Expressing Motion Events in a Third Language: A Study of Chinese Learners of Spanish

Celia Bravo Díaz

1. Introduction

In the last two decades, the field of spatial conceptualization and expression of motion events has given rise to a novel area of analysis in first and second language acquisition. But while certain studies have explored how lexicalization patterns in the L1 affect the selection and organization of information describing motion events in the L2, little empirical evidence is available on such phenomenon in the acquisition of a third language. The present study proposes to address this gap, taking Talmy and Slobin’s language typology (1985, 2000) and the Thinking for Speaking Hypothesis (TFS) (Slobin, 1987) in order to examine the interaction between lexicalization patterns in Chinese (L1) and English (L2) in the expression of motion in Spanish (L3).

According to the TFS hypothesis, throughout L1 acquisition speakers learn to direct their attention to those aspects of reality more readily codified in the language, thus developing specific lexicalization patterns. This hypothesis has led different researchers (Brown, 2015; Brown & Gullberg, 2008; Cadierno, 2004, 2008, 2010; Choi & Lantolf, 2008; Wu, 2011) to investigate if L2 speakers develop TFS patterns that resemble those of native speakers of the L2. As Jarvis (2000) points out, one challenge for studies in support of a transfer of TFS patterns from the L1 to the L2 lies in the difficulty of distinguishing between the influence of the L1, on the one hand, and the natural development of interlanguage on the other. Several studies have shown that the languages of multilingual speakers are interconnected (De Bot, 2004; Schonpflug, 2000) and that the L2 is activated to different degrees in the acquisition of an L3 (Sánchez, 2015). Nevertheless, we have scant empirical evidence describing the influence of the L1 and L2 in the acquisition of an L3, and how this process is different from the acquisition of an L2 (Cenoz, 2003; De Angelis, 2005, 2007; Rothman et al 2011). This area of inquiry has been especially neglected for Spanish, a language commonly acquired as an L3 after L2 English. The present study incorporates data from three languages, comparing L3 Spanish production from speakers at two L3 proficiency levels that share the same L1 and L2. Inter-group and in-between group comparisons allow us to distinguish if the L3 patterns are primarily a consequence of transfer from the L1 or if they reflect developmental stages corresponding to different proficiency levels.

2. Motion events and the Thinking for Speaking hypothesis

Research focusing on the relation between language and thought encompasses two perspectives. The first (Whorf, 1956) is based on the Linguistic Relativity Principle. Under this perspective, while language does not determine thought, it has an influence on certain cognitive processes. For this reason, different linguistic structures lead speakers of different languages to evaluate the world differently through processes such as categorization. The second alternative is represented by the work of Slobin and his Thinking for Speaking hypothesis. Under this hypothesis, speakers of different languages direct their attention to different elements of reality and select those aspects that are most easily codified in the language, which the author describes as conceptualization. Slobin distances himself from the idea that nonlinguistic cognitive processes are intimately linked to the structure of language, suggesting instead that this linguistic influence in the conceptualization of experience takes place only when this experience is mediated by the language (Slobin, 1996). One instance of this is

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lexicalization of motion events, which according to previous empirical studies display significant differences among languages (Berman & Slobin, 1994; Naigles et al, 1998).

Motion events, or situations that involve a change in the spatial configuration of an entity, are one of the most basic and pervasive experiences of human life (Johnson, 1987). Movement plays an important role in cognition and organization of the linguistic system, and for this reason, its conceptualization and lexicalization are relevant in the field of cognitive linguistics. A motion event contains the following semantic components, whose distribution differs among languages:

a) Figure: the moving entity  
b) Base: the entity with respect to which the figure is moving (it can refer to the point of departure, the means, or the goal of the movement)  
c) Direction or trajectory: the path that the figure follows with respect to the base  
d) Movement: the fact that an entity is changing its position

These elements can be identified in the following sentence from the study:

(1) The family (figure) went (movement) into (direction) the restaurant (base)

A motion event can also include two external components, namely e) manner (the way in which the movement occurs) and f) cause (the reason of the movement), as shown in (2) and (3):

(2) The frog jumped (manner) into the instrument
(3) The lady pushed (cause) the frog away

Within motion events, there is a distinction between verbs of contained movement and those of translational movement. The former do not involve movement of the entity to a different point in space (“The musician shook the instrument”). The latter (and focus of the present study) indicate movement through space of the whole entity (“The instrument fell on the floor”). Translational movement presents a very demarcated structure whose components are distributed differently among languages, offering a rich scenario for interlanguage comparisons.

