pp. 170–172) for some further discussion.

2.2 Slobin's "Thinking for speaking" hypothesis

Inspired by Talmy's (1991, 2000) typology of motion events, Berman and Slobin (1994, pp. 118–119) observed on the basis of oral narratives that speakers of satellite-framed languages provide more detailed descriptions of Path within a clause than speakers of verb-framed languages, which the authors relate to the fact that satellite-framed languages allow for accumulation of several Path satellites to a single verb (e.g., *the deer threw them off over a cliff into the water*). Speakers of satellite-framed languages also tend towards greater specification of Manner, certainly because this semantic component is typically expressed in the main verb, as Talmy's (1991, 2000) typology predicts. In verb-framed languages detailed Path and Manner elaborations within a clause are by far more restricted, since in contrast to satellite-framed languages (i) multiple Paths cannot be compacted around a single verb, but rather each Path segment is typically expressed by a separate verb and (ii) Manner is usually coded in separate adjunct expressions, which are optional and less compact in form (e.g., Sp. *salir corriendo* 'exit running', *entrar de un salto* 'enter in a jump', etc.) (see also Strömqvist & Verhoeven, 2004, for relevant discussion).

In relation with these findings, Slobin (1996) claims that typological differences between languages in the expression of motion (and possibly other cognitive domains) might have consequences for cognitive processes, in particular, for the way speakers think about motion when talking about it. More concretely, Slobin (1996) hypothesizes that a language user attends to those characteristics of the event s/he needs to describe which are readily encodable in the linguistic forms available in his/her language (see also Slobin, 1987, 2003). In other words, linguistic systems induce different forms of "thinking for speaking", in Slobin's terms, i.e., thinking shaped by the requirements of the linguistic code. In contrast to the well-known Sapir-Whorf hypothesis (Sapir, 1928; Hoijer, 1954; Whorf, 1956), Slobin (1996) does not refer to general patterns of habitual thought but to how speakers conceptualize the world (events, objects, etc.) in order to meet the demands of the morpho-syntactic, semantic, etc. structure of their language during the act of speaking. This, in turn, has implications for the development of a particular rhetorical style (Slobin, 1996, p. 77), related in the case of motion to the contrasts between Manner and Path descriptions in verb-framed and satellite-framed languages, which have already been mentioned.

The phenomena under discussion are especially relevant for the process of translation (Slobin, 2003, 2005), which consists in adjusting the rhetorical style of the source language to the target language. For instance, when translating motion descriptions from English to Spanish the expressiveness of Manner and Path descriptions in satellite-framed languages has to be adapted, as much as possible,

to the verb-framed lexicalization patterns. Slobin (2005) reveals in a study of translations of Tolkien's *The Hobbit* that Manner information is usually retained in satellite-framed languages, while verb-framed languages tend to use less Manner verbs in terms of both type and token frequency, because, as mentioned above, they tend to commit the main verb slot to Path verbs. Consistently, Manner information is either omitted or specified in other syntactic constituents, such as for example adverbs, gerunds and PPs. As far as the Path component is concerned, when the English original presents complex Paths consisting of one verb and many satellites and PPs, satellite-framed languages such as Germanic follow the same pattern; however, verb-framed languages use different translation options, such as for example picking up a different verb for each segment or reducing the Path description.

As Slobin (2004, 2005) himself observes, these differences regarding Path and Manner expression in narratives are a general tendency, because important differences exist between languages belonging to the same typological group, which is due to their particular morpho-syntactic and lexical characteristics. In order to shed more light on the issue of intra-typological variation, the next section provides a brief overview of some relevant studies conducted into this topic.

2.3 Inter- and intra-typological variation in the expression of motion

The fact that languages belong to the same typological group does not entail that they linguistically conceptualize motion events in the same way (Ibarretxe-Antuñano & Hijazo-Gascón, 2012). For example, as shown by Ibarretxe-Antuñano (2003, 2004), although Basque and Spanish are both verb-framed, Basque provides more complex Path descriptions thanks to the richness of morphological means for encoding directionality, such as locational cases and postpositions. This allows speakers of Basque to use structures which are unusual in verb-framed languages, such as for example a single verb with more than one case-marked Path segment (see (4) taken from Ibarretxe-Antuñano, 2003, p. 161).

(4) *Bera oraindik noraezean zebilen, goiko bailara txikitik kanpo, bere mugaz gain eta bestaldeko aldapan behera.*
he:ABS still aimlessly walk:3S:IMPF top:AND valley small:ABL outside it:GEN limit:INST top and other.side:AND slope:LOC below:ALL
'He was still walking aimlessly, out of the small high valley, over its edge and down the other slopes.'

Intra-typological differences have also been observed in the domain of manner of motion. Slobin (1997) first noticed that in satellite-framed languages, the process of lexicalization of the Manner component in the verb stem is more prolific than in verb-framed languages. Satellite-framed languages encode more fine-grained

semantic dimensions of Manner and hence their manner-of-motion verb lexicon is richer than in verb-framed languages. Although, to the best of our knowledge, no definitive count of manner-of-motion verbs across languages has yet been undertaken, Slobin attempted to arrive at complete listings for several languages by means of back translation, dictionary search, and corpora. He concluded that satellite-framed languages such as English, German, Dutch, Russian, and Hungarian each have several hundred Manner verbs while verb-framed languages, such as Spanish, French, Turkish, and Hebrew in particular, have less than 100 (Slobin, 2006, p. 71; see also Cardini, 2008; Cifuentes-Férez, 2010). The following translations of four Spanish motion verbs into English found in the Collins dictionary and provided by Slobin (1997, p. 458) serve as a paradigmatic illustration of this phenomenon:

(5) a. *deslizarse* = creep, glide, slide, slip, slither
b. *escabullirse* = scurry off, scuttle away/off, slip away
c. *saltar* = bound, dive, hop, jump, leap, spring
d. *tropezar* = stumble, trip, tumble

One should, however, be aware that the lexicalization of Manner dimensions in the verb stem is a gradient phenomenon and that notable differences can be found even within the satellite-framed languages. For example, as shown by Kopecka (2010), Manner lexicalization processes are much more restricted in Polish than in English. Her study shows that, despite its typological similarity to English in encoding Path in a satellite and Manner in the verb, Polish does not exploit the slot of the main verb as productively as English. For instance, in English there are several verbs for jumping (e.g., *hop*, *hurdle*, *jump*, *leap*, *skip*), while there is only one Polish verb lexicalizing this type of motion, namely *skakać* 'jump'. By the same token, Polish has one 'travel' verb, *podróżować*, whereas English has several verbs including *journey*, *tour*, *travel*, *trek*, and *voyage*. These findings are further corroborated by Slobin, Ibarrexte-Antuñano, Kopecka, and Majid (2014, pp. 710–711).[2]

All these facts suggest that an exhaustive cross-linguistic analysis of Manner and Path expression goes beyond Talmy's (1991, 2000) binary typology of lexicalization patterns. As stated by Slobin (2005, p. 248) himself, "[r]ather than put languages into typological categories, it might be more profitable to lay out the collection of factors that, together, interact to contribute to particular rhetorical styles".

In order to further contribute to the investigation of intra-typological variation and its impact on the particular rhetorical styles, five satellite-framed versions of *The Hobbit*, the English original and two German and two Polish translations

2. See also Sugiyama (2005) for a comparison of the Manner component in French and Japanese.

will be compared. Spanish will also be taken into account as a reference point of a verb-framed translation. The next section describes the methodology of our study in more detail.

3. The present study

3.1 Methodology

In order to make a coherent cross-linguistic analysis possible, as the empirical basis for our study we have selected one of Tolkien's most read book, *The Hobbit*, which has been translated into ca. 60 languages and as such it provides a useful tool for cross-linguistic research. In particular, we have focused on Chapter 6, already used by Slobin (2005) and other researchers (e.g., Ibarretxe-Antuñano, 2003; Sugiyama, 2005). For the purposes of this chapter we have extracted nine passages considered specifically relevant by previous researchers because of their particularly rich elaborations of Path and Manner.[3] Overall, the passages contain 31 motion events, 24 of which are intransitive, while only 7 correspond to transitive or caused motion. Since there might be differences in the morpho-syntactic behavior of intransitive and transitive motion verbs (e.g., with respect to the combinability with satellites; see Lewandowski, 2014a), in order to make the analysis as uniform as possible, we have focused on the intransitive events, while the study of caused motion remains an important direction for future research. Two translations into German (Scherf's 1957 and Krege's 1998) and two translations into Polish (Skibniewska's 1960 and Braiter's 1997) have been taken into account. When relevant, the translation into Spanish, the only existing one (Figueroa's 1982), will also be referred to.

3.2 Results and discussion

3.2.1 *Dealing with Manner*

Slobin (2005) suggests that there are several ways to analyze the issue of Manner information, one of them being to count the number of Manner verbs that appear in each language. According to the typological observations exposed above, German and Polish translators (but not the Spanish one) should retain Tolkien's rich and expressive motion verb lexicon. However, as can be appreciated in Table 1, the picture is not so clear-cut, since Polish differs in this respect from

3. The relevant passages can be identified in Ibarretxe-Antuñano (2003, pp. 169–176). For reason of space we are not able to include our complete data base as an appendix to this chapter.

English and German (see also Appendix 1). The abbreviations should be read as follows: E refers to the original version of *The Hobbit*, G1 refers to the German translation by Scherf, G2 to the German translation by Krege, P1 to the Polish translation by Skibniewska, P2 to the Polish translation by Braiter and S to the Spanish translation.

Table 1. Type and token frequency of Manner verbs

	E	G1	G2	German: Mean	P1	P2	Polish: Mean	S
Tokens	20	19	21	20	23	17	20	16
Types	18	17	20	18.5	17	14	15.5	15

Overall, in the passages under discussion Tolkien uses 24 verbs referred to intransitive motion, 20 of which are Manner verbs, consisting of 18 different types.[4] The German translations use an average of 20 Manner verb tokens and 18.5 Manner verb types, thus approaching the original. On the other hand, the Polish translations of *The Hobbit* include an average 20 Manner verbs tokens, but the Manner description is less diverse, since it corresponds to only 15.5 types. This result matches the English and the German texts in terms of token frequency; however, as far as the type frequency is concerned it approaches the Spanish translation where we have found 15 types and 16 tokens of Manner verbs.

While it is true that individual differences between the two Polish translations are striking in the sense that Skibniewska's (P1) apparently parallels the Germanic pattern, a closer examination of the expression of Manner in our data base corroborates the idea that Polish considerably differs from English and German by elaborating less detailed Manner descriptions.

In order to explain the relevant contrasts, first it is important to point out that we have identified four main translation strategies of Manner, namely: (i) rendering of the same (see (6)) or very close Manner content in the main verb (see (7)), (ii) use of a less specific Manner verb or a different kind of verb (e.g., Path verb) and additional specification of Manner in an adjunct (see (8)), (iii) rendering of a less specific Manner information, in which case some semantic content is lost in the target language (see (9)), (iv) rendering of a different Manner information (see (10)), (v) omission of Manner by either using a different kind of verb (see (11)) or simply eliminating the whole motion event (see (12)).[5]

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4. The remaining predicates are the Path verb *come* expressing motion towards a deictic centre (see Ricca, 1993; Lewandowski, 2010) and the neutral verb *go*, which appears three times.

5. The strategies proposed in this chapter are based on previous investigations into the translation of motion events and, in particular, on Slobin (1996, 2005), Ibarretxe-Antuñano (2003) and Ibarretxe-Antuñano and Filipović (2013).

(6) a. (…) *he crept forward carefully.*
b. (…) *kroch er vorsichtig weiter.* (G1)
crept he carefully forward
'(…) he crept forward carefully.'

(7) a. (…) *all about the glade wolves were rolling over and over* (…).
b. (…) *po całej polanie tarzały się bestie* (…). (P1)
on whole glade.LOC were wallowing beasts.NOM
'(…) the beasts were wallowing all about the glade (…)'

(8) a. *They slid into the edge of a* (…) *wood of pines* (…).
b. *Ześlizgując się, dotarli na skraj kępy sosen.* (P2)
sliding REFL they.reached on edge.ACC clump.GEN pines.GEN
'They got to the edge of a clump of pines by sliding.'

