This paper examines bidirectional transfer between L1 English and L2 Spanish in the motion domain, both in boundary crossing [BC] and non-boundary crossing [NBC] situations. It focuses on the semantic component of Path. Furthermore, it examines whether learners’ proficiency has an impact on the degree of cross-linguistic influence [CLI] between their L1 and L2. An experimental study was conducted with five groups of informants: an English monolingual group, a Spanish monolingual group and three groups of L1 English learners of L2 Spanish. The findings support the existence of bidirectional transfer. The three groups of learners exhibited L1 typological patterns when retelling motion events in L2: (a) they used fewer path verbs than the monolingual Spanish group in BC and NBC; (b) they produced examples of satellites encoding the Path in BC and NBC; and (c) they expressed event conflation with one main verb in BC. In addition, the L2 influenced the L1, although this influence was restricted to learners with higher levels of L2 proficiency who used more path verbs than the monolingual English group. These results provide evidence for the role of bidirectional transfer in second language acquisition.

Keywords: bidirectional transfer, cross-linguistic influence, English, motion events, Path, thinking for speaking, second language acquisition, Spanish

1 Introduction

Motion is a constant in our lives. We move voluntarily, we change state, we see how other objects and bodies move and we talk about our own motion or that of others in our mother tongue. As motion is a universal concept, all languages use their own resources to talk about motion events, and therefore every language has its own features and characteristics that will depend on its typological
affiliation and specific rhetorical style (Talmy 1985, 1991, 2000). For all these reasons, the domain of motion is a favorable and interesting area to research cross-linguistic influence [CLI] in second language acquisition.

The present study investigates whether English learners of L2 Spanish have acquired the characteristic lexicalization patterns to express motion events in their L2 or whether, on the contrary, they are still guided by their L1 patterns. Furthermore, it examines the possible impact of the L2 on the learners’ L1 and it investigates whether the level of L2 proficiency (i.e. low, intermediate, and upper intermediate) has an impact on the degree of bidirectional CLI. The focus of the study is on the semantic component of Path. In the following section, we present the theoretical frameworks that have guided the study.

2 Talmy’s typological framework and Slobin’s thinking for speaking hypothesis

Following Talmy’s (1985, 1991, 2000) typological classification, languages can be divided into two groups on the basis of the typical form-meaning patterns found in their description of motion events. In satellite-framed languages [S-languages] the verb typically conflates Motion and Manner or Cause, and Path is encoded separately by a satellite, that is, a grammatical category of any constituent other than a nominal or a prepositional phrase. Examples of satellites are English verb particles or German separable and inseparable verb prefixes (Talmy 2000: 222). All Indo-European languages - with the exception of Romance languages - are included in this group. In verb-framed languages [V-languages], on the other hand, the main verb encodes Path while Manner, if necessary and salient to the context, is coded in an adjunct such as a gerund, an adverbial or a prepositional clause. Romance languages, Semitic and Polynesian languages are part of this group. English would be an example of S-languages and Spanish would be an example of V-Languages, as seen in the following sentences (Talmy 2000: 49–51):

(1) a. The bottle floated into the cave.
   b. La botella entró en la cueva flotando.
   ‘The bottle entered in the cave floating’

In the S-language (1a), the Figure, *the bottle* is followed by a manner verb, *floated*; a satellite, *into*, indicating the trajectory to follow; and the Ground, *the cave*, which in this sentence expresses the goal of movement. In the V-language example (1b), the Figure, *la botella* “the bottle”, is accompanied by a path verb,
entró, “entered” followed by the goal Ground, en la cueva “in the cave”, and the semantic component of Manner, flotando “floating”, is expressed by means of an external adjunct, in this case, a gerund.

Event conflation or the amalgamation of trajectories with one main verb is also characteristic of S-languages (2a), whereas it is not as common in V-languages (2b), where every different Ground is presented with one new verb (Slobin 2004: 238):

(2) a. The frog **crawled out** of the jar and **through** the window **into** the woods.

b. *La rana se escapó* del frasco, *salió* por la ventana y *se internó* en el bosque.

‘The frog escaped from the jar, exited through the window and got into the woods’

While the English sentence (2a) uses one verb, to crawl, to amalgamate three different Grounds, the Spanish version (2b) needs to make use of three different path verbs, escapar “escape”, salir “exit” and internarse “get into”, to introduce three different Grounds, i.e. source: del frasco “from the jar”, medium: por la ventana “through the window” and goal: en el bosque “into the woods”. Furthermore, the Spanish version does not express Manner, either in the main verb or in an adjunct.

V-languages present some constrained variability in their lexicalization patterns (Aske 1989; Slobin and Hoiting 1994). Path has to be expressed in the verb in situations involving boundary crossing (BC), i.e. in the case of telic path phrases that predicate the endpoint of the Path location of the Figure (3a). This is because a spatial boundary is seen as a change of state (3a). In this type of situations, Manner, if expressed, must be coded in an external adjunct such as gerunds, adverbials or prepositional clauses (3a).

In non-BC situations, however, V-languages can follow the same lexicalization pattern as S-languages, that is, Manner encoded in the main verb and Path encoded in an external adjunct, e.g. a prepositional phrase (3b).

In contrast, S-languages allow for the same lexicalization pattern, i.e. a manner verb followed by a prepositional phrase expressing the Path and the Ground components, in both BC (3c) and non-BC (3d) situations.

