Approaching motion in a second language: how bilinguals restructure motion event expressions inside and outside the classroom

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Published Version

Research Article

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https://doi.org/10.1515/iral-2023-0006
Received January 11, 2023; accepted January 12, 2023; published online February 2, 2023

Abstract: In this introduction, we focus on three approaches to motion event construal, and explain how the papers in this special issue contribute to ongoing discussions in different fields of research. First of all, in second language (L2) acquisition, researchers ask to what extent L2 learners can separate the different conceptual systems that underpin motion in both languages, and whether there is crosslinguistic influence from the first language (L1) on the L2 or vice versa in the expression of motion. In particular research on gestures in SLA can throw new light on this issue. Second, linguists and psychologists are interested in finding out whether crosslinguistic differences might have an influence on non-linguistic cognition in the motion domain. This might be revealed in experimental tasks where speakers are asked to judge the similarity of film clips in contexts where no overt language is used. The third relevant question is to what extent this conceptually complex domain can be taught. This pespective on motion event construal has received very little attention from researchers interested in Instructed Second Language Acquisition. In the current SI, insights from cognitive grammar are used to explore the teaching of motion event construals to L2 learners, but we hope that the current SI will inspire researchers working in different frameworks to explore the teachability of motion in the classroom.

Keywords: crosslinguistic influence; gestures; metaphorical movement; motion event construal; thinking for speaking

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1 Introduction

When we tell our friends what we have done last night, this almost always involves describing people or objects moving through space. Descriptions of such motion events can sometimes be very basic as in (1), which describes the Motion (*moved*) of a Figure (*we*) through a Path (*into*) with respect to a particular reference object or Ground (*our new apartment*).

(1) *We* *moved* *into* *our new apartment.*
[Figure] [Motion] [Path] [Ground]

More complex constructions are often needed to describe the details of what happened at a particular event, such as a football match. In (2), for example, we find a description of the Manner of motion (*strode*) of the Figure (*Gascoigne*), who subsequently causes an object to be moved (*fired his piledriver of a free kick*). Path and Ground (*up to a dead ball; right into the top corner*) are also described in great detail in each part of the sentence. So the motion events described in (2) contain six components: the Figure, Motion, Path, Ground, Manner and Cause.

(2) *With just 5 min on the clock, Gascoigne strode up to a dead ball some 30 yards from goal and fired his piledriver of a free kick right into the top corner*.[1]

These examples illustrate that the representation of motion and space is a fundamental human cognitive ability (Papafragou and Selimis 2010). However, speakers of different languages talk about motion in ways that are clearly distinct (see the next section for details). In other words, the mapping of motion concepts onto linguistic structures differs between languages, which makes this a very interesting topic for investigation for at least three different fields. First of all, in the field of second language (L2) acquisition, researchers try to answer the question to what extent L2 learners can keep two separate conceptual systems in their mind, and whether there is crosslinguistic influence from the first language (L1) on the L2 or vice versa. Second, linguists and psychologists are interested in finding out whether the different linguistic patterns might have an influence on non-linguistic cognition, that is on the way speakers perceive the world. The third relevant question is to what extent this conceptually complex domain can be taught, which brings us to the field of Education or Instructed Second Language Acquisition (ISLA).

The current special issue of IRAL is based on papers presented at a Workshop[2] held at the University of Reading in April 2021, entitled *Can motion event construal be*

1 https://bleacherreport.com/articles/1060662-12-of-the-best-goal-commentaries-of-all-time.

2 Full details about the workshop and a link to the Youtube videos with the talks can be found here: [https://research.reading.ac.uk/celm/can-motion-event-construal-be-taught-or-restructured-evidence-

taught or restructured? Evidence from bilinguals and L2 learners. The three different strands of research into motion event construal described above, and the contribution the papers which are part of this SI make to discussions in the field are briefly introduced below.

2 Typological differences in motion event construal and crosslinguistic influence

A key difference in the ways in which motion is lexicalized in different languages relates to the expression of Path of motion (e.g. *into* or *out of (a shop)*) and Manner of motion (e.g. *run or crawl*). In French and other Verb-framed languages, Path is generally conflated with Motion and mapped onto the main verb (e.g. *entrer* 'to enter'), while Manner of motion (e.g. *en courant* 'running') is optionally expressed in a satellite, as in (3).