In his studies on lexicalization patterns, Talmy (1985, 1991, 2000) describes lexicalization as the process through which a semantic component is associated with a specific morpheme. Depending on how the component of direction is primarily codified in the language, Talmy (1985, 1991) classified the languages as verb-framed (VF), if they codify the direction in the main verb and the manner through gerunds, adverbs or prepositional sentences, or satellite-framed (SF), if they codify the direction through satellites and the manner or cause on the main verb. As part of the first group we can mention romance languages such as Spanish, Italian, French and other languages like Japanese; as part of the second group, we find English, Chinese and Danish. These are two representative examples of Spanish and English taken from Slobin 2004:

(4) The owl flew out of the tree.
(5) El búho salió volando del árbol.
   “The owl exited the tree flying”

In (4), the movement of the figure is expressed through the verb to fly, in which manner and movement conflate. The trajectory of the figure with respect to the base is codified through the prepositions out and of. Sentence (5) reflects a structure characteristic of a VF language, in which manner and movement are not codified in the same verb: the main verb expresses movement and direction, while manner, the dispensable element, is codified through the gerund volando (flying). The boundary-crossing constraint (Aske, 1989) partially explains that S-framed languages contain more Manner of Motion verbs than V-framed languages. While in S-framed languages such as English, the conflation between Motion and Manner can occur in boundary and non-boundary-crossing situations, VF languages like Spanish only allow for the manner to be codified in the main verb if the direction does not involve boundary-crossing, as in él caminó hasta la estación (he walked to the station, meaning that he did not enter the station). If boundary-crossing is involved, manner is codified in a separate
constituent such as él entró en la estación caminando (he entered the station walking) and not *él caminó en la estación. The only documented exception are punctual actions with vertical-boundary crossing, such as zambullirse (plunge), which can occur with boundary-crossing events in V-framed languages (Naigles et al., 1998).

Clearly, these patterns are not categorical, as there are verbs in English that codify direction (the sentence “the car went barreling into the crowd” is equally as acceptable as “the car barreled into the crowd”) and in Spanish it is possible to codify manner in the main verb (el hombre zizgagueó de un extremo a otro de la calle, “the man zigzagged from one side of the street to the other”). Nevertheless, they have been found to be statistically recurrent in investigations such as Strömqvist and Verhoeven (2004), which analyzes the lexicalization of motion in 72 languages through the narrations from the Frog Stories series. The present study assumes that there exist common patterns, also known in the literature as lexicalization biases.

The dichotomy proposed by Talmy has been the target of debate on the classification of languages such as Chinese, in which direction and manner are expressed through syntactically equivalent grammatical forms. Slobin (2004) classifies Chinese as equipollently-framed language (EF), and this classification is supported by later studies (Chen, 2005; Chen & Guo, 2010). This example in Chinese, taken from Slobin (2004), describes a scene in which an owl is flying out of a tree:

(6) 一只猫头鹰飞出来 (yī zhī māo tóu yīng fēi chū lái, “an owl flies [manner] exits [direction] comes [deictic]).

These three verbs (to fly, to leave and to come) can be used independently and are syntactically similar.

3. Motion events in foreign language acquisition

Building on Talmy’s typology and Slobin’s (2004) TFS hypothesis, researchers in SLA have questioned the ways in which typological differences between languages affect learners’ expression of movement, and whether it is possible for these learners to adopt L2 TFS patterns (e.g. Brown & Gullberg, 2010; Bylund & Jarvis, 2011; Wu, 2011). To present, the results of these studies have been diverse and, on occasion, contradictory (even for the same language combinations). Some studies (Park, 2008; Cadierno, 2010; Wu, 2011) have shown the influence of L1 conceptual categories in the expression of movement events in L2 production. Wu (2011) examined the expression of direction in Mandarin by L1 English speakers, observing that advanced learners transferred their conceptualization of serial verb events from English to Chinese. This was shown by these speakers’ use of several consecutive verbs of direction in order to indicate a change in the trajectory of an object, which is not acceptable in Chinese. To illustrate the influence of English lexicalization patterns, Wu (2011) offers the following example narration of a scene in which a boy falls off of a cliff and into a stream: *