(3) a. *Entra en la casa corriendo/ rápidamente/ a toda prisa*

‘He enters in the house running/ rapidly/in a rush’

b. *Corre por la casa*

‘He runs in/ around the house’

c. *He ran into the house*

d. *He ran in the house*
V-languages seem to prioritize the component of Path over the component of Manner, whereas S-languages seem to prioritize Manner over Path. This suggests that the point of view that speakers take on motion events is influenced by the language they speak, and it relates to Slobin’s thinking for speaking hypothesis (TFS) (1991, 1996), which refers to the on-line thinking process that takes place while speaking a language. TFS “involves picking those characteristics of objects and events that (a) fit some conceptualization of the event, and (b) are readily encodable in the language.” (Slobin 1996: 76) According to the TFS hypothesis, speakers codify the world and pay attention to details according to the linguistic tools in their language. Thus, S-language speakers will be more prone to (a) attend to Manner; (b) provide details of Path by means of satellites; and (c) amalgamate different trajectories with only one main verb. On the contrary, V-language speakers will tend to (a) pay relatively more attention to Path of motion; (b) let Manner be inferred by the context or express it in an external adjunct, if salient enough; and (c) rarely use event conflation or satellites.

A crucial question to be asked on the basis of the TFS hypothesis is how learners of a second language come to talk about different domains, such as motion events, especially if the emerging language and the established one are typologically different. Are learners’ L1 lexicalization and conceptual patterns resistant to be restructured? Will learners be able to develop other ways of thinking for speaking (Cadierno 2004, 2008) or will they be able to re-think for speaking (Robinson and Ellis 2008)? In other words: will they learn how the semantic components of motion events are characteristically coded in their L2; what elements are more prominent; and where to draw their attention to while speaking?

3 Empirical research into the expression of motion events

Research on the domain of motion has been conducted from different interdisciplinary and linguistic points of view. Initial research on motion events focused on L1 acquisition and use (e.g. Berman and Slobin 1994), on what lexicalization and conceptual patterns speakers of certain languages used when talking about motion events and if, given Talmy’s typology, there were intra-typological differences within the same language type (e.g. Strömqvist and Verhoeven 2004; Ibarretxe-Antuñano 2004; Hijazo-Gascón and Ibarretxe-Antuñano 2013).
Secondly, research started to examine the application of Talmy’s two-tiered language classification and Slobin’s TFS hypothesis to the field of second language acquisition. Research in this area has not only investigated the expression of motion events by learners whose L1 and L2 belong to different typological patterns (e.g. Cadierno 2004; Navarro and Nicoladis 2005; Hohenstein et al. 2006) but also by learners with languages belonging to the same typological pattern (Gullberg 2009 [English-Dutch]; Brown 2015 [Mandarin, English], Hijazo-Gascón 2018 [French, Italian, Spanish]). These studies mainly examined unidirectional transfer from the learner’s L1 to the L2 from different perspectives such as production (Cadierno 2004, 2010; Navarro and Nicoladis 2005; Cadierno and Ruiz 2006; Larrañaga et al. 2012; Curell 2013; Jessen 2014; Hijazo-Gascón 2018); comprehension (Bondarchuk and Derwig 2009; Czechowska and Ewert 2012; Luk 2012), and gestures and production (Stam 1998, 2006; Kellerman and van Hoof 2003; Negueruela et al. 2004). Findings of this research suggest that the lexicalization and conceptual L1 patterns are the point of departure to retell motion events in the L2 (e.g. Cadierno 2004; Cadierno and Ruiz 2006; Negueruela et al. 2004; Navarro and Nicoladis 2005; Hohenstein et al. 2006; Stam 2006; Brown 2007; Gullberg 2009; Muñoz 2013, 2015; Jessen 2014).

Thirdly, research has taken a step further to inquire whether bidirectional transfer could be possible (Pavlenko and Jarvis 2002). That is, not only whether the target language was influenced by the source one, but also whether the L2 would have an impact on the L1. Our study is framed in the line of recent bidirectional transfer work in motion events by e.g. Hohenstein et al. (2006), Brown (2007, 2015), Brown and Gullberg (2008, 2010, 2011, 2013), and Hendriks and Hickmann (2015).

### 4 The study

Our research advances the study of motion events in second language acquisition in three important ways. First, it includes learners in three different stages of the learning process, i.e. low, intermediate and upper intermediate, and asks whether the learners’ level of L2 proficiency has a differential role in bidirectional transfer. Previous work has focused on learners at the intermediate level (e.g. Inagaki 2002; Cadierno 2010; Brown 2007, 2015; Brown and Gullberg 2008, 2010, 2011, 2013), the advanced level (e.g. Navarro and Nicoladis 2005; Hijazo-Gascón 2018), or both the intermediate and advanced levels (e.g. Cadierno 2004; Cadierno and Ruiz 2006), whereas lower learning stages have tended to be neglected. Secondly,

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1 We use the terms bidirectional transfer and bidirectional cross-linguistic transfer interchangeably in the present paper.
it examines how learners express Manner, Path, and Ground in both BC and NBC situations, and asks whether learners are capable of retelling motion events with L2 appropriate choices, given the differences in lexicalization patterns for the expression of both types of events in S- vs. V-languages.

In previous research, the BC vs. NBC variable has only been documented in Cadierno (2010), who examined how Danish learners described BC situations; in Hendriks and Hickman (2015), who examined descriptions by French learners; and, in Alonso (2016), who investigated CLI in the comprehension of BC events by English learners. Finally, the present study contributes to the research on bidirectional transfer in the motion domain by examining learners with an L1 S-language (English) and an L2 V-language (Spanish). This language combination is different from the predominant one in L2 studies, which have examined learners with an L1 V-language and a L2 S-language (e.g. Brown 2007, 2015; Brown and Gullberg 2008, 2010, 2011, 2013; Bylund and Jarvis 2011) (but see Hendriks and Hickmann 2015 for an exception).

4.1 Research questions and hypotheses

The following research questions guided the study:
1. Will there be differences in the expression of Path by English and Spanish native speaker groups (NS) and the learner groups? Specifically, will there be differences among the five groups concerning: (a) the frequency of path verbs; (b) the use of satellites, and (c) the use of event conflation?
2. Will there be CLI from the learners’ L1 to L2 and vice-versa, i.e. from the L2 to the L1? In other words, will there be evidence of bidirectional transfer?
3. Will the learners’ level of L2 proficiency (low, intermediate, upper intermediate) play a role in the degree of bidirectional CLI?