(3)

Angela	*entre dans*	*le magasin*	*(en courant).*
Angela	entered	the shop	running
Figure	Path	Ground	Manner

In English and other Satellite-framed languages, by contrast, Manner is typically conflated with Motion and mapped onto the main verb, while Path is expressed in a satellite, as in (4).

(4)

Angela ran		*into*	*the shop.*
Figure	Manner	Path	Ground

Restructuring these patterns in the process of second language acquisition is known to be very difficult (Cadierno and Ruiz 2006; Navarro and Nicoladis 2005; Slobin 1996), because it involves learning new ways to map concepts such as Path and Manner onto the relevant linguistic forms in the L2. In addition, concepts do not always overlap completely between two languages or a particular concept may not be lexicalized at all in one of the two languages, as is the case for emotions (Pavlenko 2009) or colour terms (Athanasopoulos 2009). This is also true for verbs of Manner of motion, of which there is a great variety in English. Verbs such as *traipse* 'go somewhere unwillingly because you are tired or unhappy'[3] have a highly specific

from-bilinguals-and-l2-learners/]. We gratefully acknowledge funding from the School of Literature and Languages, and the Centre for Literacy and Multilingualism of the University of Reading for this workshop. The guest editors of this special issue are also most grateful to Andy Gao and the IRAL team for giving us the opportunity to edit this collection of papers for the journal.

3 https://www.collinsdictionary.com/dictionary/english/traipse [accessed 19th December 2022].

meaning. In many other languages (e.g. in Dutch) this concept has not been lexicalized. Conversely, in Dutch, there is a Frisian loanword *klunen*, which means 'walk over land while wearing ice skates', which is not lexicalized in other languages spoken in countries where skating is commonly practiced (Danish, Finnish, Norwegian, and Swedish).[4] However, the greatest difficulty for L2 learners lies not so much in learning these exceptional Manner verbs, but in their 'packaging' in typical S-framed structures.

While the basic components of a motion event as proposed by Talmy (2000) are widely used in the field, Vulchanova, Martinez and Vulchanov (2012) point out that many Manner verbs, such as *climb* or *walk*, also contain an element of Path, because they imply a direction of movement (vertical for *climb* and horizontal for *walk*). As the notions of Manner and Path are not precise enough to describe the different aspects of a motion event in detail, Vulchanova et al. suggest Manner and Path are, in fact, pre-theoretical notions that can be decomposed into finer conceptual distinctions (see also Dimitrova-Vulchanova and Weissgerber 2007).

Given the complexities involved in conceptualizing motion, it is not surprising that restructuring motion event construal in the process of L2 acquisition is highly complex. Evidence for the difficulties experienced by learners and bilinguals can be found in the existence of crosslinguistic influence (CLI) in learning how to map forms and concepts onto each other in a L2 (Athanasopoulos and Aveledo 2013; Aveledo and Athanasopoulos 2016, and this volume; Daller et al. 2011; Muñoz and Cadierno 2019). This is true not only for motion event construal but for learning word meaning in general. Indeed, the available evidence regarding learning of word meanings suggests that in the early stages of learning L2 words, learners may well just map a new form onto an old L1 meaning (Gullberg 2009; Jiang 2000), as restructuring the underlying meaning towards the new L2 meaning is very difficult. This can be seen, for example, in the descriptions of the behaviour of a character in a film clip by American L2 learners of Russian, who used the term *serdit'sia* (to be experiencing anger, to be actively cross, angry, mad at someone in particular), where monolingual speakers of Russian used the verb *zlit'sia* (to be experiencing anger in general) (Pavlenko 2009). The learners found it difficult to understand the conceptual differences between these two Russian emotion terms, and likely assumed that the meaning of English *anger* could be transferred to the Russian term *serdit'sia*.

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4 We are very grateful to the following colleagues for providing information about the paraphrases used to describe *klunen* in different languages spoken in Northern Europe: Teresa Cadierno (Danish), Scott and Sirpa Jarvis (Finnish and Swedish) and Mila Vulchanova (Norwegian). It is possible that *klunen* is not widely practised in countries where these languages are spoken, because skating conditions are better in Northern European countries. The need to fill this lexical gap may therefore not be felt as acutely as in the Netherlands, where winters are not as severe.