(9) a. (…) *they fled off down the slopes* (…).
b. (…) *odbiegły w dół zbocza* (…). (P2)
they.off.ran down slope.GEN
'(…) thay ran off down the slope (…).'

(10) a. (…) *they were marching* (…) *over a floor of pine-needles* (…).
b. (…) *schritten sie* (…) *über einen Teppich von Kiefernnadeln* (…). (G2)
strode they over a floor.ACC of pine.needles.DAT
'(…) they strode over a floor of pine-needles (…).'

(11) a. (…) *they were pushing through a sea of bracken* (…).
b. (…) *durchquerten sie ein* (…) *Meer von Farnkräutern* (…). (G1)
crossed they a sea.ACC of bracken.GEN
'(…) they crossed a sea of bracken (…).'

(12) a. *He was on a stony path winding downwards* (…).
b. *Znajdował się na kamienistej ścieżce* (…). (P2)
he.found REFL on stony path.LOC
'He was on a stony path (…).'

As can be appreciated, *kroch* (the past form of *kriechen*) in (6) is a faithful translation of the original motion verb *creep*, while *tarzać się* 'wallow' in (7) does not denote exactly the same type of motion as *roll*, but their meanings are very close. Therefore, both sentences correspond to the first translation strategy. The utterance in (8) illustrates the second strategy because the Manner information corresponding to *slide* (see (8a)) is not provided by the verb *dotrzeć* 'reach', but it is recovered in the gerund *ześlizgując się* 'sliding'. In (9), which exemplifies the third strategy, the English verb *flee*, which means 'run away from a place or situation of danger' according to the *Oxford dictionary* is rendered by the less specific Polish verb *biec* 'run'. In (10) *schritten*, the past form of *schreiten* 'stride' with the approximate meaning 'go quietly' as defined by the *Duden dictionary*, refers to a different Manner content than the one coded by *march* (i.e., walk quickly and with

determination, cf. the *Oxford dictionary*), so this example belongs to the fourth strategy. Finally, (11) and (12) represent the fifth translation strategy: in (11) the Manner verb *push* is substituted by the Path verb *durchqueren* 'cross', while in (12) the whole segment *winding downwards* is excluded from the target text.

Table 2 summarizes the use of the strategies distinguished above in German and Polish (for the sake of comparison Spanish has also been included in the table). The abbreviation S stands for strategy and the abbreviations G1, G2, P1, P2 and S should be read as above.

Table 2. Translation strategies of Manner

	G1	G2	German: Mean	P1	P2	Polish: Mean	S
S1 – same or similar Manner	17	16	16.5 (82.5%)	6	6	6 (30%)	9 (45%)
S2 – additional specification in an adjunct	–	–	–	2	2	2 (10%)	5 (25%)
S3 – more general Manner	–	2	1 (5%)	10	6	8 (40%)	1 (5%)
S4 – different Manner	1	1	1 (5%)	2	2	2 (10%)	1 (5%)
S5 – omission of Manner	2	1	1.5 (7.5%)	–	4	2 (10%)	4 (20%)

A cursory look at Table 2 is enough to be aware that the clearly predominant translation strategy in German consists in providing the same or at least very close Manner description by means of the main verb (82.5% of the cases), while the other strategies oscillate only between 5% and 7.5%. By contrast, in Polish the first strategy corresponds to only 30% of cases and, consistently, the other ones are used considerably more frequently than in German, the prevailing one being S3, i.e., rendering of a less specific Manner information (40%). It is followed by S2, i.e., additional elaboration of Manner in an adjunct (10%), S4, i.e., rendering of different Manner information (10%) and S5, i.e., omission of Manner in the target text (10%). Again, this result approaches Polish to Spanish, where the same Manner content is rendered only in 45% of motion events. It is followed by the strategies 2 (25%), 5 (20%), 3 (5%) and 4 (5%). The Fisher's exact test revealed significant differences between German and Polish in the use of the translation strategies ($p > .05$).

The question that immediately arises is why these strategies are employed and why there is intra-typological variation between German and Polish. Apparently, the main reason involved in this phenomenon could be the richness of the manner-of-motion lexicon. One could think that this semantic component needs to be omitted, reduced or specified outside the verb because in many cases the target language lacks an equivalent for the original English motion verb. Although it is certainly true that Polish encodes less fine-grained semantic dimensions

than English, as argued in Kopecka's (2010) intra-typological study, a dictionary search confirmed that in Polish as well as in German there do exist exact or at least very close equivalents for each intransitive motion verb used in the passages of *The Hobbit* analyzed here. Therefore, the problem is not the availability of Manner verbs in the lexicon, but rather the variation between Germanic (English and German) and Polish in the description of Manner relies in the ability of a motion verb to combine with a Path component. What is meant here is that Polish prefixes and PPs show more restricted compatibility with Manner verbs than German and English particles, which seem to be morpho-syntactically more flexible.

For example, the verb *limp* in *they limped* (…) *down the slopes* is translated into German by means of *humpeln* 'limp' (cf. e.g. G1: *humpelten sie die* (…) *Hänge* (…) *hinunter*, lit. 'they limped the slopes down'), while the Polish translators either specify the Manner in an adjunct (P2: *kuśtykając ruszyli w dół* 'limping, they moved down') or they just use the more general Manner verb *biec* 'run' (P1: *zbiegli* (…) *na ścieżkę*, 'they ran down to the path'). The reason behind this is that some verbs denoting a very rich and specific Manner, such as *limp* or *swing* (cf. *[they] swung themselves into lower branches* with P1: *powyłazili na najniższe gałęzie* 'they wandered onto lower branches'), just to mention two examples from Chapter 6 of *The Hobbit*, cannot be used in Polish in directed motion events, i.e. they admit only locative adjuncts. As argued by Boas (2006) and Lewandowski (2014b), the specificity of the verbal meaning seems to be correlated with its range of applications, that is, verbs with a less specific meaning can be used to describe a broader range of situations than verbs with a more precise semantics, whose compatibility with different constructional schemas (e.g., prefixes, PPs, etc.) is more restricted.

(13) *kuśtykać w pokoju / *do pokoju*
limp in room.LOC to room.GEN
'limp in the room /*to the room'

(14) *kołysać się w pokoju / *do pokoju*
swing REFL in room.LOC to room.GEN
'swing in the room /*to the room'

Similarly, the Manner verb *gnać* 'dash, speed', when used intransitively, is compatible with different kinds of directional PPs (e.g., *gnać do lasu / przez las* 'dash to the wood / through the wood'); however, it apparently cannot combine with directional prefixes (**wgnać do lasu* 'dash into the wood', **przegnać przez las* 'dash through the wood'), which, as will be shown in the next section, delimit the motion event in terms of telicity. As a consequence, in order to retain the bounded character of the event *we dashed through the gate-guards* the Polish translators

choose to use a different verb, namely, *przebijać się* 'break through' (*przebijając się przez straże* 'breaking through the guards'), which makes reference to the domain of effort and difficulty, but not to the domain of speed. By contrast, in German the verb *preschen* 'dash' can be easily employed in this context (see (30a)).

Other verbs, such as sound emission verbs (see Levin, 1993) present an even more restricted distribution in argument structure constructions (cf. Goldberg, 1995, 2006), since they are not able to appear in any kind of directed motion event. As a consequence, expressions of the kind *lumps of rock were* (…) *crashing down* where *crash* refers to a kind of sudden and loud noise is rendered in German by its direct equivalent, namely *krachen* (G1: *sie krachten* (…) *hinunter* 'they crashed down'); however, although a similar verb is available in the Polish lexicon (*huknąć* 'crash'), it is excluded from motion events and thus the translators are obliged to either omit this motion event (P2) or to use a different kind of verb (P1: *sunęły w dół* 'they slid down').

In short, it can be concluded that Germanic (at least English and German) shows more flexibility than Polish as far as the compatibility of Manner verbs with the Path component is concerned. This is the reason why Polish translators are obliged to apply by far more frequently the strategies 2–5 than German translators. Of course, we have only provided a very general overview of this issue, sketching out the most striking phenomena found in our data base, without offering any deep theoretical analysis, which is beyond the scope of this chapter. Undoubtedly, more research and a more extensive empirical basis is needed in order to systematically investigate the factors involved in the restrictions related to the Path-Manner combinability in Polish.

3.2.2 *Dealing with Path*

According to Talmy's (1991, 2000) typology, in verb-framed languages the Path component is typically conflated with the motion verb, while in satellite-framed languages it is expressed in "a grammatical category (…) that is in a sister relation to the verb root" (Talmy, 2000, p. 222), e.g., English particles (*run out*), Polish prefixes (*wy-lecieć* 'out-fly') or Chinese verbal directional complements (*piào guò* 'float past'). Nevertheless, as anticipated in the previous section, the Path can also be elaborated by means of other surface elements, such as prepositional and adverbial phrases (see (15a, b)) or nominals, such as nouns in instrumental case in Polish indicating motion along a path as in (15c), which are not considered satellites.

(15) a. *[sie] schwangen sich in die unteren Zweige* (…).
they swung REFL in the lower branches.ACC
'[they] swung themselves into lower branches (…)'
b. (…) *he crept forward* (…).

c. (…) *zbiegli* (…) *łagodnym zboczem* (…).
they.down.ran gentle slope.INST
'(…) they ran (…) along the gentle slope (…)'

As for Polish, it is important to stress that prefixes, unlike other Path elements, impose temporal limits on the described event, thanks to their perfectivizing value (see e.g., Dąbrowska, 1997; Filip, 2003; Przybylska, 2006; Janda, 2007; Lewandowski, 2014a). Consistently, the sentence in (16) simply refers to an atelic process of change of location; however, the prefix in (17) turns it into a telic one thus implying that the endpoint of motion has been reached.

(16) (…) *kamyki* (…) *sunęły w dół* (**w minutę*) (P1)
stones.NOM slid downwards in minute.ACC
'Stones were sliding down (*in one minute).'

(17) *Dori* (…) *zsunął się na ziemię* (*w minutę*). (P2)
Dori down.slid REFL on floor.ACC in minute.ACC
'Dori slid down the floor (in one minute)'

As far as German is concerned, one should be aware, first of all, that different kinds of satellites can be distinguished in this language. For the purposes of this chapter they can be divided into prefixes (cf. (18)) and verb particles which include particles derived from spatial prepositions (cf. (19)), particles derived from adverbs (cf. (20)) and double particles (cf. e.g. Fleischer and Barz, 1992 and McIntyre, 2001, for a more detailed analysis of the very complex phenomenon of double particles), which are prefixed with the deictic particle *hin-* or *her-* referring to motion away from and towards the speaker, respectively (cf. (21)) (cf. also Berthele, 2004, 2006; Goschler & Stefanowitsch, 2010; Arias Oliveira, 2012; Harr, 2012).

(18) (…) *[sie] durchpflügten* (…) *ein Meer von Farnkräutern.* (G2)
they through.ploughed a sea.ACC of fern.DAT
'(…) they ploughed through a sea of fern.'

(19) *Dann bin ich ihm nachgeschlichen* (…).[6] (G2)
then am.AUX I him after.creep.PTCP
'Then I crept after him.'

(20) *Dori* (…) *ließ Bilbo hochkrabbeln* (…). (G2)
Dori let Bilbo high.crawl
'Dori (…) let Bilbo crawl up (…).'

(21) *[sie] flohen* (…) *die Hänge hinunter.* (G1)
they fled the slopes thither.down
'They fled down the slopes.'

6. In opposition to prefixes, particles are separated from the verb stem with *ge-* in the past participle form (cf. *durchpflügt* 'through.plough.PTCP' and *nachgeschlichen* 'after.creep.PTCP').