On the basis of Slobin’s TFS hypothesis and previous second language acquisition research, we expect that the L2 Spanish learners will follow their L1 English conceptualization patterns when talking about motion in their L2 Spanish. More specifically, it is expected that they will tend to (a) use fewer path verbs than the Spanish NS group; (b) employ manner verbs followed by adverbs or prepositional phrases as satellites to express Path; and (c) use event conflation with one main verb. In contrast, it is expected that the Spanish NS group will tend to (a) prioritize Path over Manner, using manner verbs only when the expression of this component

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2 This paper focuses on Path although the overall study (Muñoz 2015) also examined the semantic components of Manner and Ground.
is communicatively important; and (b) avoid amalgamation of different trajectories with only one main verb. Finally, when describing motion events in their L1 English, it is predicted that the learner groups will transfer certain patterns of L2 Spanish into their L1, such as the tendency to use path verbs to a greater extent than English NSs, who will instead tend to produce more manner of motion verbs.

Furthermore, it is expected that the learners’ proficiency level will have an impact on the degree of bidirectional transfer. The higher the proficiency level of the learners, the less CLI from the L1 to the L2 will take place, as the learners will presumably have acquired the L2 lexicalization patterns. At the same time, it is expected that the higher the L2 proficiency level, the more CLI will be found between L2 and L1 as the lexicalization and conceptualization patterns of the L2 will be more entrenched in the learners’ bilingual mind.

4.2 Participants

A total of 11 NSs of English, 10 NSs of Spanish and 54 learners of L2 Spanish (22 with low proficiency level, 19 with intermediate proficiency level and 13 with upper intermediate proficiency) were included in the study.

All the Spanish learners were students in their second year at different universities in the United States. Their ages were between 19 and 22 years old. All were participating in a four-month Study Abroad program at Universitat Autònoma of Barcelona, where students took elective subjects from their degrees, plus a 90-hour Spanish course. The proficiency level of the three learner groups was set via an online test taken before coming to Barcelona, followed by a written and an oral exam upon arrival. These levels follow the requirements established by the Common European Framework of Reference.

The English NS group was also comprised of university students from the same US Study Abroad program. They had never studied Spanish before participating in the program, and they did not have a Hispanic background. The data were collected during the first week of their arrival in Barcelona, i.e. before they had started their Spanish courses.

As far as the Spanish NS group is concerned, participants were not university students because all Spanish college students had learned English during their primary and secondary education. Given this, we collected data from older informants with ages between 40 and 60 years old, who had never taken English at school. Five of these informants spoke Catalan as one of their L1s. We did not consider that this fact could distort our results, as both in Catalan and Spanish (Bartra and Mateu 2005; Acedo
and Mateu 2008; Ibarretxe-Antuñano et al. 2017), boundary crossing situations are considered as change of state and, in consequence, are expressed by a path verb, leaving Manner, if salient enough, to an external adjunct. To our knowledge, there are no studies that show intra-typological differences between these two languages regarding the semantic dimensions examined in the present study. Further research on possible intra-typological differences between Catalan and Spanish is needed.

The two groups of NSs can be considered to be functional monolinguals (Brown and Gullberg 2010) as they had hardly had any previous exposure to either Spanish or English, and they had not been involved in an active study of the two languages at the time of data collection.

Information on the language use of the L2 learners was obtained using an adapted version of the language background questionnaire developed by Gullberg and Indefrey (2003). On the basis of this questionnaire, five informants were discarded from the study. Four of them were rejected because their L1 was Portuguese, a verb-framed language, and the fifth informant had Russian, a satellite-framed language as his L1.

4.3 Stimuli and procedures

Data were elicited by means of fourteen short videos of the TV series Mr Bean. The videos were shortened, edited and modified by the researchers to show seven NBC motion events and seven BC motion events. The videos were shown in the order depicted in Table 1. The stimuli may be watched at http://youtu.be/75VBp7igCF4.

With regard to the learner groups, the data were collected in two different sessions. On the first session, participants had to describe Mr Bean’s videos in their L2, so the instructions provided on the video screen and those given by one of the researchers were in Spanish as well. A week later, the data were collected in their L1, and all the instructions were provided in English. Learners were given one minute after every video to describe the action they had seen. The use of dictionaries was not allowed but the learner groups were given an English-Spanish glossary with the key nouns (but not verbs) needed to complete the task (e.g. trampolín “diving board”, aparcamiento “car park”, grandes almacenes “department store”). These key nouns were meant to draw the participant’s attention towards the motion event. The experimental procedures for the NS groups were identical to those of the learner groups, except that they only wrote descriptions in their L1 and they were not provided with any bilingual glossary.
4.4 Data analysis

The data were coded according to the constituent used to express Path: (1) Path mapped onto the main verb; (2) Path mapped onto a satellite; and (3) Path expressed in the main verb in cases of event conflation.

The following two comparisons were made: the L1 performance of the Spanish NSs was compared to that of the learner groups in their L2, and the L1 performance of English NSs was compared to that of the learner groups in their L1.

5 Results and discussion

Regarding the first research question, we first present and discuss the results from the comparison between the Spanish NSs and the three learner groups in their L2, followed by the results from the comparison between the English NSs and the three learner groups in their L1. This is done for each analysis: path mapped onto verbs, path mapped onto satellites, and event conflation.

Table 1: Motion events stimuli.