These papers illustrate not only that it is indeed complex for L2 learners to acquire new form-meaning mappings, but also that learners are sometimes not aware of the differences between their languages, which is also true for the domain of motion (Muñoz and Cadierno 2019). This may be because learners focus on similarities rather than differences between languages (Ringbom and Jarvis 2009), and this may lead to overgeneralizations. As pointed out by Larrañaga et al. (2012), the existence of Path verbs such as *arrive*, *leave* in English leads L2 learners of Spanish to assume that both languages express motion in the same way, although the two systems overlap only partially. Indeed, partial overlap between two languages may trigger transfer from the L1 to the L2 (Adjémian 1983; Larrañaga et al. 2012). In addition, the L2 impacts the L1 in that bilinguals talk about motion in their L1 in ways that differ from the typical patterns found among monolinguals. The fact that several studies have shown that bilinguals occupy an intermediate position in between monolinguals of either language in the expression of motion makes it likely that the two systems have converged in the bilinguals under study (Aveledo and Athanasopoulos 2016; Daller et al. 2011; Muñoz and Cadierno 2019).

While the tendency of learners to look for similarities between their L1 and their L2 may explain the occurrence of CLI at least to some extent, bidirectional influences are found in speech or writing even among advanced learners and bilinguals who use both languages on a daily basis. Reasons for the existence of CLI among bilinguals of different levels of proficiency should probably be sought in the fact that separating two conceptual systems and their linguistic correlates is cognitively costly (Matras 2000). As Matras points out, it is the need to reduce the cognitive load of maintaining two separate systems that leads to language contact phenomena such as CLI, convergence and borrowing (see also Treffers-Daller et al. 2022). Thus, it is likely that the conceptual complexity of motion event construal and the contrasts between the patterns found in different languages lead bilinguals and L2 learners to rely on CLI as a strategy to manage the cognitive load of maintaining two language-specific motion systems.

Very interesting evidence regarding speakers' ability to restructure the way in which they talk about motion can be obtained from studies of gesturing among L2 learners. In this strand of research, one of the key questions is whether their gestures become more targetlike in the process of L2 acquisition. Gullberg's (2009) study about the use of the Dutch posture verbs *zetten* (lit. 'set', 'put in a vertical way') and *leggen* (lit. 'lay', 'put in a horizontal way') did indeed show that more advanced learners were more likely to gesture in ways typical for Dutch, but many English L1 learners of L2 Dutch who used the Dutch posture verbs in a targetlike way kept gesturing in ways typical for English monolinguals. The reverse was not found, so there was no evidence learners of Dutch compensated for the lack of appropriate use of posture verbs by gesturing in the ways Dutch monolinguals do. Gullberg (2009:

240) concludes that the reconstruction of meaning in L2 acquisition is no trivial matter. Clearly, gestures can provide a unique window on the issue of transfer of L1 meaning into the L2, and more research into this area is therefore urgently needed (see also Stam, Urbanksi, Lantolf and Smotrova, this volume). Future studies of speech gesture (a)synchrony are likely to benefit enormously from the potential of a novel technique which involves the use of 3D-animated characters based on Motion Capture data from real speakers (Nirme et al. 2020).

While bidirectional CLI has been shown to be prevalent in the expression of motion in bilinguals, there is still a discussion about the individual difference variables which impact on the occurrence of CLI, and how these interact with each other. The two first papers in the SI provide additional evidence about these modulating variables. Aveledo and Athanasopoulos focus on bidirectional cross-linguistic influence in the expression of Path and Manner in 42 L1 Spanish speakers of English as an L2. In both languages of the bilinguals, they observed restructuring of the conceptualization patterns that seemed to emerge from contact with the other languages. Key modulating variables were proficiency and Age of Acquisition (AoA), which impacted on the use of manner verbs in both languages. A novelty of the study was that the authors were able to disentangle the effects of both variables by running partial correlations: in bilinguals, the frequencies of manner verbs, path verbs and *other* verbs in Spanish and in English were partially correlated to L2 proficiency, whilst controlling for AoA, and to AoA, whilst controlling for L2 proficiency. Thus, they found that those who acquired L2 English earlier produced more manner verbs in the L2 than late learners, and those who had higher proficiency in English also produced more manner verbs in English. However, by comparison with monolingual English speakers, the bilinguals produced fewer manner verbs and more path verbs, which illustrates the fact that bilinguals' productions are often intermediate between those of monolinguals of each language.