小男掉下进来 (xiǎo nán hái diào xià jìn lái, “small boy falls down enter come”) (p. 442)

Other studies have shown contrasting trends for the lexicalization of direction and base. Examining L1 Danish-L2 Spanish learners’ written descriptions from the book Frog, where are you?, Cadierno’s (2004) participants, despite making use of certain redundant post-verbal constructions and specifications of the base (L1 transfer), were shown not to transfer manner and direction codifications in the same verbs, as occurs in Danish. In a similar vein, Cadierno and Ruiz (2006) demonstrated how L1 Italian (a VF language) and L1 Danish (an SV language) speakers displayed similar patterns when speaking in L2 Spanish (showing no apparent effect from the L1 Danish SV typology, as might be expected). Contrary to what might be expected, the two groups did not differ significantly in the encoding of manner and path information. Navarro and Nicoladis (2006) investigated transfers in lexicalization of direction for advanced L2 Spanish speakers, with English as L1, in a video narration task. Participants were reported as coding for direction through the use of post-verbal constructions typical of satellite languages. The authors concluded that while these learners acquired the lexical aspect of Spanish typology, they still had not acquired the syntactic aspect.

These studies, taken together, demonstrate the possibility that the process of TFS from the L1 has a very limited effect in the L2 of advanced learners, and that such patterns will more likely be present in the discourse of lower- and intermediate-level learners (Cadierno & Ruiz, 2006). Nevertheless, it is
important to note that these studies have classified second and foreign language use as “L2” regardless of whether the language in question was in fact a third language (L3) or if speakers possessed an L3 at all. By the same token, these studies have also not taken into account the speakers’ language of habitual use, to be addressed in the present study.

The relationship between lexicalization patterns and the proficiency level of L2 language has not been as researched to the same extent as the effect of the typology of the patterns in each language. Nevertheless, the previous studies would appear to indicate that as speakers’ L2 level increases, they adapt more to the lexicalization patterns that are most common to the L2, even if these levels still do not approximate those of control groups (Cadierno & Ruiz, 2006; Navarro & Nicoladis, 2005; Stam, 2006). One exception to this is Lantolf (2008), in which a preference was found for speakers to retain L1 TFS patterns even at advanced levels of proficiency. One limit of all of these studies, though, is that they have not included any reference to the context of L2 learning, nor to the level of socialization of the learners. Given that the lexicalization of movement events is typically acquired implicitly and not addressed explicitly in the classroom, this factor may be crucial.

4. Methodology

The object of this investigation is to examine the lexicalization patterns in L3 Spanish as produced by speakers whose L1 is Mandarin Chinese and whose L2 is English. This will include the semantic components of manner, direction, and base in descriptions of motion events. The research questions are as follows:

1. Do these learners code more frequently for manner or direction in these narrations? How often do they specify base?
2. Do the lexicalization patterns of intermediate and advanced L3 Spanish speakers differ? In other words, do the lexicalization patterns reference a developmental stages effect?
3. If these speakers’ lexicalization patterns in L3 Spanish differ from L1 Spanish norms, is this due to a transfer from L1 Chinese or L2 English?

4.1. Participants

The data were collected from 16 university students of Chinese origin, with ages ranging from 19 to 26. All participants are L1 Mandarin Chinese, with English as L2. Spanish was L3 for all participants, who likewise were all enrolled in Spanish language coursework at the time of study. At the time of participation, eight of the participants were lifelong residents of China (3 advanced, 5 intermediate), while the remaining eight had been living in the United States for three years (3 advanced, 5 intermediate). Previous studies (Spring & Horie, 2013) have shown place of residence and habitual language to be important factors for TFS, and so they were included in this analysis. As habitual language coincided with place of residence for all participants, this was combined into one variable (place of residence). Levels of proficiency in Spanish resulted in classifications of intermediate for ten participants and advanced for six. A control group was also included, consisting of one monolingual Spanish speakers (NSsp), one monolingual English speaker (NSen), and a monolingual Chinese speaker (NSch), with ages ranging from 22 to 25.