<table>
<thead>
<tr>
<th>Number</th>
<th>Motion event</th>
<th>Type of situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mr Bean runs towards the trampoline</td>
<td>NBC</td>
</tr>
<tr>
<td>2</td>
<td>Mr Bean drives out of the garage</td>
<td>BC</td>
</tr>
<tr>
<td>3</td>
<td>Mr Bean jumps on one leg across the street</td>
<td>NBC</td>
</tr>
<tr>
<td>4</td>
<td>Mr Bean runs into a shopping mall</td>
<td>BC</td>
</tr>
<tr>
<td>5</td>
<td>Mr Bean jumps up and down and dances around his room</td>
<td>NBC</td>
</tr>
<tr>
<td>6</td>
<td>The ball bounces over a fence, over the golf course and into a bus</td>
<td>BC</td>
</tr>
<tr>
<td>7</td>
<td>Mr Bean swims to the ladder</td>
<td>NBC</td>
</tr>
<tr>
<td>8</td>
<td>Mr Bean falls off the trampoline into the water</td>
<td>BC</td>
</tr>
<tr>
<td>9</td>
<td>Mr Bean crawls along the platform inside a bag</td>
<td>NBC</td>
</tr>
<tr>
<td>10</td>
<td>Mr Bean walks into a tunnel</td>
<td>BC</td>
</tr>
<tr>
<td>11</td>
<td>Mr Bean walks down plenty stairs</td>
<td>NBC</td>
</tr>
<tr>
<td>12</td>
<td>Mr Bean runs out of his bedroom</td>
<td>BC</td>
</tr>
<tr>
<td>13</td>
<td>The pram flies down from the sky</td>
<td>NBC</td>
</tr>
<tr>
<td>14</td>
<td>Mr Bean walks into a shop</td>
<td>BC</td>
</tr>
</tbody>
</table>

*Note: NBC = Non Boundary-crossing; BC = Boundary-crossing*
5.1 Use of path verbs

5.1.1 Spanish NSs vs. learner groups

Table 2 below shows the mean and standard deviation values associated to the use of Spanish path verbs in NBC and BC situations, by the Spanish NSs vs. the learner groups.

Table 2: Use of path verbs in NBC and BC situations by Spanish NSs vs. learner groups: Means and Standard Deviations.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean NBC</th>
<th>SD NBC</th>
<th>Mean BC</th>
<th>SD BC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish NSs</td>
<td>10</td>
<td>4.40</td>
<td>1.35</td>
<td>7.10</td>
<td>1.29</td>
</tr>
<tr>
<td>L-Low</td>
<td>22</td>
<td>1.86</td>
<td>1.25</td>
<td>3.64</td>
<td>1.59</td>
</tr>
<tr>
<td>L-Intermediate</td>
<td>19</td>
<td>1.58</td>
<td>1.26</td>
<td>3.26</td>
<td>1.28</td>
</tr>
<tr>
<td>L-Upper intermediate</td>
<td>13</td>
<td>1.92</td>
<td>1.04</td>
<td>4.38</td>
<td>2.06</td>
</tr>
</tbody>
</table>

Note: NBC = Non Boundary-crossing; BC = Boundary-crossing; NSs = native speakers; L = learners

A non-parametric Kruskal-Wallis test used to compare different sample sizes was conducted on the data. The results revealed a significant difference found between the Spanish NS group and the three learner groups with respect to the number of path verbs used in both NBC and BC situations. More specifically, the Spanish NS group used a significantly larger number of path verbs than the three learner groups. For NBC motion events, the values were as follows: NS vs. low proficiency group: \( p = 0.002 \); NS vs. intermediate proficiency group: \( p = 0.000 \); NS vs. upper intermediate group: \( p = 0.010 \). For BC motion events, the following values were obtained: NS vs. low proficiency group: \( p = 0.000 \); NS vs. intermediate proficiency group: \( p = 0.000 \); NS vs. upper intermediate group: \( p = 0.021 \). In addition, no significant differences were found between the three learner groups (low proficiency vs. intermediate proficiency: \( p = 1.000 \); low proficiency vs. upper intermediate: \( p = 1.000 \); intermediate vs. upper intermediate proficiency: \( p = 0.562 \)). The list of path verbs used by the Spanish NSs and the three groups of learners in their L2 can be found in Appendix A.

These findings are in line with those of Jessen (2014), who found that learners with an L1 V-language – Turkish - and an L2 S-language – Danish -, tended to follow the lexicalization patterns of their L1 when describing Path in their L2. Cadierno’s (2004) and Hijazo-Gascón’s (2011, 2018) findings, on the
other hand, differ from ours as the learner groups tended to express a larger number of path verbs than the native groups. In explaining the differences across their studies and ours, we have to consider that Danish was the L1 in Cadierno’s study, an S-language that borrows barely no path verbs from Latin. In Hijazo- Gascon’s, however, L1 languages were Italian, German, and French. As Italian and French are typologically V-languages, the findings from these learners could be explained as a matter of positive transfer from their L1 patterns to their L2, while the results from the German learners can be interpreted as evidence of restructuring of the L1 TFS. The findings by Hendriks and Hickmann (2015) also differ from ours in that their English learners of L2 French -at three different learning stages- used frequent path verbs for the expression of BC events, although they did not reach the target-like choice of verbs, even at the highest point of proficiency.

5.1.2 English NSs vs. learner groups

Table 3 below shows the mean and standard deviation values associated to the use of English path verbs in NBC and BC situations by the English NSs vs. the learner groups.

Table 3: Use of path verbs in NBC and BC situations by English NSs vs. learner groups: Means and Standard Deviations.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean NBC</th>
<th>SD NBC</th>
<th>Mean BC</th>
<th>SD BC</th>
</tr>
</thead>
<tbody>
<tr>
<td>English NSs</td>
<td>11</td>
<td>0.45</td>
<td>0.52</td>
<td>2.45</td>
<td>0.52</td>
</tr>
<tr>
<td>L-Low</td>
<td>22</td>
<td>0.95</td>
<td>0.95</td>
<td>3.14</td>
<td>1.13</td>
</tr>
<tr>
<td>L-Intermediate</td>
<td>19</td>
<td>1.26</td>
<td>0.93</td>
<td>2.95</td>
<td>0.97</td>
</tr>
<tr>
<td>L-Upper intermediate</td>
<td>13</td>
<td>1.77</td>
<td>0.99</td>
<td>2.92</td>
<td>1.44</td>
</tr>
</tbody>
</table>