In the second paper in the SI, French and Italian are the target languages of the learners. In her study among 40 learners of L2 French (20 English L1 and 20 Italian L1 learners) and 40 learners of L2 Italian (20 English L1 and 20 French L1) and monolingual controls, Anastasio found that only the advanced group showed L1 transfer in the L2, but the intermediate group of learners did not, possibly because they had adopted a strategy to respond minimally to the stimuli. A very interesting finding of the study was also that English L1 learners of Italian as an L2 used many verb particle constructions such as *andare via* 'go away', but the French L1 learners of Italian did not make use of this strategy. The author attributes to the fact that French does not allow these constructions, and is a more prototypical V-language than Italian. In the final section, the authors propose some interesting teaching advice that could facilitate the learning process of motion event encoding in classrooms, and could be tested in future research.

3 The impact of language on non-linguistic cognition

Although studies into CLI fill an important gap in our understanding of the difficulties L2 learners and bilinguals face in restructuring this domain, it is also crucial to obtain new insights into the ways in which language might affect *non-linguistic* cognitive processes, such as classification, or categorical perception (Lucy 1997). Research into this issue aims to test the Linguistic Relativity Hypothesis (LR) (Whorf 1956) that language can shape thought, or put differently bias our worldview. This hypothesis is different from the Thinking-for-Speaking Hypothesis (TFS) (Slobin 1987, 1996) according to which the subjective orientation towards the world of human experience that is provided by our language affects the way in which we think while preparing to speak. As pointed out by Aveledo and Athanasopoulos (2016: 402), these two are crucially different from each other because LR focuses on the effects of language on non-verbal behaviour, while TFS focuses on the effects of language on speech planning and information structure. The LR hypothesis is still controversial (Papafragou et al. 2008), and difficult to test because it is very challenging to construe experiments in such a way that language is not active while participants are carrying out a supposedly non-linguistic task, such as the triads task (see also Papafragou and Selimis 2010). In some studies, researchers have therefore used a concurrent verbal suppression task, such as counting to ten, which aimed at interfering with participants' use of language to encode the events in the task. For an overview of studies in a variety of cognitive domains which have provided evidence of the effects of language on cognition, see Casasanto (2015).

As the conditions under which LR might appear is still being debated, new methods to investigate the effects of language on non-linguistic cognition during online processing are very much needed. In the third paper for this SI, Vanek and Fu show how new insights into this issue can be obtained from an experimental method called *breaking continuous flash suppression* (b-CFS), which has the potential to capture language-induced biases when processing motion. Visual stimuli, in this case cartoon clips showing either salient Manner or salient Path, were presented to native speakers of two typological different languages, English and Mandarin. These visual stimuli were suppressed by continuous flash lights. The assumption behind the technique is that participants' habitual linguistic encoding remains effective during perceptual suppression, and that the most perceptually salient stimuli will be break faster into awareness. In the paper, the authors critically assess the potential for this technique to move the research agenda in this domain forward.

4 Can motion event construal be taught?

Although the difficulties learners and bilinguals experience in talking, gesturing or writing about motion in their L2 are well attested, there is still little research which focuses on how a new way to talk about movement through space can be taught (Cadierno 2008; Treffers-Daller 2012). This aspect of grammar is also generally neglected in the L2 syllabus (Alghamdi et al. 2019; Attwood 2017). The first author to provide detailed proposals for receptive and productive activities to teach motion event construal is Cadierno (2008). Importantly, Cadierno also makes a link between these pedagogical approaches and SLA theories, such as VanPatten and Cadierno's Input Processing theory, focus-on-form (Long 1991) and cognitive linguistics (Lakoff 1987). While many studies focus on changes in learners' *output*, it may well be the case that more attention should be paid to how learners process the L2 *input*, and on ways to improve the learners' default input processing strategies (VanPatten and Cadierno 1993). This approach also underpins the work of Attwood (2017), Colasacco (2019) and Laws et al. (2021), who show that instructional packages inspired by VanPatten and Cadierno's (1993) Input Processing approach can have a positive effect on restructuring of motion event construal in L2 learners. Other solutions proposed by the research community include Cadierno's (2008) and Bylund and Athanasopoulos' (2015) suggestions that multimodal input (e.g. film clips with action scenes) might help to restructure motion. Some evidence that pairing film clips of motion events with target expressions may indeed further L2 acquisition of motion event construal can be found in Burghardt (2019), who used an audio-visual judgement task to study boundedness (i.e. whether or not an endpoint was reached by the Figure in a motion event) in L2 Hungarian.