Other linguistic tools for expressing Path are prepositional and adverbial phrases, as indicated in (22).[7]

(22) *Wir sind* (…) *durch das Herz des Gebirges gekommen* (…). (G1)
we are.AUX through the heart.ACC the mountains.GEN come.PTCP
'We have (…) come through the heart of the mountains (…).'

(23) (…) *größere Steine* (…) *krachten bergab.* (G2)
bigger stones crashed downhill
'(…) bigger stones crashed down.'

These different means of Path codification can be combined within a clause, for example, when speakers need to emphasize a Path segment (cf. the double particle *hinein* in (24)) or to introduce several Path segments within a clause (see below).

(24) *Sie rutschten in den Saum eines Kiefernwaldes* (G2)
they slid in the edge.ACC a pines.wood.GEN
hinein (…).
into (away from the speaker)
'They slid into the edge of a wood of pines'

Nevertheless, aspect, unlike in Slavic, is not a morphological category in German and, consistently, a motion event does not require the presence of a prefix or verb particle in order to become telic. In other words, both satellites and other Path phrases (e.g., PPs) show the ability to turn an atelic motion event into a telic one (cf. (25) with (26)).

(25) a. *Das Paar hat *in einer Stunde getanzt.*
the couple.NOM has.AUX in one hour dance.PTCP
'The couple danced (*in one hour)'
b. *Das Paar ist in einer Minute ins Zimmer getanzt.*
the couple.NOM is.AUX in one minute to.the room.ACC dance.PTCP
'The couple danced into the room in one minute.'

7. The identification of the grammatical status of the different directional items appears not to be an easy task (cf. Kolehmainen, 2005; Goschler & Stefanowitsch, 2010, pp. 105–107). Especially troublesome seems to be here the distinction between adverbial satellites (i.e., verb particles) and the syntactically independent adverbs, since the formal tests based on morpho-syntactic diagnostics do not always work (see e.g., Goschler & Stefanowitsch, 2010, p. 106). According to Goschler and Stefanowitsch (2010) Path elements cannot always be distinguished from each other in a clear-cut fashion, but rather they form a continuum of constituents with different grades of association with the motion verb, which could correspond to different steps in the diachronic process of lexicalization. See also Filipović (2007) for an interesting discussion of the distinction between satellites and prepositions in English.

(26) a. *Martin hat *in einer Stunde mit den Füßen getrampelt.*
Martin has.AUX in one hour with the feet.DAT stamp.PTCP
'Martin stamped his feet (*in one hour).'
b. *Martin ist in einer Minute hinuntergetrampelt.*
Martin is.AUX in one minute down.stamp.PTCP
'Martin stamped down in one minute.'

As will be shown later on, this aspectual divergence between German and Polish involves several intra-typological contrasts in the domain of Path description.

In the following paragraphs, we will examine in the first place the translation of simplex Paths, i.e., Paths which consist of a single directional segment (cf. (27)), and afterwards complex Paths (cf. (28)) will be dealt with. Examples such as (29) have not been taken into account, since they refer to the so-called self-contained motion, where "an object keeps its same basic, or 'average' location" (Talmy, 2000, p. 35), i.e., the glade in the case under discussion.

(27) a. (…) *they were sliding away* (…).
b. (…) *he crept forward carefully.*
c. *Dori actually climbed out of the tree* (…).

(28) a. (…) *we had dashed through the gate-guards, out of the lower door, and* (…) *down here.*
b. *He still wandered on, out of the little high valley, over its edge, and down the slopes beyond.*

(29) (…) *all about the glade wolves were rolling over and over* (…).

As for simplex Paths, it is remarkable that German provides considerably more dynamic, more vivid and more diversified Path descriptions than Polish. Crucially, according to the description offered at the beginning of this section German possesses a richer inventory of directional elements than Polish, which includes not only prefixes, prepositions and adverbial expressions, but also different kinds of verb particles not available in the Polish lexicon. This allows German translators to provide both syntactically and semantically more heterogeneous Path elaborations than the ones found in the Polish translations. In particular, we have found seven different morpho-syntactic constructions for describing simplex Paths in German and only four constructions used in Polish (see Table 3). While there is no one clearly prevailing pattern in German, Polish tends to encode Path by means of the standard "prefix + PP" combination. It is not surprising, since on the one hand, the presence of a prefix is obligatory in the case of bounded events and, on the other hand, the most usual way of introducing the Ground (a reference point with respect to which motion takes place, e.g. a spatial goal) is by means of a PP. This is not the case of German where telicity is not dependent on spatial satellites and Ground elements are commonly introduced without the presence

of a preposition (see Example (21)), thus giving rise to more diverse morpho-syntactic configurations of directional elements.

Table 3. Codification of simplex Paths in German and Polish

	G1	G2	P1	P2
Prefix (…) *[sie] durchpflügten* (…) *ein Meer von Farnkräutern.* they through.ploughed a sea.ACC of fern.DAT '(…) they ploughed through a sea of fern.'	1	1	1	–
Adverbial particle *Dori* (…) *ließ Bilbo hochkrabbeln* (…). Dori let Bilbo high.crawl 'Dori (…) let Bilbo crawl up (…).'	1	3	–	–
Prepositional particle (…) *als sie mit dem Abstieg begannen* (…). when they with the decline.DAT started '(…) When they started climbing away (…)' NB: *Abstieg* 'decline' is a nominalization of *absteigen* 'away.climb'.	1	1	–	–
Double particle *[sie] flohen* (…) *die Hänge hinunter.* they fled the slopes thither.down 'They fled down the slopes.'	4	2	–	–
Adverbial expression (…) *ruszyli w dół* (…). they.moved downhill '(…) they moved downhill (…).'	1	3	3	1
PP *[sie] schwangen sich in die unteren Zweige* (…). 'they swung REFL in the lower branches.ACC '[they] swung themselves into lower branches (…)'	4	1	–	–
Prefix + PP *Dori* (…) *zsunął się na ziemię* (…). Dori down.slid REFL on floor.ACC 'Dori slid down the floor (…)'	–	–	8	9
Prefix + adverbial expression (…) *ześlizgiwali się w dół* (…) they.down.were.sliding REFL downhill '(…) they were sliding downhill (…),'	–	–	2	2
Double particle + PP *Sie rutschten in den Saum eines Kiefernwaldes hinein* (…). they slid in the edge.ACC a pines.wood.GEN into 'They slid into the edge of a wood of pines.'	2	2	–	–

Especially interesting from the point of view of intra-typological variation is also the phenomenon of complex Paths. According to the characterization of languages offered in Section 2, satellite-framed languages can freely combine many Path phrases around a single verb, while verb-framed languages tend to use a separate verb for each Path element. After analyzing five complex Paths included in the passages of *The Hobbit* that we have taken into account in our study, it can be concluded that the German translators generally follow the English model (cf. (28a) and (30a) and (28b) with (30b), both extracted from G1), although in some cases a directional segment can remain unexpressed. For example, in (30a) the vertical Path "down" is omitted, which is due to a personal choice of the translator, since German allows for the use of for example, *bis hier herunter* (lit. 'till here hither.down') instead of *bis hierher*. In contrast, in (30b) the translator added, most probably for the same personal reason, the Path "away" absent in the English original.

(30) a. *als wir zwischen den Torwachen hindurchpreschten, raus*
when we between the gate-guards.DAT thither.through.dashed out
aus dem (…) *Tor* (…) *bis hierher.*
from the gate.DAT till hither.here
'when we dashed through the gate-guards, out of the (…) door up to here'

b. *Er marschierte weiter, aus dem* (…) *Hochtal heraus,* über
he marched on from the high.valley.DAT hither.out over
den Bergrand hinweg und den jenseitigen Hang
the mountain.edge.ACC away and the opposite slope.ACC
hinab.
thither.down
'He marched on, out of the (…) high valley over the edge of the mountain away and down the slope beyond.'

By contrast, Polish does not allow more than one bounded Path segment to appear around a single motion verb. This fact is of course related to the aspectual properties of verbal prefixes: since they make the motion event telic, only one prefixed verb can occur per one temporally delimited Path element. Consistently, in the relevant cases each portion of Path needs to be translated by means of a separate predicate. This is a translation strategy broadly used in verb-framed languages, the main difference being that in Polish each bounded Path corresponds to a prefixed Manner verb, while in verb-framed languages each Path segment is typically rendered by a Path verb or another kind of verb that does not encode Manner ((cf. (32)). The Example (31a) is extracted from P1, and (31b) corresponds to P2.

(31) a. (…) *wędrował naprzód, wyszedł z* (…) *dolinki przez* (…)
he.was.marching forward out.walked from valley.GEN through
grzbiet i zbiegł w dół.
crest.ACC and down.ran downhill
'(…) he was wandering forwards, walked out of the (…) valley over (…) the crest and then he ran down.'

b. *wybiegliśmy* (…) *bramą przebijając się przez straże*
we.out.ran (…) door.INST through.breaking REFL through guards.ACC
i (…) *pognaliśmy tutaj.*[8]
and we.started.rushing here
'We ran out (…) through the gate, breaking through the guards and then we started rushing up to here.'

(32) (…) *nos abrimos paso entre los centinelas, salimos por*
we.REFL opened way between the guards we.exited through
la puerta (…) *y descendimos hasta aquí* (…).
the door and we.descended till here
'(…) we made our way between the guards, exited through the door and descended up to here (…).'

Other strategies used in the context of complex satellites are the transformation of a bounded Path segment into an unbounded one, in which case a single motion verb can appear with more than one Path, and the omission of some Path information. Both are found in the translation of (28b) proposed by Skibniewska (1960) where the segment "out of" is omitted, while the remaining Path elements are expressed by means of directional adverbs and a nominal assembled around one unprefixed verb.

(33) (…) *maszerował naprzód dnem* (…) *dolinki i* (…) *w dół zbocza.*
he.was.marching forward bed.INS valley.GEN and downwards edge.GEN
'(…) he was marching forward, over the bed of the valley and down the edge.'

Table 4 summarizes the translation of complex Paths into German and Polish.

Table 4. Translation of complex Paths into German and Polish

	G1	G2	P1	P2
Translation of the whole Path sequence	3	3	1	1
Omission of some Path element	2	2	4	3
Insertion of a new verb	–	–	3	4
Substitution of a bounded Path by an unbounded one	–	–	–	1

8. See Lewandowski and Mateu (2014) for a detailed analysis of the so-called unselected objects prefixed with *prze-* 'through-' as in *przebijając się* 'breaking through'.

To sum up, German uses a broader repertoire of linguistic devices for encoding Path than Polish. These devices show different grades of morpho-syntactic association with the verb stem, but they do not vary in terms of telicity, thus giving rise to a rich inventory of morpho-syntactic structures capable of providing very dynamic and vivid Path descriptions. In contrast, Polish prefixes differ from other directional elements such as PPs, adverbial phrases and nominals as for aspect, since only the former have the ability to make an event telic, thus forming a more lexicalized unit with the verb stem than e.g. the German (and English) verb particles. As a consequence, the Polish translations of *The Hobbit* provide more monotonous (both morpho-syntactically and semantically) Path elaborations. For example, the only way of translating a bounded Path segment followed by a Ground is by employing the construction "prefix + PP", while German translators can choose between different options such as "PP", "PP + prepositional particle", "PP + double particle", etc. The aspectual contrasts between German and Polish Path elements are especially relevant in the case of complex Paths. Whereas German follows the English pattern consisting of gathering several Path segments around a single verb stem, in Polish each bounded Path segment typically corresponds to a separate prefixed verb. As mentioned above, a similar translation strategy is systematically used in verb-framed languages with the difference that Path verbs instead of prefixed Manner verbs are employed.

4. Conclusions

In this chapter, we examined the expression of motion in translations of Tolkien's *The Hobbit* (Chapter 6) into Polish and German within the framework of Talmy's (1991, 2000) typology of macro-events and Slobin's (1991, 1996) "Thinking for speaking" hypothesis. The Spanish version has also been taken into account as a reference point of a verb-framed translation. We observed that despite the fact that English, German and Polish are all satellite-framed they differ with regard to the diversity of Manner and Path elaborations.