Note: NBC = Non Boundary-crossing; BC = Boundary-crossing; NSs = native speakers; L = learners

A non-parametric Kruskal-Wallis test was again used for this analysis. The results revealed the following. Regarding NBC situations, the results showed significant differences between the English NS group and the upper intermediate group. That is, the English NS group used significantly fewer number of path verbs than the upper intermediate group with an obtained value of $p = 0.005$. No significant differences were found between the three learner groups (low proficiency vs. intermediate proficiency: $p = 1.000$; low proficiency vs. upper intermediate:
Concerning BC situations, the Kruskal-Wallis test conducted on the data revealed no significant difference between the English NS group and the three learner groups ($p = 0.280$). The findings regarding NBC situations indicate that the emerging patterns affect established ones (Brown 2007), at least, for learners with a higher level of L2 proficiency. This finding parallels the one observed in Brown and Gullberg (2010) in that the English learners in that study encoded Path to a greater extent than Japanese monolinguals, thus also evidencing a CLI pattern from the L2 to the L1. The difference with respect to our study is that Path was coded by means of adverbials rather than by verbs. These results provide support for the notion that the L1 spoken by a bilingual or a multilingual speaker differs from that of a monolingual speaker, which has also been documented in other semantic areas, such as objects (Cook et al. 2006) or colors (Athanasopoulos 2009). The list of path verbs used by the English NSs and the three groups of learners in their L1 can be found in Appendix B.

### 5.2 Use of satellites

#### 5.2.1 Spanish NSs vs. learner groups

Table 4 below shows the mean and standard deviation values associated to the expression of Path in satellites in both NBC and BC situations by the Spanish NSs vs. the learner groups.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean NBC</th>
<th>SD NBC</th>
<th>Mean BC</th>
<th>SD BC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish NSs</td>
<td>10</td>
<td>0.00</td>
<td>0.00</td>
<td>0.10</td>
<td>0.32</td>
</tr>
<tr>
<td>L-Low</td>
<td>22</td>
<td>0.32</td>
<td>0.48</td>
<td>0.45</td>
<td>0.60</td>
</tr>
<tr>
<td>L-Intermediate</td>
<td>19</td>
<td>0.16</td>
<td>0.37</td>
<td>0.79</td>
<td>0.92</td>
</tr>
<tr>
<td>L-Upper intermediate</td>
<td>13</td>
<td>0.54</td>
<td>1.20</td>
<td>0.69</td>
<td>0.85</td>
</tr>
</tbody>
</table>

*Note: NBC = Non Boundary-crossing; BC = Boundary-crossing; NSs = native speakers; L = learners*

A Kruskal-Wallis test conducted on these data revealed no significant differences between the Spanish NS group and the learner groups, neither in BC ($p = 0.118$) nor in NBC situations ($p = 0.216$).
Despite the lack of statistical significance, a more qualitative analysis of the data showed interesting examples of “satellizations”, that is, adverbials or prepositional phrases used as satellites to express Path (Cadierno and Ruiz 2006). The learner groups followed their L1 lexicalization pattern of employing a manner verb plus an adverbial or prepositional phrase as a satellite, encoding Path in both BC and NBC situations. Examples of these “satellizations” can be seen in Table 5.

Table 5: Learners’ examples of manner verb + “satellization” in BC and NBC situations.

<table>
<thead>
<tr>
<th></th>
<th>BC</th>
<th>NBC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td><em>Está caminando adentro del túnel</em>  “He is walking into the tunnel”</td>
<td><em>Camina debajo de unas escaleras</em> “He walks down the stairs”</td>
</tr>
<tr>
<td></td>
<td><em>Corre afuera del cuarto</em> “He runs out of the room”</td>
<td><em>Camina abajo las escaleras</em> “He walks down the stairs”</td>
</tr>
<tr>
<td></td>
<td><em>Corre afuera de su habitación</em> “He runs out of his room”</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Corrió fuera del dormitorio</em> “He runs out of the room”</td>
<td></td>
</tr>
<tr>
<td>Int.</td>
<td><em>Corre dentro en la tienda</em> “He runs into the shop”</td>
<td><em>Corre a través de la piscina</em> “He runs through the pool”</td>
</tr>
<tr>
<td></td>
<td><em>Conduce afuera del aparcamiento</em> “He drives out of the car park”</td>
<td><em>Camina bajo muchas escaleras</em> “He walks down many stairs”</td>
</tr>
<tr>
<td>Upper Int.</td>
<td><em>Salta arriba de dos bancos</em> “It (golf ball) jumps up two benches”</td>
<td><em>Corre abajo un calle</em> “He runs along a street”</td>
</tr>
<tr>
<td></td>
<td><em>Camina abajo de una calle</em> “He walks along a street”</td>
<td><em>Salta acerca de su habitación</em> “He jumps around his bedroom”</td>
</tr>
<tr>
<td></td>
<td><em>Salta afuera del curso de golf</em> “It (golf ball) jumps out of the golf course”</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Caminó afuera de una tienda</em> “He walks out of a shop”</td>
<td></td>
</tr>
</tbody>
</table>

*Note: BC = Boundary-crossing; NBC = Non Boundary-crossing; Int. = Intermediate*

These examples suggest that learners may not be aware that telic phrases have a different structure in their L2 as compared to their L1. These phrases have a structure consisting of a path verb followed by a manner adjunct (if salient enough), but learners follow the L1 TFS pattern, consisting of a manner verb plus a path satellite, instead. The consequence is that learners describe the BC situations depicted in the video stimuli as NBC situations. For example, a NBC utterance like *Corre afuera del cuarto* “Runs outside the room” was employed to describe the video where Mr Bean runs out of the room, that is, a BC situation, nowhere expressed by the learner.
Moreover, instances of “satellizations” were not only found with manner verbs but also sometimes with path verbs, as shown in Table 6 below.

Table 6: Learners’ examples of path verb + “satellization” in BC and NBC situations.