That multimodal input might be beneficial for the domain under investigation here is based on evidence that concepts are also multimodal: when we process words such as *cinnamon,* olfactory brain areas are activated, while processing words such as *kick* or *pick* leads to activation of motor areas in the brain (Pulvermüller and Fadiga 2010). Researchers working in cognitive linguistics also suggest that meaning is closely connected to bodily experiences. According to Lakoff (1987: xiv–xv), for example, meaning is embodied, because 'the structures used to put together our conceptual systems grew out of bodily experience and make sense in terms of it'. Thus, evidence from cognitive linguistics as well as from neuroscience suggests that multimodal input might be beneficial for teaching interventions in the field of motion event construal.

Martín-Gascón's contribution to the current SI, the fourth in this volume, investigates the potential of using multimodal input for the teaching of metaphorical movement. The specific focus is on change-of-state constructions such as

ponerse + *adjective* (e.g. *ponerse triste* 'get sad'). Thirty-three L1 English-L2 Spanish learners took part in the study. Two different teaching methods were employed in the intervention study: a cognitive-based instruction package and a traditional communicative method based on current Spanish/L2 textbooks. Participants performed four tasks testing production and comprehension of metaphoric uses. The cognitive-based instruction showed better learning results in all tasks compared with the traditional approach, although the group that received the training method improved over time too. In the discussion part, Martín-Gascón critically evaluates the different variables that may have contributed to the outcome of the study.

The final contribution to the current volume by Stam, Lantolf, Urbanski, and Smotrova, also focuses on how insights from cognitive grammar can contribute to the teaching of motion event construal. The teaching approach chosen is Concept-Based Language Instruction (C-BLI) (Lantolf and Zhang 2017; Lantolf et al. 2020). This approach relies on working with schematic representations of language concepts, known as Schemas for the Orienting Basis of Action (SCOBAs) to support learning. Importantly, Lantolf and Zhang (2017) point out that this approach could be used for the teaching of Path and Manner of motion in a L2. The paper by Stam et al. is the first study in which C-BLI is applied to the teaching of motion event construal. In this fourth contribution to the SI, the focus is not only on speech but also on gestures, which as Goldin-Meadow (2000) puts it, offer a window into the mind of the speaker, as gestures can convey information that is not conveyed in speech. Stam et al. carried out a small scale quasi-experimental study among seven L1 Spanish learners of English, who received eight 1 h sessions of instruction over a period of three weeks. Participants first provided a pretest narration, followed by an instruction phase, and a posttest narration. Their results were compared to L1 English speakers' narratives. The pretest showed that L2 learners were still using L1 patterns in the L2; however, after instruction, changes were observed in both language and gesture: the number of manner verbs increased, as well as the accumulation of path components within a single clause. The analysis of the gestures also suggested a shift towards an increment in the path gestures and boundary crossing gestures co-occurring with satellite units.

In summary, in the final part of the SI, two innovative pedagogical approaches to the teaching of motion have been proposed and tested in classrooms. In the studies included in the current SI, cognitive linguistics provided the theoretical underpinning of the pedagogies adopted in the studies, but VanPatten and Cadierno's (1993) Input Processing theory has also inspired two intervention studies (Colasacco 2019; Laws et al. 2021). In addition, a promising alternative is the extensive reading approach Ro and Kim (2021) have used in their study of construction learning (which includes learning of constructions involving motion) by young Korean learners of L2 English. In any case, whatever one's preferred theoretical

underpinning, it is very important for pedagogical approaches to be informed by a theory of learning (VanPatten 2015), so that studies will not only shed new light on solutions for the teaching of a particular aspect of language, but will also be relevant for theory building in SLA and bilingualism more generally.

Setting up intervention studies in ISLA is exceedingly difficult, because there are numerous pitfalls that need to be avoided if sound conclusions are to be drawn from the research for theory or practice. Therefore, researchers wishing to take up this research agenda should heed Plonsky's (2017) advice for improving methodological rigor in the field, regarding study design, analysis and reporting of results. Researchers in ISLA who take these recommendations on board will be in an excellent position to provide the crucial evidence that is needed to inform pedagogy (see Sato and Loewen 2019). Given the fact that most of the approaches presented in Sato and Loewen's book length treatment of L2 pedagogies have not yet been tried out in the teaching of motion event construal, there is a wide range of opportunities for researchers to exploit. We therefore hope that the papers in the current SI will form a source of inspiration for future researchers to approach motion in novel ways inside and outside the classroom.

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