Basically, as far as Manner is concerned, German uses a similar amount of Manner verbs as English in terms of type and token frequency, while Polish approaches in this respect the Spanish translation, although notable differences between the two Polish translations have been found. These contrasts are not related to the availability of Manner verbs in the lexicon (cf. Kopecka, 2010), since there does exist at least an approximate equivalent of each motion verb used in the passages of *The Hobbit* analyzed here both in German and Polish. Rather, the reason involved in this intra-typological divergence is the ability of Manner verbs to combine with Paths and, in particular, Polish prefixes and PPs show more restricted compatibility with this kind of predicates than German and

English particles, which seem to be morpho-syntactically more flexible. As a consequence, Polish translators are obliged to resort to more frequently translation strategies such as use of a less specific Manner verb, additional specification of Manner in an adjunct or omission of the Manner information, which are also found in the Spanish translation.

German also provides more diversified Path descriptions, because it has a richer inventory of linguistic tools for encoding Path than Polish. They do not vary in terms of telicity, thus giving rise to many different morpho-syntactic constructions capable of providing very dynamic Path elaborations. By contrast, Polish prefixes differ from other directional elements such as for example PPs as for aspect in the sense that only prefixes can make an event telic, for example their use is obligatory when the motion event is temporally bounded. Consistently, whereas German follows the English pattern when multiple Paths are dealt with, in Polish, as in Spanish, each bounded Path segment typically corresponds to a separate verb.

In sum, the use of translations provides a particularly interesting testing ground of the semantic, morphological and syntactic capacities of a language. What can be observed is that even in the process of adapting a target text to a source text from the same typological group the language-internal factors considerably determine the rhetorical style, thus allowing (as in German) or limiting (as in Polish) a vivid and dynamic expression of Path and Manner.

Needless to say, more empirical studies are needed in order to further contribute to the research on intra-typological variation in the domain of motion, including not only intransitive, but also caused-motion events, which have not been taken into consideration in our investigation. Moreover, future investigations should also focus on the principles (lexical, morpho-syntactic, typological, etc.) governing the combinability of Manner verbs with Path expressions, which have not been systematically analyzed in this chapter.

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Appendix 1. Intransitively used manner of motion verbs found in the passages of *The Hobbit* and their translations into German, Polish and Spanish

English: *wander*, *creep*, *wind*, *dash*, *roll* (2), *clatter*, *crash*, *slide* (2), *slip*, *swing*, *limp*, *push*, *march*, *climb*, *scramble*, *trot*, *ran*, *flee*

German 1: *marschieren* 'march, wander', *kriechen* 'creep, crawl', *sich schlängeln* 'wind, meander', *preschen* 'dash', *rollen* 'roll', *krachen* 'crash' (2), *rutschen* 'slip, slide' (2), *schlittern* 'slide, slip', *schwingen* 'swing, wave', *humpeln* 'limp', *wandern* 'hike, wander', *klettern* 'climb', *jagen* 'race, tear', *sich wälzen* 'roll', *umherrasen* 'run around', *fliehen* 'flee', *laufen* 'run'

German 2: *gehen* 'walk', *kriechen* 'creep, crawl', *sich schlängeln* 'wind, meander', *stürmen* 'storm', *rollen* 'roll', *poltern* 'crash, stump', *krachen* 'crash', *rutschen* 'slip, slide' (2), *rattern* 'rattle along', *klettern* 'climb', *humpeln* 'limp', *pflügen* 'plough', *schreiten* 'stride', *krabbeln* 'crawl', *treten* 'step', *traben* 'trot', *sich kugeln* 'roll', *umherrennen* 'run around', *fliehen* 'flee', *laufen* 'run'

Polish 1: *wędrować* 'wander, hike', *iść* 'walk' (3), *skradać się* 'sneak', *biec* 'run' (2), *przebijać się* 'break through', *toczyć się* 'roll', *sunąć* 'glide, slide' (3), *jechać* 'drive', *sypać się* 'fall apart (lit.

pour REFL)', łazić 'wander, step' (2), *przedzierać się* 'plough, scramble', *maszerować* 'march', *skoczyć* 'jump', *wpaść* 'run, plunge (into)', *tarzać się* 'wallow, roll', *szamotać się* 'thrash around', *uciekać* 'flee'

Polish 2: *maszerować* 'march', *podkradać się* 'sneak up', *biec* 'run' (3), *przebijać się* 'break through', *gnać* 'rush, speed', *sypać się* 'fall apart (lit. pour REFL)', *ślizgać się* 'slide' (2), *wspiąć się* 'climb (to the top', *kuśtykać* 'limp', *mknąć* 'race', *sunąć* 'glide, slide', *wdrapać się* 'scramble up', *wpaść* 'run, plunge (into)', *tarzać się* 'wallow, roll'

Spanish: *caminar* 'walk', *arrastrarse* 'crawl', *serpentear* 'wind', *rodar* 'roll', *rebotar* 'bump', *atropellarse* 'rush', *deslizarse* 'slide, glide' (2), *balancearse* 'wobble', *cojear* 'limp', *marchar* 'march', *trepar* 'climb', *irrumpir* 'burst in', *revolcarse* 'roll around', *correr* 'run', *huir* 'flee'

Showing versus telling

Representing speech events in English and Spanish*

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In this chapter, I provide a qualitative description of the verbs used to introduce Direct Speech (DS) in fictional narratives written in English and their Spanish translations in order to compare the way these two languages reconstruct speech events in texts by means of both speech verbs (e.g., *say/decir*, *counter/argumentar*, *declare/manifestar*) and non-speech verbs (e.g., *grin/sonreír, scowl/fruncir el ceño*). Using a corpus of popular fictional narrative genres and drawing upon typological research on motion after the work by Talmy (1985, 1988, 1991) and Slobin (1996a, 1996b, 2004, 2005, 2006), I look into the strategies used in English and Spanish for recreating speech events in order to explore whether the typological differences between these languages are replicated in the case of speech. The hypothesis is that, contrary to what happens with motion events, the differences between English and Spanish do not rest upon lexical availability but, rather, on the weight placed in different speech elements in agreement with two different agendas regarding speech events. While congruent with typological studies, this piece of research attempts to broaden their scope and explore a topic still underexplored.

Keywords: quotative constructions, verb-framed languages, satellite-framed languages, Spanish, English, typology, speech events

1. Introduction

English and Spanish are seen as typological opposites by research after the work of Talmy (1985, 1988, 1991) and Slobin (1996a, 1996b, 2004, 2006). The main parameter underlying their differences concerns the ways in which each language expresses the trajectory or path of movement, that is, whether this is lexicalized in

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a satellite of the main verb or in the verb itself. In *satellite-framed* languages like English, verbs typically encode information concerning Manner, Cause, etc. and express Path of motion outside the verbs, that is, in the satellites (e.g., The drunk man tottered out of the bar). In contrast, in *verb-framed languages* such as Spanish, verbs usually convey Trajectory or Path and additional information is expressed by post-verbal complements (e.g., El borracho salió del bar tambaleándose).

The differences between satellite- and verb-framed languages are also found in the expression of other human experiences, as shown in the following English examples and their Spanish translations:[1]

(1) a. "Right you are, sir!" Merry beamed up at him. "I was just about to say as how the invitations is all for you, sir."
b. – ¡Eso es, señor! – dijo Merry sonriéndole – . Iba a decirle que esas invitaciones son todas para usted, señor.
('said Merry smiling at him')

(2) a. "Isn't that what I just suggested?" he drawled.
b. – ¿Y no es eso lo que acabo de sugerir? – dijo arrastrando las sílabas.
('said dragging the syllables')

(3) a. "Would you like his entire lineage, or should I get to the point?" I glowered at him.
b. – ¿Quieres que te recite todo el linaje o puedo ir al grano? – pregunté mirándolo a los ojos.
('I asked looking at his eyes')

The English verbs conflate the actions of smiling, saying and looking and the manner in which these were performed – which, in the case of *beam* and *glower* also includes the agents' emotional states. In contrast, the main verbs in Spanish lexicalize the basic meaning of such English verbs (*sonreír*, *decir*, and *mirar*) and express Manner in adjuncts (*arrastrando las sílabas* – 'dragging the syllables' – and *a los ojos* – 'at the eyes, fixedly'), yet 'lose' the attitudinal information implicit in *beam* and *glower*.

Interestingly, the passages also illustrate the reporting use of non-speech verbs in fictional narratives (see also the discussion in Lehrer, 1988; Ware, 1993; Caldas-Coulthard, 1994; Martínez Vázquez, 2005). This use is foregrounded in the Spanish versions, which usually incorporate speech-proper verbs such as *decir* ('say') or *preguntar* ('ask') in the constructions, and turn the original English verbs into adjuncts conveying the gestural and physical-auditory traits of the

1. The examples belong to the corpora used in the present research (see Appendix 1 for the text sources). In order to save space, glosses will only include the literal translation of the constructions under analysis whenever these are not provided in the discussion.

interaction. This is the case of *shrug* in Example (4), which despite being a non-speech verb plays a clear quotative role:

(4) a. "I thought I'd play the dutiful mentor today," he shrugged.
b. – He pensado que hoy podría hacer de mentor consciente de sus deberes – dijo encogiéndose de hombros – .

The way the information expressed in the English verbs is unpacked and verbalized in Spanish is congruent with the expression of motion events in this language and, therefore, adds up to the typological differences between English and Spanish discussed in the literature. However, the use of *preguntar* ('ask') instead of the all-purpose verb *decir* ('say') in (3b) points to another recurrent strategy followed by Spanish translators, namely the substitution of the original English verbs for more specific, nuanced verbs. This is shown in Examples (5) and (6):

(5) a. "There's a verb for you," Rhyme said.
"We weren't partners," Sellitto said. "I was Homicide, he was head of IRD."
"Yeah," Rhyme said, looking out the window […]. "The two musketeers."
In a patient voice, which infuriated Rhyme, Sellitto said, "Seven years, off and on, we worked together."
"And good years they were," Rhyme intoned.
b. – Menuda preguntita… – comentó Rhyme.
– No fuimos compañeros – dijo Sellitto – . Yo estaba en Homicidios y él era el jefe de la IRD.
– ¡Sí! – exclamó Rhyme mirando por la ventana […]. Los dos mosqueteros.
Con un tono de paciencia que enfureció a Rhyme, Sellitto explicó:
– Trabajamos juntos siete años, aunque intermitentemente.
– Y qué buenos años fueron – añadió Rhyme con retintín.

(6) a. "I'd suggest you do it immediately," Sachs barked.
b. – Le aconsejo que haga lo que le digo inmediatamente – le conminó Sachs en tono violento.

Against the repeated use of *say* in the English original, in Spanish we find the verbs *comentar* (here 'remark'), *exclamar* ('exclaim') and *explicar* ('explain'), which point to the pragmatic force of the utterance (and, in the case of *comentar* and *exclamar*, also to the speakers' attitude towards what is being said). This is also the case with the translation of *intone* as "añadir con retintín" ('add smugly, sarcastically'), which not only signals the turn-taking role of Rhyme's last intervention explicitly, but leaves no doubt as to his attitude – absent in the verb *intone*, which means utter in a monotonous or repetitive tone rather than in a sarcastic way. In turn, "conminó en tono violento" ('admonish/warn in a violent tone') in

(6b) 'unpacks' the meaning potential of *bark* by expressing the unfriendliness of barking at someone in the adjunct and explicating its pragmatic role in the main verb. Since both *intone* and *bark* exist in Spanish (*entonar/recitar* and *ladrar*), their substitution for *añadir* and *conminar* appears to be a conscious rhetorical choice, rather than a strategy compensating for the lack of lexical resources.