<table>
<thead>
<tr>
<th></th>
<th>BC</th>
<th>NBC</th>
</tr>
</thead>
</table>
| Low   | Cae off el trampolín “He falls off the trampoline” | Entrar detrás del barrera “He goes in behind a barrier”  
|       | Fue abajo muchas escaleras “He went down many stairs” |
| Int.  | Entra arriba de una valla “It (golf ball) goes up a fence”  
|       | Se cayó abajo de un trampolín “He fell down a trampoline”  
|       | Va adentro de la tienda “He goes into a shop”  
| Upper Int. | Va fuera de la salida “He goes out of the exit”  
|       | Va abajo de las escaleras “He goes down the stairs” |

Note: BC = Boundary-crossing; NBC = Non Boundary-crossing; Int. = Intermediate

These findings replicate what has been previously documented in Cadierno (2004), Cadierno and Ruiz (2006) and Hendriks and Hickmann (2015) where the following instances of “satellizations” were documented:

(4) a. El ciervo mueve al niño y a su perro abajo en un precipicio  
‘The deer moves the boy and his dog in the abyss’  
(Cadierno 2004)

b. El perro saltó afuera de la ventana  
‘The dog jumped out of the window’  
(Cadierno and Ruiz 2006)

c. Un vrai home court a travers une route  
‘A real man runs across a road’  
(Hendriks and Hickmann 2015)

Taking into consideration that in all these studies learners had an L1 S-language - Danish, English - and an L2 V-language - Spanish -, we can conclude that, when moving from an S-language into a V-language the lexicalization and conceptual pattern of describing Path outside the verb seems to be resistant to re-organization.
5.2.2 English NSs vs. learner groups

Table 7 below shows the mean and standard deviation values associated to the expression of Path encoded in satellites in NBC and BC situations by the English NSs vs. the learner groups.

Table 7: Use of satellites in NBC and BC situations by English NSs vs. learner groups: Means and Standard Deviations.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean NBC</th>
<th>SD NBC</th>
<th>Mean BC</th>
<th>SD BC</th>
</tr>
</thead>
<tbody>
<tr>
<td>English NSs</td>
<td>11</td>
<td>3.91</td>
<td>1.38</td>
<td>6.82</td>
<td>1.54</td>
</tr>
<tr>
<td>L-Low</td>
<td>22</td>
<td>4.27</td>
<td>1.45</td>
<td>6.23</td>
<td>2.41</td>
</tr>
<tr>
<td>L-Intermediate</td>
<td>19</td>
<td>3.63</td>
<td>1.54</td>
<td>5.74</td>
<td>1.97</td>
</tr>
<tr>
<td>L-Upper intermediate</td>
<td>13</td>
<td>3.85</td>
<td>1.57</td>
<td>5.69</td>
<td>1.89</td>
</tr>
</tbody>
</table>

Note: NBC = Non Boundary-crossing; BC = Boundary-crossing; NSs = native speakers; L = learners

The Kruskal-Wallis test conducted on these data again showed no significant differences between the use of path satellites by English NSs and learners in their L1. This was the case for both BC ($p = 0.273$) and NBC situations ($p = 0.545$).

5.3 Use of event conflation

5.3.1 Spanish NSs vs. learner groups

Table 8 below shows the mean and standard deviation values associated to the expression of Path in the main verb in cases of event conflation in NBC and BC situations by the Spanish NSs vs. the learner groups.

Table 8: Use of event conflation in NBC and BC situations by Spanish NS vs. learners groups: Means and Standard Deviations.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean NBC</th>
<th>SD NBC</th>
<th>Mean BC</th>
<th>SD BC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish NSs</td>
<td>10</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>L-Low</td>
<td>22</td>
<td>0.00</td>
<td>0.00</td>
<td>0.23</td>
<td>0.43</td>
</tr>
<tr>
<td>L-Intermediate</td>
<td>19</td>
<td>0.00</td>
<td>0.00</td>
<td>0.32</td>
<td>0.48</td>
</tr>
<tr>
<td>L-Upper intermediate</td>
<td>13</td>
<td>0.08</td>
<td>0.28</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Note: NBC = Non Boundary-crossing; BC = Boundary-crossing; NSs = native speakers; L = learners
A non-parametric Kruskal-Wallis test was again conducted on the data. The results revealed the following: Regarding BC situations, although the critical value is close to borderline ($p = 0.048$), when applying the Bonferroni corrections it descends considerably and does not show significant differences between the groups. The following values were obtained: NS vs. low proficiency group: $p = 0.702$; NS vs. intermediate proficiency group: $p = 0.201$; NS vs. upper intermediate group: $p = 1.000$. In addition, no significant differences were found between the three learner groups (low proficiency vs. intermediate proficiency: $p = 1.000$; low proficiency vs. upper intermediate: $p = 0.525$; intermediate vs. upper intermediate: $p = 0.126$).

As far as NBC situations are concerned, the Kruskal-Wallis showed no significant differences between the Spanish NSs and the three learner groups ($p = 0.270$). It is interesting to note, however, that the Spanish NS group in BC situations and the upper intermediate group in both BC and NBC situations did not show any usage of event conflation in comparison to the low and intermediate groups, who did employ a few examples. The absence of this type of construction in learners with higher level of L2 proficiency (upper intermediate) was also observed in Cadierno (2004) where the informants - Danish learners of L2 Spanish - did not use any event conflation. It seems that this type of compact construction tends to disappear from learner interlanguage as L2 proficiency increases. All examples found in our data involved the description of video number 6, the one with more action depicted, where Mr Bean hits a golf ball that, bounces over a fence, over a bench, over the golf course and into a departing bus. Appendix C compiles the examples of event conflation found in the data.

5.3.2 English NSs vs. learner groups

Table 9 below shows the mean and standard deviation values associated to the expression of Path in the main verb in cases of event conflation in NBC and BC situations by the English NSs vs. the learner groups.