In this chapter, I explore the rhetorical differences between Spanish and English in reporting Direct Speech (DS) by focusing on the verbs – both speech and non-speech – used to introduce the speakers' words found in a corpus of twelve fictional texts originally written in English and their corresponding translations into Spanish (see Appendix 1 for the text sources). Drawing upon typological research on motion, the questions I address are (a) How do English and Spanish reconstruct speech events by means of the verbs – both speech and non-speech – used to introduce DS? and (b) Do these verbs conform with the descriptions of Spanish and English as typological opposites in the literature?

The chapter is organized as follows: after a brief survey of approaches to verbs used in reported speech, I describe the way both speech and non-speech verbs are used in my English and Spanish corpora. This is followed by a discussion on the ways each language reconstructs speech interactions through such verbs.

2. Reporting speech events

Research into the textual representation of speech events cuts across such different disciplines as stylistics, conversation analysis, sociolinguistics, syntax or pragmatics and, therefore, illustrates different agendas and methodologies. The substantial literature on the topic may be described as falling into two broad groups. The first of these focuses on the strategies people use to reproduce speech in discourse contexts, and covers research into the various ways of representing speech and thought (i.e., direct, indirect or 'mixed' versions) and the formal and functional properties of such representations in textual dialogues (e.g., Coulmas, 1986; Verschueren, 1987; Maldonado, 1991; Lucy, 1993; Thompson, 1996; Collins, 2001; Güldemann & von Roncador, 2002; Holt & Clift, 2007; Buchstaller & van Alphen, 2012; among many others). A second line of research has narrowed the focus to look into the lexico-semantic properties of the verbs involved in quoting clauses. This is the starting point in (i) cognitive studies that discuss the figurative motivation of some such verbs (Goossens, 1990; Kissine, 2010; Rudzka-Ostyn, 1988) or explain them in terms of semantic prototypes and categorization (Dirven, Goossens, Putseys, & Vorlat, 1982), (ii) research into the syntactic behaviour of the constructions with verbs of communication (De Roeck, 1994; Goldberg, 1995; Klamer, 2000; Levin, 1993; among others), and (iii) the compilation of annotated

lexical databases and dictionaries of verbs of communication (Faber & Mairal, 1999; Lehrer, 1988; Wierzbicka, 1987).

Both lines of research include studies which approach speech verbs and constructions from a typological and/or contrastive perspective, and compare either typologically similar languages such as African languages (Güldemann, 2008) and English and German (Dirven, 1990; Snell-Hornby, 1983) or such different languages as Italian and English (Mastrofini, 2013) and English and Spanish (Contreras, 1988; Faber & Sánchez, 1990; Suñer, 2000; Rojo & Valenzuela, 2001; Martínez Vázquez, 2005). The main point of contention in the research comparing the latter is the way each language uses manner-of-speaking verbs, which has yielded contradictory results. Thus, Faber and Sánchez (1990) and Martínez Vázquez (2005) have stressed the lexical and rhetorical differences between English and Spanish – therefore supporting their characterization as typological opposites. Martínez Vázquez (2005) also pays attention to the different use of non-speech verbs in both languages (e.g., discharge verbs such as *cough*/*toser*, or gesture verbs such as *nod*/*cabecear*, *smile*/*sonreír*) claiming that, although syntactically possible in Spanish, their use is outnumbered by constructions combining two verbs (*mover la cabeza* + *asentir* vs. *shake one's head*) or a verb plus an adverbial (*decir estridentemente* vs. *shriek*). As a result, English displays a highly descriptive and synthetic rhetorical style against the longer and more analytic style characterizing Spanish.

In contrast, Contreras (1988) and Rojo and Valenzuela (2001) downplay the lexical differences between English and Spanish, and offer a more pragmatic account of the differences between English and Spanish. Using a corpus of written English dialogues and their translations into Spanish, Contreras (1988) shows that the Spanish texts are both quantitatively and qualitatively richer in speech verbs than the English originals (635 Spanish types versus 215 English types). A similar picture is offered in Rojo and Valenzuela's (2001) study on the use of manner-of-speaking verbs in four English novels and their Spanish translations. These scholars found 56 different verbs in Spanish versus the 46 found in the English corpus. Here also the Spanish translators often used what Rojo and Valenzuela call *specific verbs* (e.g., *aconsejar* 'advise', *explicar* 'explain', *precisar* 'specify', etc.) instead of English *say* or *tell*. By so doing, Spanish translators add more information to the scene portrayed by the original English verbs, most conspicuously, the pragmatic force of the verbal interaction.

These two positions, however, are not irreconcilable, but may be seen as two sides of the same coin: Spanish and English are, indeed, typologically different (as attested by motion research, and further discussed in this chapter); yet, their differences with regard to the use of verbs of communication (VoCs) do not rest upon lexical availability but on the weight placed in different speech elements in agreement with two different discourse agendas in the textual reconstruction

of speech events. This is the starting hypothesis in the present chapter, where I explore the constructions used to introduce Direct Speech in a three-million-word English and Spanish corpus illustrating four fictional narrative genres. The corpus and methodology are described in the following section.

3. Method and data

The data under analysis comes from two corpora: a corpus of twelve fiction narratives written in English and representative of such popular genres as romance, thriller, fantasy and steampunk (1,585,120 words in total), and a corpus with their Spanish translations (1,713,968 words).[2] I chose these texts because of (a) the high occurrence of dialogues and the variety of quotative constructions in them, and (b) the expectation that their authors would go for a dynamic, down-to-earth style in contrast to the more sophisticated, high-brow, and less dialogic quality of literary texts regarded as canonical. As to the use of translations, although translators must be as faithful to the originals as possible, they also need to comply with the conventions of the target language, i.e., are also free to reconstruct the texts as they deem fit. Indeed, as discussed in cross-linguistic typological research on motion (Slobin, 1996b, 2004, 2006; Ibarretxe-Antuñano, 2003; Filipović, 2007, 2008), translators always adapt the original texts to the rhetorical conventions of the target language in a way that feels natural to their intended readers and, hence, are fully representative of their possibilities and conventions (see also the discussion in Ibarretxe-Antuñano & Filipović, 2013).[3]

The analysis started by comparing the original English texts and their corresponding translations in order to find the quoting constructions used in each. These typically consist of a quoting clause with the verb used to introduce the speaker's utterance and the quoted clause, which are differentiated by various typographical devices. In English verbs may appear before, between, or after the quoted clause and are separated by various punctuation marks (e.g., commas, dashes, colons, periods, or nothing if they occur immediately after the quote). In Spanish, Direct Speech occurs within dashes and, while the introductory patterns may also occur in the three positions described above, the customary punctuation device is the colon when verbs occur before the quote. Finally, in Spanish it is also frequent to find instances where verbs appear in a separate line. However, these

2. Although the number of words is slightly different, the normalization of quantitative data was not regarded as necessary given the fact that they belong to translations rather to original works.

3. See also Even-Zohar (2000) for a discussion on the equal status – both in linguistic and reader-processing terms – of original and translated works.

were not included in the analysis since it was often unclear whether they were used to describe the scene or characters' reactions (albeit before speaking) or to introduce their words.

The next step consisted in classifying the predicates in the quoting clauses found in each corpus. I first took into account whether the verbs were speech verbs or not and, in the second place, the type of information they conveyed (for a detailed explanation, see Caballero, 2015). In the case of the speech verbs, I paid attention to whether they were *mainly* concerned with expressing the illocutionary force of the fictional speakers' utterances, manner, or the turns in the fictional dialogue. The non-speech verbs were classified by considering whether they conveyed gestures (facial, bodily, or deictic) or the speakers' physical or emotional states and actions. In the non-speech group I also considered those verbs from domains other than speech (e.g., motion, cognition, etc.).[4] This is shown in Table 1.

However, classifying the verbs used to report speech is far from easy, as implied by the way some verbs appear in dictionaries (e.g., the gestural verb *yawn* appears as 'to say with a yawn' in http://www.wordreference.com/), the various taxonomies in the literature or discussions on what counts as, for instance, a manner verb such as *shout* against similarly-used verbs like sound verbs such as *boom* (see the discussion in Urban & Ruppenhofer, 2001). Indeed, all the verbs used to introduce the speakers' words in dialogues play a turn-taking role and, of course, carry, by default, illocutionary and deictic information regardless of whether they belong to the speech group or otherwise. Consider Example (7):

(7) Baldwin paced nervously around his prior, Felix, who was seated on a chair with a horsehair cushion. Ordinarily this would have been a comfortable setting – the abbot's private receiving room, a nice radiating fire, a chalice of wine on a soft chair – but Felix was certainly not comfortable. Baldwin was flitting about like a fly in a hot room, and his anxiety was contagious. [Description of Baldwin]
"I have prayed for answers, yet I have none," Baldwin pouted. "Can you not shed light on this dark matter?"
"I cannot, Father," Felix said in his thick-tongued Breton accent.

4. Although some turn-taking verbs like *start* or *go on* were originally motion verbs and are still used as such in some contexts, this motion sense has become very much grammaticalized. Indeed, the verbs express a continuation and inchoative meaning respectively and, therefore, often occur with other action verbs that may or may not be present in the construction (e.g., go on/start speaking or, simply, go on/start). In contrast, a verb like *backtrack* is a motion verb, and cannot be used in combination with other action. Accordingly, the former two verbs have not been considered as motion verbs proper, and the latter has been classified in the motion group in Table 1. See also semantic databases like WordNet (wordnetweb.princeton.edu) and Memidex (www.memidex.com) in this respect.

Table 1. Types of verb in the corpora

SPEECH VERBS
Illocutionary force
– Assertive (*acknowledge*, *reconocer*)
– Directive (*beg*, *suplicar*)
– Expressive (*thank*, *agradecer*)
– Commissive (*promise*, *prometer*)
– Declarative (*toast*, *brindar*)
Manner
– Human (*stammer*, *tartamudear*)
– Animal (*purr*, *ronronear*)
– Inanimate (*crackle*, *chasquear*)
Turn-taking
– Directionality (*address*, *dirigirse*)
– Beginning/end of turns (*start*, *empezar*)
– Maintaining flow of interaction (*go on*, *continuar*)
– Turn overlapping (*interrupt*, *interrumpir*)
NON-SPEECH VERBS
Gestures
– Facial (*frown*, *fruncir el ceño*)
– Bodily (*shrug*, *encogerse de hombros*)
– Deixis (*point to*, *gesture*, *señalar*)
Physical action/reaction
– Physical action (*clear throat*, *carraspear*)
– Physical reaction (*blush*, *ruborizarse*)
Other
– Motion (*backtrack*, *saltar*)
– Cognition (*consider*, *razonar*)
– Emotion (*blaze*, *estallar*)

The verb *pout* conveys both a gesture and the displeasure thus expressed. This information cues readers towards interpreting Baldwin's reported utterance as an expressive act (i.e., his discontent with a given state of affairs) rather than, for instance, an assertion. Since his words open the dialogue in the scene, *pout* may also be regarded as playing a turn-taking role (here, the start of Baldwin's turn of speech), even if this is less evident or marked than the one fulfilled by verbs such as *start* or *begin*. A similar situation may be found in the case of verbs such as *pontificate* or *declare*, which blend both pragmatic force (usually, assertiveness) and manner (pompousness and/or dogmatism and emphasis respectively).

In this regard, the classification of the verbs in the corpus reflects general tendencies rather than clear-cut semantic and/or pragmatic distinctions, and was adopted for the sake of exploring the differences between English and Spanish.

4. Results

The English corpus yielded 22,037 instances (*tokens*) of quotative predicates illustrating 460 types among which 273 are speech verbs (59.3% of the corpus) and 187 are not related to speech (40.7% of the corpus). The Spanish corpus yielded 18,147 instances illustrating 357 types among which 271 are related to speech (76%) and 86 are non-speech verbs (24%).[5] A sample of the verbs found in each corpus is shown in Appendix 2,[6] and their distribution across English and Spanish is shown in Figure 1.

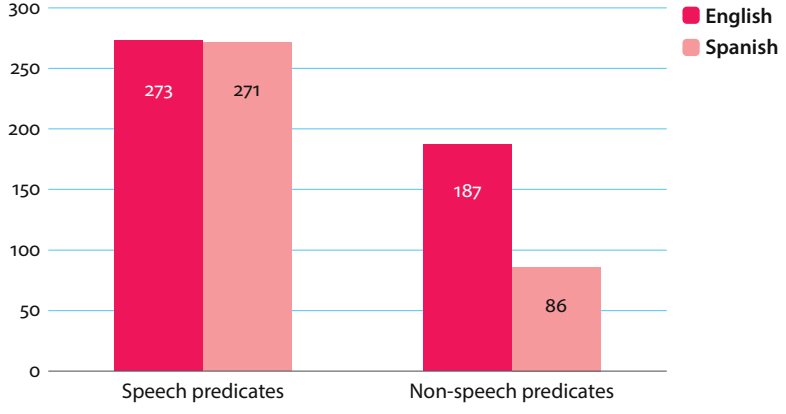

Figure 1. Types of quotative predicates in English and Spanish

Raw numbers suggest that the main difference between English and Spanish concerns their use of non-speech predicates. However, zooming in on each predicate set reveals further differences, particularly if we pay attention to speech predicates (Figure 2).

The situation shown in Figure 2 appears to confirm the differences between English and Spanish described by motion scholars. Thus, while the English data show a balance between illocutionary and manner verbs – suggesting that both are equally important for representing speech events, the illocutionary predicates in the Spanish corpus clearly outnumber manner verbs. The lower concern with manner in this language is further suggested by comparing the types and tokens of non-speech constructions in the corpus data. This is shown in Figure 3.

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5. The present study offers a qualitative rather than quantitative study on the verbs used in English and Spanish to introduce DS since, as argued throughout the chapter, their differences appear to be qualitative. Accordingly, only raw numbers are shown in order to back up the discussion.

6. A complete list showing the verbs found in the corpora is missing due to space constraints. For those interested, see Caballero (2015).

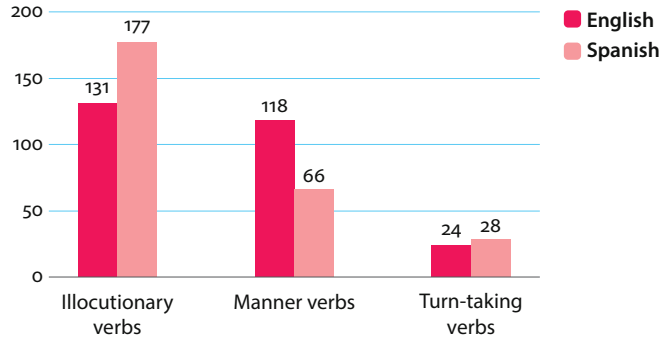

Figure 2. Types of speech predicates in English and Spanish

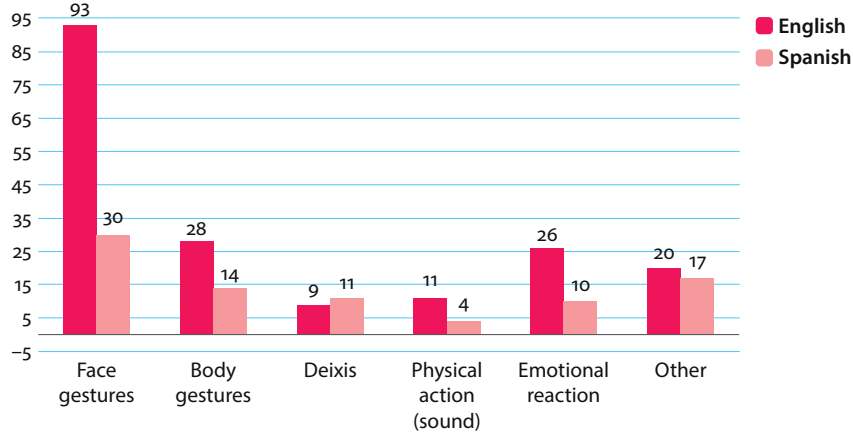

Figure 3. Types of non-speech predicates in English and Spanish

However, numbers may be misleading and must be used with caution. Indeed, a closer look at the distribution of verb types in the speech and non-speech sets does not reveal substantial differences between English and Spanish. This is particularly evident in the case of the verbs concerned with expressing such critical information as illocutionary force and manner, that is, the why and how of speech interaction. Concerning the former, both languages follow a similar pattern: assertive verbs represent the largest number of occurrences, followed by directive, expressive, commissive and declarative verbs, and barring *say* and *tell*, the predicate types thus concerned are practically the same. This is also the case when illocutionary force is expressed by means of manner verbs: the preferred verbs in both languages are those concerned with +/−sound – the exceptions being *sigh* and *laugh* which, although frequently used as quotatives in English, are

less common in Spanish. The most frequent verbs in each language are shown in Table 2 (with the number of tokens shown within parentheses).

Table 2. Occurrences of illocutionary and manner predicates in English and Spanish

ILLOCUTIONARY
Assertive
English: *reply* (260), *answer* (188), *explain* (147), *admit* (88), *observe* (51)
Spanish: *contestar* 'answer' (596), *responder* 'answer' (565), *replicar* 'answer, reply' (365), *reponer* 'answer, reply' (210), *comentar* 'remark, point out' (286), *explicar* 'explain' (269), *asegurar* 'assure' (184)
Directive
English: *ask* (1,687), *demand* (142), *suggest* (81)
Spanish: *preguntar* 'ask' (2,167), *inquirir* 'ask' (128), *sugerir* 'suggest' (97)
Expressive
English: *protest* (62)
Spanish: *protestar* 'protest' (115)
MANNER + ILLOCUTIONARY FORCE
Assertive
English: *whisper* (175), *sigh* (165), *laugh* (149), *murmur* (113), *mutter* (112)
Spanish: *murmurar* 'murmur, whisper' (205), *susurrar* 'whisper' (190), *musitar* 'whisper' (53)
Directive
English: *call* (147), *shout* (70), *whisper* (60)
Spanish: *gritar* 'shout' (212), *exclamar* 'exclaim' (93), *susurrar* 'whisper' (77), *llamar* 'call' (47)
Expressive
English: *exclaim* (52)
Spanish: *exclamar* 'exclaim' (361), *gritar* 'shout' (77)

The situation concerning turn-taking verbs and non-speech verbs is fairly similar. The largest number in the former is due to verbs marking the overlapping of turns (*interrupt/interrumpir*, *cut in/atajar*), followed by verbs indicating their beginning and end (*start/empezar*, *conclude/concluir*) and verbs related to the flow of the conversation, e.g., *continue/continuar* or *carry on/seguir*. Some of the constructions are illustrated below.

(8) a. "He has left for Africa, Miss Bede," Evelyn cut in gently. "This past Friday."
b. – Se ha marchado a África, señorita Bede – le cortó Evelyn con suavidad – . El viernes pasado.

(9) a. "Then there is little point in waiting to see if she will come to us," Lorlen concluded.
b. – Entonces no tiene sentido esperar a que acuda a nosotros – zanjó Lorlen – .

(10) a. "And we both know why," David went on.
b. – Y los dos sabemos por qué – continuó David.

As to the non-speech group, the largest set in both languages expresses facial gestures, particularly those involving the eyes (*roll one's eyes/poner los ojos en blanco*), mouth (combinations with *grin/mueca*) and eyebrows (*frown/fruncir el ceño*). These are followed by predicates that refer to bodily gestures (*nod/inclinar la cabeza*, *shrug/encogerse de hombros*), emotional states (*blush*/*enrojecer*, *explode*/*explotar*, *startle*/*sobresaltarse*), and those concerned with fulfilling a spatio-temporal – as opposed to attitudinal – deictic role in the texts (*nod*, *gesture/hacer un gesto*, *point*/*apuntar*). The following passages illustrate some of these verbs:

(11) a. "Historically," he grinned, "Astound me with your grasp of historical minutiae, E'lir."
b. – Históricamente. – Ben sonrió – . Sorpréndeme con tus conocimientos de nimiedades históricas, E'lir.
('"Historically," Ben smiled')

(12) a. "No, I suppose not." Alek shrugged again. "She's not a soldier, after all"
b. – No, supongo que no – Alek se encogió de hombros otra vez – . Al fin y al cabo no es un soldado.

(13) a. "But this, now" – she gestured at the curve of the terrace – "this is intimate dinner parties after work with wine and just the right gourmet goodies from Fortnum's."
b. – Pero esto, ahora – apuntó a la curva de casas adosadas – , esto son cenas íntimas después del trabajo con vino y comida gourmet de Fortnum's.
('"But this, now" – pointed to the curve of the row houses')

The main difference between the way English and Spanish use non-speech predicates involves emotion and cognition verbs – included in the 'Other' sub-group in Tables 1 and 2. Thus, the former is the largest set in English with 8 types (*blaze*, *explode*, *fret*, *fume*, *rage*, *seethe*, *startle*, and *sulk*) and 19 tokens. In turn, the largest set in Spanish (8 types and 32 tokens) concerns cognition verbs such as *calcular* 'reckon', *comprender* 'understand', *conjeturar* 'speculate', *deducir* 'deduce', *especular* 'speculate', *considerar* 'consider', or *decidir* 'decide' (the latter two being the only ones found in the English corpus). The way these verbs are used in each corpus sheds interesting light into the workings in each language. Before taking this point further, consider Examples (14)–(17):

(14) a. "That son of a bitch called my daughter?" he seethed.
b. – ¿Que ese hijo de puta ha llamado a mi hija? – Estaba furioso.
('He was furious')

(15) a. "No!" I sulked, rubbing my temples.
b. – ¡No! – Me froté las sienes, enfurruñado.
('I rubbed my temples, crossed/sulking')

(16) a. "Roads must be getting better," Shep said into his drink.
b. – Debe de ser que los caminos están mejor – especuló Shep mirando su bebida.
('speculated Shep [while] looking down his drink')

(17) a. "So it isn't sand," Rhyme muttered. "It's something ground up….
b. – Así que no es arena – dedujo Rhyme – . Debe de ser entonces algo más básico…
('Rhyme deduced – . Then it must be something more basic…')

By using *seethe* and *sulk* to introduce DS, English presents these emotional states as happening *while* speaking, that is, as dynamic processes rather than states. In Spanish, dynamic processes involving emotions are lexicalized by means of pronominal verbs, which correspond to the English construction become/get + adjective (e.g., *enfadarse* 'become angry'), and are seldom used as VoCs. Thus, as shown in (14b) and (15b), the Spanish translators have opted for omitting the quotative predicate and expressing the final state rather than the process. The situation is reversed with regard to cognition verbs: the Spanish verbs *especular* and *deducir* above combine the actions of thinking and speaking, presenting the former as a dynamic, 'loud' process and, at the same time, explicating the participants' intellectual attitude to what is being said regardless of whether this may be inferred from the context (e.g., the epistemic, speculative role of *debe de ser* 'must be'). In contrast, English is more concerned with what is said and, when deemed necessary, how it was said ("muttered" in (17a)), and allows more room for interpreting the speakers' stance and/or intention by cuing, rather than explicating it. To put it differently, the different use of verbs in quotative constructions reveals differences in the allocation of focus between English and Spanish and, therefore, in the way each language recreates verbal events in textual form.

5. Two ways of cueing speakers' intentions and actions

The brief overview of corpus data in Section 4 suggests that the differences between English and Spanish with regard to their use of quotative predicates cannot be solely explained in quantitative terms. On the one hand, the English and Spanish corpora yield similar total numbers of types and tokens, and the distribution tendencies in the largest groups follow similar patterns. On the other, and most interestingly, most of the verbs found in the English corpus have a direct

equivalent in Spanish and vice versa – regardless of whether they fall in the illocutionary, manner, or non-speech groups.