With regard to the comparisons between the English NS and the three group of learners in the use of event conflation, the Kruskal-Wallis test indicates that there are no significant differences both with respect to BC ($p = 0.290$) and NBC motion situations ($p = 0.845$).
5.4 Bidirectional transfer

In relation to the second research question, which asked whether there would be bidirectional transfer from the source to the target language we will sum up what was described more extensively in previous sections. The findings support the existence of bidirectional transfer between the established language and the emerging one and thus, confirm our initial hypothesis. On the one hand, there is direct CLI from the L1 to the L2. As the three groups of learners exhibit less usage of path verbs than the Spanish NSs, they employ adverbials and prepositional phrases functioning as satellites, and they make use of the main verb to conflate more than one trajectory. All these patterns are influenced by their L1, and there is no difference between the three groups of learners, which suggests that the influence of the L1 on the L2 is present from lower to upper intermediate levels of L2 proficiency.

On the other hand, the initial hypothesis regarding CLI from the L2 to the L1 is only partially supported by the results. When comparing learners’ performance in their L1 to that of English NSs, the only case of reverse CLI that we found was the usage of more path verbs in NBC situations by the upper intermediate group. The low intermediate proficiency groups did not display this phenomenon, and neither did the three learner groups when describing BC motion situations. In fact, as presented in Tables 2 and 3, the performance of this group was very similar in their L1 and L2, thus supporting the existence of linguistic convergence also found in Brown and Gullberg (2011) and Brown (2007). This phenomenon could be considered “a way of divergence, since the new category does not fully resemble either the L1 or the L2 mediated category, but is rather a hybrid or amalgam of the two” (Jarvis and Pavlenko 2008:164).

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean NBC</th>
<th>SD NBC</th>
<th>Mean BC</th>
<th>SD BC</th>
</tr>
</thead>
<tbody>
<tr>
<td>English NSs</td>
<td>10</td>
<td>0.00</td>
<td>0.00</td>
<td>0.64</td>
<td>0.67</td>
</tr>
<tr>
<td>L-Low</td>
<td>22</td>
<td>0.05</td>
<td>0.21</td>
<td>0.95</td>
<td>0.72</td>
</tr>
<tr>
<td>L-Intermediate</td>
<td>19</td>
<td>0.05</td>
<td>0.23</td>
<td>0.68</td>
<td>0.48</td>
</tr>
<tr>
<td>L-Upper intermediate</td>
<td>13</td>
<td>0.08</td>
<td>0.28</td>
<td>0.54</td>
<td>0.52</td>
</tr>
</tbody>
</table>

Note: NBC = Non Boundary-crossing; BC = Boundary-crossing; NSs = native speakers; L = learners

Table 9: Use of event conflation in NBC and BC situations by English NS vs. learner groups: Means and Standard Deviations.
5.5 The role of learners’ linguistic proficiency

Regarding the third research question on the role of learners’ linguistic proficiency on the degree of bidirectional transfer, the findings point to the important role that the L1 plays on the L2 throughout the learning process. Our findings show that there is no significant difference between the three groups of learners with respect to the amount of Path expressed in the verb. All learners used fewer path verbs than the Spanish NS group. Our results do not confirm our initial hypothesis that the higher the proficiency of the learners, the less impact their L1 would have on their L2. A plausible explanation for our findings could be that some aspects involved in the acquisition of motion events, i.e. to pay relatively more attention to Path over Manner, are more resistant to be re-organized than others, such as avoiding the use of event conflation. Another possible explanation could be the way learners perceive the L2 in relation to their L1 (cf. Kellerman’s (1978) psychotypology). English has many Latin verbs what might make “that partial overlap between language triggers transfer […] and higher degrees of overlap may lead learners to wrongly assume that the expression of motion in L1 can simply be transferred to L2” (Larrañaga et al. 2012: 12). In contrast, the CLI from the L2 to the L1 seems to be more prominent in higher levels of L2 proficiency. The upper intermediate group started to distance itself from the L1 lexicalization and conceptual patterns, and approached the L2 TFS patterns as they used more path verbs in NBC and less event conflation.

6 Conclusions

The main aim of this study was to examine bidirectional transfer between the L1 and L2 of learners in the semantic component of Path of motion.

With regard to CLI from the L1 to the L2, all three groups of learners turned to their L1 as a starting point to retell motion events in their L2, regardless their level of proficiency: (a) they used less path verbs than the Spanish monolingual group; (b) they employed anomalous structures in Spanish such as the use of manner verbs followed by satellites to indicate Path; (c) they used adverbials and prepositional phrases as “satellizations” in order to express the Path outside the main verb; and (d) they amalgamated different Paths with one main verb. The above findings suggest that the L1 is the base to resort to when talking about motion events in the L2. The participants in the present study have not acquired the target-like L2 motion structures, do not seem to be aware... aware of the typological constraints regarding the expression of BC vs. NBC motion events,
and they do not draw their attention to the more prominent semantic components when expressing themselves in their L2.

This study also sheds light on the influence that the L2 exerts on the L1. Our results showed that in comparison to the other learner groups, the upper intermediate group showed more usage of path verbs in NBC situations when describing motion events in their L1 English. These findings suggest that the higher the L2 proficiency is, the stronger the influence of the L2 on the L1 becomes. That is, for learners with higher L2 competence, a process of L1 rethinking for speaking takes place, indicating that their L1 patterns can change and adapt to new ways of TFS under the influence of a second language. Moreover, the similarity observed in the L1 and L2 expression of path verbs in NBC situations by upper intermediate learners indicates the creation of a linguistic pattern that is different from that of monolingual speakers, and thus provides support for the process of convergence between the learners’ L1 and L2 linguistic systems.