A different question is whether the verbs at the disposal of English authors and Spanish translators are used or not. For instance, the 10,790 instances of *say* in English appear as *decir* only 5,873 times in Spanish. Instead, the translators chose specific verbs such as *apuntar*, *brindar*, *comentar*, *exponer*, *indicar*, *manifestar*, *observar*, *ofrecer*, or *opinar* – all of them meaning *utter* or *say* plus something else. Of course, such alternatives to *say* also exist in English, often in the form of Latinate predicates (e.g., *offer*, *mention*, *proclaim*, *opine*, etc.); yet, corpus data suggest that they are not the preferred option. Likewise, the preference of English towards verbs concerned with expressing the manner of verbal interactions (e.g., by means of manner-of-speaking verbs, sound verbs such as *pant*, *sigh*, *sniff*, or *snort* and gestural verbs) does not mean that Spanish lacks these verbs and/or does not use them in quoting clauses (see, for instance, Examples (11b)–(13b)). Rather, the differences between English and Spanish are discursive, that is, rest upon two different ways of setting speech scenes and the elements foregrounded or backgrounded in each language. Before taking this point further, consider the following passages from the corpus (the turns of speech have been numbered to help the discussion):

1. It was a minute and a half by Liza's watch before the bullet-head tapped her on the shoulder. "Excuse me," he said, "but I believe you were staring at me."	1. En el reloj de Liza había pasado un minuto y medio cuando el pelao le tocó en el hombro. – Perdona, me ha dado la impresión de que me estabas mirando.
2. Liza blinked at him. "That was disbelief. I couldn't believe you were so slow."	2. – Lo hacía por incredulidad. No podía creerme que fueras tan lento – contestó parpadeando.
3. "Slow?" He looked insulted. "Nobody could have gotten through that crowd faster than me. I didn't even have blockers."	3. – ¿Lento? – preguntó con cara de estar enfadado –. No creo que nadie pudiera atravesar toda esa gente más rápido que yo. Ni siquiera tenía tacos de salida.
4. Liza shook her head. "You spotted me a good hour ago. What did you do, sit down and think about it?"	4. – Hace una hora que me has visto. ¿Qué has estado haciendo, estar sentado y pensar en ello? – preguntó meneando la cabeza.
5. He rolled his eyes. "I heard redheads were hard to handle." He leaned on the bar. "I'm Tony. And you owe me."	5. – Había oído decir que las pelirrojas son difíciles de tratar – comentó poniendo cara de circunstancias y apoyándose en la barra –. Me llamo Tony y estás en deuda conmigo.
6. Okay, here we go, Liza thought, and leaned on the bar, too, mirroring him. "I owe you?"	6. – Ya estamos –, pensó Liza apoyándose también en la barra para ponerse frente a él. – ¿Estoy en deuda contigo?
7. "Yes." He grinned at her. "Because of chaos theory."	7. – Sí, según la teoría del caos.
8. Liza shook her head. "Chaos theory."	8. – La teoría del caos – repitió meneando la cabeza.

9. He moved closer to her. "Chaos theory says that complex dynamical systems […]"	9 – Una teoría que dice que los sistemas dinámicos complejos […].
10. Liza looked at him, incredulous. "This is your line?"	10. – ¿Eso es lo que utilizas para ligar? – preguntó incrédula.
11. "I am a complex dynamical system," Tony said.	11. – Soy un sistema dinámico complejo – aseguró Tony.

The English passage incorporates both VoCs and non-speech patterns to introduce the quotes in the dialogue; however, none of these are translated word-by-word in Spanish. Rather, this translator either omits some quote-introducing patterns (e.g., "'Excuse me,' he said" in 1; "'Yes.' He grinned at her" in 7) or follows the – predicable, typology-wise – pattern 'speech verb + adjunct' in those cases where a non-speech verb is used in English (e.g., *contestó parpadeando* 'answered [while] blinking' in 2; *preguntó meneando la cabeza* 'asked shaking the head' in 4; *repitió meneando la cabeza* 'repeated shaking the head' in 8). As noted earlier, what is interesting here is the Spanish preference towards verbs other than *say*/*decir* when translating quoting predicates. In such cases Spanish tends to use more specific, forceful verbs, e.g., "Tony said" in 11 appears as the more assertive and conclusive "aseguró Tony" ('Tony claimed/asseverated').

The data confirm the verb-framed quality of Spanish discussed in motion research, yet point to a more complex picture than the one described for that domain. Thus, the patterns found in the Spanish corpus illustrate a twofold concern: (a) the turn-taking aspect of the interaction thus introduced, cued by verbs such as *responder*, *contestar*, *añadir*, *replicar*, *intervenir*, *interrumpir*, or *convenir* (turns 2, 3, 4 and 10 in the passage above), and (b) the reasons motivating – and showing up – in the verbal exchange, illustrated in such verbs as *explicar*, *asegurar*, *pedir*, *ordenar*, *anunciar*, *convenir*, *aclarar*, *precisar*, *proponer*, and the like. Both concerns are further exemplified in the following passage:

(18) a. "Just use a drab," Jake said. "That's good iron."
"I don't want good iron," the innkeeper said. […]
"He's right," the smith's prentice said. "Except it's not carbon […]"

b. – Hazlo con un drabín – propuso Jake – . Son de hierro del bueno.
– No quiero hierro del bueno – replicó el posadero – . […]
– Tiene razón – terció el aprendiz de herrero – . Pero no es carbono. […]

Here the translator has opted for avoiding the repeated use of *say* in the original, substituting it with the more specific Spanish verbs *proponer* ('suggest'), *replicar* ('reply') and *terciar* ('put in'). While keeping *what* is communicated intact, the translator's choice adds qualitative information about the *why* and *how* of this verbal exchange: on the one hand, *proponer* and *replicar* explicate the speakers'

intentions; on the other, *replicar* and *terciar* foreground the turn-taking quality of the dialogue.

Of these two core elements of speech events, Spanish appears to be particularly concerned with expressing, in unmistakable terms, the speakers' stance towards his/her words, that is, the pragmatic or illocutionary force of the quoted utterances and the speakers' online reasoning process (as cued by cognition verbs). This concern is more noticeable in those cases where the English quotative constructions involve sound and gesture verbs. This was briefly introduced earlier when discussing Examples (5) and (6), and is further illustrated in the following passages:

(19) a. Min exhaled in relief. "You had me worried."
b. – Me tenías preocupada – confesó Min suspirando aliviada.
('confessed Min sighing relieved')

(20) a. "Well," huffed Miss Tarabotti, "how was I supposed to know that?
b. – ¿Y cómo se supone que iba a saber yo todo eso? – se quejó la señorita Tarabotti – .
('Miss Tarabotti complained')

(21) a. "Oh, for goodness' sake," tsked Miss Tarabotti, "do sit down."
b. – Oh, por el amor de Dios – se quejó la señorita Tarabotti – , haga el favor de sentarse.
('Miss Tarabotti complained')

(22) a. "The rules were – no learning and no hugging. I'll see you later, Nancy," he deadpanned.
b. – Las reglas eran: nada de aprendizaje y nada de abrazos. Hasta luego, Nancy – dijo con la mayor frialdad posible.
('he said with the most coldness possible' [as indifferently as possible])

(23) a. "But we'll find something. You bet we will." Suddenly Rhyme frowned. "The map! We need the map. Thom!"
b. Acabaremos encontrando algo, me apuesto lo que queráis. – De repente, se le ocurrió otra idea – . ¡El mapa! Necesitamos el mapa, Thom.
('Suddenly, another idea occurred to him')

(24) a. "Have you heard? They are making jewelry out of this fantastic new lightweight metal – allum-ninny-um or something. Of course, it is very dear at the moment, and Papa would not allow for the purchase of any." She pouted.
b. – ¿Sabías que hacen joyas con ese nuevo metal que apenas pesa? Alumninio o algo así. Claro que, por el momento, es muy caro y papá no nos permite comprarnos nada – se lamentó.
('she lamented/complained')

In these examples, English lexicalizes the sound and/or manner component of the act of saying (e.g., *exhale*, *huff*, *tsk*) and suggests the speakers' attitudes and/or emotions by means of gestural patterns (e.g., *deadpan*, *frown*, *pout*) which, may – or may not – help readers understand what is going on in the texts. For instance, the verbs *tsk* and *pout* may indicate diverse states and attitudes, not necessarily plaintiveness or complaint; *huff* means 'to breathe heavily', which may be caused by various motives; *frown* is often associated to dislike or displeasure, not to sudden thought; and *deadpan* expresses lack of expression, not necessarily a cold tone. When used to introduce DS, these verbs conflate the act of saying with those actions and gestures performed while speaking, providing readers with audio and visual cues for interpreting the interaction thus portrayed. Against the many possibilities afforded by these English verbs, Spanish leaves little to the imagination: sound and gestural verbs are often substituted with illocutionary verbs (e.g., *confesar* 'confess' *lamentarse* 'grumble' or *quejarse* 'complain') and cognition verbs or expressions thus related (e.g., *ocurrirse/tener una idea* 'come to mind'), all of which inform readers about what is going on beyond any doubt and, if needed, are complemented with manner, gestural and attitudinal information.

What do all these examples suggest about the rhetorical style of English and Spanish? The most conspicuous difference involves *how* each language represents speech events in textual form, i.e., the allocation of attention to the various elements conflating in them. Thus, English appears to pay attention to both the message and the contextual aspects of speech events. This reconstruction of the speech context is done through manner verbs and non-speech patterns, both of which are instrumental in "stage directing the reader to the action" (Caldas-Coulthard, 1994, p. 77). Given the conflation of so much information in a single expression, the resulting rhetorical style is highly compact, dialogical and/or fluid, with the quoted utterances occupying center stage.

In contrast, Spanish is most concerned with the pragmatic force motivating the speech interaction, expressing it in the main verb of the clause. Spanish verbs often explicate in unambiguous terms the speaker's intentions, hence guiding the audience's reading and interpretation process. Since conveying this information often requires several sentences, Spanish exhibits a more analytical and elaborate rhetorical style. In other words, illocutionary force is a given in Spanish since it is expressed in the main verb of the clause, and, hence, expected or backgrounded informatively speaking. In turn, contextual information about the scene, the participants' emotions and reactions, and other elements are foregrounded in Spanish by being placed outside the main verb – where those elements are highly elaborated. English is more balanced in this respect in that salience is more evenly distributed – even if the general 'feel' of the texts is that the contextual elements

are alloted more focus. Readers are provided with detailed information of the scene, and left free to interpret the reasons motivating the dialogues in the text. The differences between the two languages could, then, be summarized as showing (English) versus telling (Spanish), that is, while Spanish provides readers with a script, English offers the film.

6. Conclusions

In the present chapter I discussed the presence and function of the quotative constructions in English and Spanish in order to explore whether the typological differences between these two languages are sustained in the representation of speech events. While showing that these differences exist, my main argument is that they are not quantitative but qualitative, that is, rest in the way speech and non-speech verbs are used to introduce and reconstruct speech events rather than the availability of lexical resources in each language.

Thus, English has been characterized as visually-biased or filmic in that the main focus is placed on the message proper and the various physical-auditory, gestural and attitudinal elements involved in verbal interaction, that is, what Zwicky (1971) calls the physical traits of speech acts which, in turn, act as cues for the participants' emotive and attitudinal states. In contrast, Spanish is more concerned with elaborating the cognitive aspects underlying the speech event – whether these concern the pragmatic reasons motivating the participants' utterances or the reasoning processes behind their words. As a result, the texts are characterized by a more analytical and explanatory quality in that they explicitly guide the reading process by telling readers why something was said, the intention of the addresser and the reaction of the addressee.

The present discussion, however, is but a small study on a highly complex topic. Further research should, on the one hand, focus on original, rather than translated works and, on the other, explore whether the strategies here described are sustained across genres or, rather, are affected by the conventions of the specific narrative genres where they are used.

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Appendix 1. Text sources

Romance
- *My dearest enemy*. Author: Connie Brockway. *Del odio al amor*. Translator: María Aránzazu Sumalla de Benito.
- *Bet me*. Author: Jennifer Crusie. *Una apuesta peligrosa*. Translator: Enrique Alda Delgado.
- *Outlander*. Author: Diana Gabaldon. *Forastera*. Translator: Carmen Bordeu.