The bidirectional transfer documented here also contributes to the understanding of the interaction between the emergent and the established languages underlying the multi-competent mind. Our results provide further support for the notion that languages are interconnected in the bilingual’s mind and do not thus constitute separate systems as evidenced in the convergence of learner’s L1 and L2 patterns. To know and to use two languages is an altogether different state of mind than to know and to use one language (Cook 2003). Furthermore, if a bilingual is a different speaker than a monolingual, the field of second language acquisition should re-define what a target-like performance in the L2 is. The fact that SLA is based on the comparison of the L2 output and the monolingual output is thus questionable (see also Ortega (2010) for similar reflections).

The conclusions of this study have pedagogical implications. The learning difficulties documented in the present study suggest that the input to which the learners are exposed to may not be enough for them to reorganize their L1 TFS lexicalization and conceptual patterns. Taking part in communicative practices where L2 learners are exposed to the structures of motion events does not seem to be enough for learners to process input and produce output in L2 appropriate ways. In addition, the description of how target languages organize their lexicalization patterns in motion events is not part of any syllabus or of any textbook that we know of. Some suggestions about focus on form as a pedagogical approach to teaching lexicalization patterns can be found in Cadierno (2008) and Muñoz (2017), but further research on the benefits of formal instruction of the motion domain in SLA is needed.
References


Cadierno, Teresa. 2010. Motion in Danish as a second language: Does the learner’s L1 make a difference? In Teresa Cadierno & Zhao Hong (eds.), *Linguistic relativity in second language acquisition: Thinking for speaking*, 1–33. Clevedon, United Kingdom: Multilingual Matters.


Appendixes

Appendix A: Path verbs used by Spanish NS group and learner groups in L2

Spanish NSs NBC: bajar “to go down” (7), ir “to go” (4), llegar “to arrive” (2), aterrizar “to land” (2), salir “to exit” (1), dirigirse “to head to” (1), colarse “to sneak” (1), caer “to fall” (1).

Spanish NSs BC: entrar “to enter” (9), salir “to exit” (6), meterse “to go into” (3),irse “to leave” (3), caer “to fall” (3), dirigirse “to head to” (1), recorrer “to go across” (1), pasar “to pass/to go over” (1).

Low proficiency BC: entrar “to enter” (24), ir “to go” (19), caer “to fall” (10), salir “to exit” (9), llegar “to arrive” (3), venir “to come” (1), pasar “to pass/to go over” (1), abandonar “to leave” (1).

Low proficiency NBC: ir “to go” (21), llegar “to arrive” (7), caer “to fall” (3), salir “to exit” (2), subir “to go up” (2), volver “to come back” (2), venir “to come” (1), escapar “to escape” (1), entrar “to enter” (1), cruzar “to cross” (1).

Intermediate BC: entrar “to enter” (18), ir “to go” (15), caer(se) “to fall” (14), salir “to exit” (11), dejar “to leave” (2), pasar “to pass” (2).

Intermediate NBC: caer “to fall” (8), ir “to go” (6), bajar “to go down” (5), descender “to descend” (3), salir “to exit” (2), pasar “to pass” (1), cruzar “to cross” (1).

3 Neologism transferred from their L1 “to exit”
cross" (1), *entrar* “to enter” (1), *subir* “to go up” (1), *desembarcar* “to unship” (1), *llegar* “to arrive” (1).

Upper Intermediate BC: *entrar* “to enter” (25), *caer* “to fall” (10), *ir* “to go” (9), *salir* “to leave” (6), *pasar* “to pass” (4), *bajar* “to go down” (2), *arribar* “to arrive” (2), *cruzar* “to cross” (2).

Upper Intermediate NBC: *bajar* “to go down” (12), *pasar* “to pass” (3), *ir* “to go” (3), *atterrizar* “to land” (2), *caer* “to fall” (2), *llegar* “to arrive” (1), *entrar* “to enter” (1), *subir* “to go up” (1).

### Appendix B: Path verbs used by English NS group and learner groups in L1

**English NSs NBC:** *fall* (3), *land* (1), *descend* (1).

**English NSs BC:** *go* (12), *fall* (10), *land* (4), *enter* (1).

**Low proficiency NBC:** *land* (8), *fall* (5), *go* (2), *return* (1), *come* (1), *exit* (1), *arrive* (1), *cross* (1)


**Intermediate BC:** *go* (18), *fall* (15), *enter* (10), *leave* (5), *land* (4), *exit* (1), *drop* (1)


**Upper Intermediate BC:** *enter* (12), *fall* (12), *go* (7), *leave* (2), *land* (1), *reach* (1)

### Appendix C: Examples with event conflation: Low and Intermediate groups

(2) Low proficiency group:
a. *La pelota fue encima de la valla en la dirección del calle, al lado del banco y en el autobús.*
   “the ball went up the fence in the Street direction, next to the bench and into the bus”

b. *La pelota fue afuera del campo, arriba una valla y en un autobús.*
   “the ball went out the golf course, up the fence and into the bus”

c. *La pelota fuiste over la valla, over el banco y into de autobús.*
   “the ball went over the fence, over the bench and into the bus”

d. *La pelota va a muchos lugares, como la valla, el banco y finalmente en el autobús.*
   “the ball goes to many places, such as the fence, the bench and into the bus”

e. *La pelota fue debajo de la valla, el banco y adentro el autobús.*
   “the ball goes under the fence, the bench and inside the bus”

(3) Intermediate proficiency group:

a. *La pelota está rebotando en el banco, la valla y en el bus.*
   “the ball is bouncing on the bench, the fence and into the bus”

b. *La pelota salta sobre el banco encima de la valla y en el autobús.*
   “the ball jumps over the bench, on the fence and into the bus”

c. *La pelota viaja por el aire, over una valla y un banco.*
   “the ball travels by air, over the fence and on a bench”

d. *La pelota va sobre la valla y en el autobús.*
   “the ball goes over the fence and into the bus”

e. *La pelota fue cerca de la parque, sobre un banco y una valla y en un autobús.*
   “the ball goes near the park, over the bench, a fence and into a bus”

f. *La pelota pasa por una valla, un banco y en el autobús.*
   “the ball passes by a fence, a bench and into the bus”