Fantasy
- *On the edge*. Author: Ilona Andrews (Ilona Andrews stands for the couple of authors Gordon and Ilona Andrews writing as a team). *El límite*. Translator: Daniel Aldea Rossell
- *The magicians' guild*. Author: Trudi Canavan. *El gremio de los magos*. Translator: Manuel Viciano Delibano.
- *The name of the wind*. Author: Patrick Rothfuss. *El nombre del viento*. Translator: Gemma Rovira.

Thriller
- *The bone collector*. Author: Jefffery Deaver. *El coleccionista de huesos*. Translator: Daniel Font).
- *Mourn not your dead*. Author: Deborah Crombie. *Nadie llora al muerto*. Translator: Rebeca Bouvier.
- *The library of the dead*. Author: Glenn Cooper. *La biblioteca de los muertos*. Translator: Sergio Lledó.

Steampunk
- *Soulless*. Author: Gail Carriger. *Sin alma*. Translator: Sheila Espinosa Arribas.
- *Clockwork angel.* Author: Cassandra Clare. *Ángel mecánico*. Translator: Patricia Nunes.
- *Leviathan*. Author: Scott Westerfeld. *Leviathan*. Translator: Raquel Solà.

Appendix 2. Speech and non-speech predicates in corpora

Speech predicates	Non-speech predicates
English	**English**
Illocutionary verbs (131 types / 15,090 tokens)	**Facial gestures (93 verb types / 1,713 tokens)**
Assertive (75 types / 9,823 tokens)	arch eyebrows, bare teeth, clench jaw, close eyes, cock eyebrows, contort face, draw together eyebrows, drop jaw, drop mouth frown, gape, gawp, glare, glower, grimace, leer, make a face, smile, smirk, tighten jaw/lips/mouth, tilt chin/eyebrow, twist mouth/lips/face, twitch mouth, waggle eyebrows, widen (eyes, grin, smile), wince, wink, wrinkle nose
accuse, acknowledge, admit, admonish, agree, allow, amend, amplify, announce, answer, argue, assert, assure, chide, claim, clarify, comment, concede, concur, confess, confide, confirm, contradict, correct, declare, decline, deny, elaborate, explain, inform, insist, mention, note, object, observe, offer, persist, point out, preempt, prompt, pronounce, reassure, relent, remark, remind, reply, report, respond, retort, return, say, scold, speak, state, subside, summarize, tell, temporize, translate, venture, volunteer	**Bodily gestures (28 types / 1,409 tokens)**
Directive (32 types / 4,351 tokens)	bob head, bow head, cock head, dip head, hunch shoulders, incline head, nod (+ head), puff chest/oneself up, roll head, sag (shoulders), shake head, shrug (+ shoulders), slump body/shoulders, square shoulders, straighten body/shoulders, stretch, tilt head, toss head, turn head, turn to sbody
advise, ask, beg, caution, challenge, command, counter, declare, demand, direct, encourage, guess, implore, inquire, insist, instruct, invite, mouth, offer, order, plead, press, prompt, query, quiz, say, suggest, tell, urge, venture, warn, wheedle	**Deictic gestures (9 types / 244 tokens)**
Expressive (18 types / 892 tokens)	gesture, indicate, jerk head towards, motion, nod, point, turn head/eyes to, wave
apologize, complain, compliment, greet, grieve, lament, needle, offer, protest, remonstrate, reproach, say, soothe, swear, taunt, tease, tell, vent	**Physical action/Sound (11 verb types / 185 tokens)**
Commissive (5 types / 22 tokens)	clear throat, exhale, grit teeth, heave a sigh, huff, puff, suck a gasp/breath/teeth, swallow, take breath
acquiesce, avow, cave, offer, promise	**Physical/Emotional reaction (26 verb types / 134 tokens)**
Declarative (1 types / 2 tokens)	blaze (eyes), blush, brighten (person/eyes), bristle, burn (eyes), darken (face/expression/eyes), flame, flare (person/eyes), flash (eyes), flicker (expression/eyes), flush, gleam (eyes), glint (eyes), glitter (eyes), glow (eyes), laugh (eyes), light up (eyes), mottle (face), pale, shine (eyes), shiver (jaw), shudder, sparkle (eyes), twinkle (eyes)
toast	**Motion (7 verb types / 9 tokens)**
Manner verbs (118 types / 2,370 tokens)	backtrack, drift off, fling out, get out, parry, rally, scramble
Human (87 types / 2,167 tokens)	**Emotion (8 verb types / 19 tokens)**
babble, blether, breathe, burst out, call, chuckle, cough, croon, cry, demur, drawl, enthuse, exclaim, exult, gasp, gibe, giggle, groan, grouse, grumble, guffaw, gush, hesitate, hiss, holler, intone, laugh, lisp, mewl, moan, mumble, murmur, mutter, pant, parrot, rasp, recite, scream, shout, shriek, sigh, simper, singsong, slur, snap (out), sneer, snicker, snigger, snort, snuffle, sob, splutter, sputter, stammer, stutter, titter, tut, wail, wheedle, wheeze, whimper, whisper, yell	blaze, explode, fret, fume, rage, seethe, startle, sulk

Speech predicates	Non-speech predicates
English	**English**
Animal (18 types / 156 tokens) bark, bellow, cackle, chirp, chirrup, coo, croak, crow, drone, growl, grunt, howl, purr, roar, squeal, snarl, squawk, yelp Inanimate (12 types / 47 tokens) boom, chime in, crackle, creak, grate out, grind out, grit, pipe up, rumble, screech, squeak, thunder Instrument (1 type / 1 token) radio **Turn-taking (24 types / 846 tokens)** add, address, begin, carry on, chip in, conclude, continue, contribute, end, fill in, finish, go on, inject, interject, interrupt, manage, proceed, put in, rejoin, resume, start, supplement, supply, try	**Cognition (2 verb types / 5 tokens)** consider, decide **Violence (1 verb type / 6 tokens)** bite out/off
Spanish	**Spanish**
Illocutionary verbs (177 types / 13,347 tokens) Assertive (104 types / 8,629 tokens) acceder, aceptar, aclarar, acordar, acusar, adivinar, admitir, aducir, afirmar, alegar, amonestar, anunciar, apuntar, apuntillar, argüir, argumentar, asegurar, asentir, aseverar, aventurar, ceder, clarificar, comentar, comunicar, conceder, concretar, confesar, confiar, confirmar, contar, contestar, contradecir, convenir, corregir(se), corroborar, decir, describir, detallar, detener, dictaminar, especificar, explicar(se), exponer, expresar, hablar, indicar, informar, insinuar, insistir, justificarse, manifestar, matizar, mentir, objetar, observar, ofrecer, opinar, permitirse, precisar, proferir, profetizar, pronunciar(se), puntualizar, razonar, reafirmarse, rebatir, rechazar, reconocer, recordar, recriminar, rectificar, refutar, regañar, rehusar, relatar, remarcar, reñir, repetir, replicar, reponer, reprender, reprochar, responder, resumir, retractarse, revelar, señalar Directive (42 types / 3,460 tokens) aconsejar, advertir, apremiar, articular, avisar, conminar, cuestionar, implorar, indagar, inquirir, instar, instruir, invitar, ordenar, pedir, preguntar, presionar, proponer, provocar, querer saber, reclamar, recomendar, replicar, rogar, sugerir, suplicar, urgir	**Facial gestures (30 verb types / 314 tokens)** abrir ojos, alzar cejas/mirada/ojos, apretar dientes, arquear cejas, arrugar la nariz, cerrar ojos, clavar la mirada/ojos, desviar la mirada, enarcar cejas, entornar ojos, entrecerrar ojos, estirar labios, fruncir el ceño/cejas/labios, hacer una mueca, levantar cejas/la mirada, morderse los labios, parpadear, poner ojos en blanco, sonreír, sostener la mirada, suavizar la expresión, volver la mirada **Bodily gestures (14 verb types / 142 tokens)** agachar la cabeza, alzar la barbilla / (alzar la barbilla/brazos), brazos, asentir con la cabeza, bajar el rostro, encoger hombros, inclinar la cabeza, ladear la cabeza, levantar hombros/cabeza, menear la cabeza, mover la cabeza, negar con la cabeza, sacudir la cabeza, volver el rostro **Deixis (11 verb types / 193 tokens)** apuntar con la cabeza, guiar, indicar, menear la cabeza (+ Adv/PP), mover la cabeza, señalar + PP **Physical action/Sound (4 verb types / 19 tokens)** aclararse la garganta, carraspear, sorberse la nariz, tragar saliva

Appendix 2. (*continued*)

Speech predicates	**Non-speech predicates**
Spanish	**Spanish**
Expressive (25 types / 1,211 tokens) agradecer, alabar, blasfemar, censurar, compadecerse, consolar, desahogarse, despedirse, disculparse, elogiar, excusar(se), felicitar, insultar, lamentar(se), maldecir, mofarse, protestar, quejarse Commissive (4 types / 44 tokens) amenazar, desafiar, ofrecer(se), prometer Declarative (2 types / 3 tokens) adjudicar, brindar **Manner verbs (66 types / 2,426 tokens)** Human (55 types / 865 tokens) balbucear, balbucir, canturrear, cecear, chillar, clamar, cuchichear, espetar, exclamar, fanfarronear, farfullar, gemir, gimotear, gritar, gruñir, increpar, jadear, llamar, llorar, mascullar, murmurar, musitar, refunfuñar, reír, resollar, resoplar, rezongar, rumiar, sisear, sollozar, soltar, suspirar, susurrar, tartamudear, titubear, vociferar Animal (9 types / 57 tokens) aullar, berrear, bramar, bufar, gorjear, graznar/emitir un graznido, ladrar, ronronear, rugir Inanimate (1 / 1) chasquear Instrument (1 type/ 1 token) Radiar **Turn-taking (28 types / 1,608 tokens)** acabar, adelantarse, agregar, anticiparse, añadir, aportar, atajar, comenzar, concluir, continuar, contraponer, cortar, dirigirse, empezar, finalizar, intentar, intercalar, interponer, interrumpir, intervenir, poner grano de arena, probar, prorrumpir, proseguir, seguir, terciar, terminar, zanjar	**Physical/Emotional reaction (10 verb types / 35 tokens)** arder ojos, brillar ojos, destellear ojos, ensombrecerse la expresión, estremecerse, iluminarse la cara/expresión/mirada/ojos, oscurecerse la expresión/ojos, relucir ojos, resplandecer ojos, ruborizarse **Cognition (8 verb types / 32 tokens)** calcular, cavilar, comprender, conjeturar, considerar, decidir, deducir, especular **Motion (3 verb types / 11 tokens)** atascarse, saltar, venirse abajo **Emotion (4 verb types / 18 tokens)** estallar, explotar, sobresaltarse, extrañarse **Violence (2 verb types / 2 tokens)** asestar golpe de gracia, contraatacar

Subject index

In recent years, Cognitive Linguistics (CL) has established itself not only as a solid theoretical approach but also as an important source from which different applications to other fields have emerged. In this volume we identify some of the current, most relevant topics in applied CL-oriented studies – analyses of figurative language (both metaphor and metonymy) in use, constructions and typology –, and present high-quality research papers that illustrate best practices in the research foci identified and their application to different fields including intercultural communication, the psychology of emotions, second and first language acquisition, discourse analysis and translation studies. It is also shown how different methodologies –the use of linguistic corpora, psycholinguistic experiments or discourse analytic procedures– can shed some light on the basic premises of CL as well as providing insights into how CL can be applied in real world contexts. Finally, all the studies included in the volume are based on empirical data and there are some analyses of languages other than English (Japanese, Russian, Spanish, Danish, German and Polish), thus overcoming the contentions that CL-theoretically-based research is often based on linguistic intuition and focused only on the English language.

We hope that the present volume will not only contribute to a better understanding of how CL can be applied but that it will also help to encourage, even further, more robust empirical research in this field.

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