4.2. Materials and procedure

Participant data for this study consist of a linguistic survey, a proficiency interview and two tasks. Participants met with the investigator either in person or online (through video conferences). The interview and the tasks were audio recorded. The linguistic interviews were conducted by the researcher following the guidelines of the Oral Proficiency Interview (ACTFL, 2012) and served to gain an assessment of participants’ range of proficiency, as well as to gather additional information on participants’ linguistic background.

The first task of the study was an image-based narration. As in previous studies (e.g., Berman & Slobin, 1994; Chen, 2005; Cadierno & Ruiz, 2006), the children’s book Frog Goes to Dinner (Mayer, 1974) was used for this. This book was chosen both for its descriptive- and motion-rich content and for
ease of comparison with previous studies. This book does not have any words and contains twenty-six 
images that capture various types of movement (e.g., entering, exiting, jumping, falling).

The second task asked participants to describe nine images depicting movement, both of a single 
entity (e.g., a deer crossing a river) as well as initiated by another (e.g., a child pushing a wheel). The 
selection of particular images was controlled so as to permit the codification of verbs for both direction 
and manner.

4.3. Analysis

Both the narration and description tasks were analyzed jointly, with the first objective being to 
observe possible differences in the number of clauses and verb types produced by intermediate and 
advanced L3 Spanish groups and to detect any differences relating to proficiency that may be relevant. 
After transcribing the data, verbs used in motion event descriptions were extracted, before being 
further separated according to whether or not they indicated translational movement (change in the 
location of an entity). These were classified as (1) verbs of displacement (2) verbs of manner, and (3) 
verbs of change of position, in accordance with the methodology of Cifuentes (1999). Verbs of 
displacement indicate direction and may be accompanied by complement of place that indicates base 
(e.g., “to arrive to the restaurant”). Verbs of manner indicate the way in which movement is produced 
(e.g., to run, to swim, etc), and can similarly codify direction for telic events (e.g., “to jump toward the 
table”) or location for atelic events (e.g., “to jump onto the table”). Finally, verbs indicating a change 
in position (e.g., “to capture,” “to put”) do not indicate direction of movement, nor do they highlight 
figure displacement. Instead, they show the final position of the figure, and may be accompanied by 
complement of position (e.g., “to hide in the trombone”). Finally, the total number of prepositional 
syntagma with base specification were quantified.

The average frequency of verbs of manner, direction, position, and specication of base was 
calculated according to proficiency and place of residence of the participants, as well as the standard 
deviations. A non-parametric test was used to determine if the difference in means across groups was 
significant despite the variation between subjects of the same group. Three two-factor analyses of 
variance (ANOVA) were carried out for the data with a Greenhouse-Geisser correction in order to 
determine if there was a significant relation between the independent variables (place of residence and 
level of Spanish) and the dependent variable in each case (verbs of manner, direction, and presence of 
base). These results underwent two post-hoc corrections in the form of a Bonferroni test and a Tukey 
test.

5. Results

A total of 1,263 clauses were obtained across all participant groups for the elicitation tasks. The 
advanced group produced a total of 392 clauses, of which 146 contained movement and of which 127 
contained translational movement (implying movement of an entity across a surface). In the 
intermediate level narrations there were 667 clauses, of which 175 contained movement and 147 
contained translational movement. Table 1 displays the average numbers of these clause types as 
produced by these L3 groups, along with the total number of clauses, movement clauses, and 
translational movement clauses produced by the control group speakers. The tasks were effective in 
obtaining the type of constructions sought, both in the learner and control groups. While the two 
learner groups barely differed with respect to the total number of clauses in narrations, the advanced 
group displayed a slightly higher average of movement clauses (24.3 compared to 17.7). The same 
pattern is found in the average number of clauses containing translational movement. Among control 
groups the data show similar numbers of clauses. As in previous studies (Wu, 2016), the native 
speaker of Mandarin makes greater use of movement clauses compared to the other two control 
groups.
### Table 1

Movement clause means and standard deviations

<table>
<thead>
<tr>
<th>Learners</th>
<th>Control group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intermediate</td>
</tr>
<tr>
<td>Nº clauses</td>
<td>66.7</td>
</tr>
<tr>
<td>SD=8.9</td>
<td></td>
</tr>
<tr>
<td>Nº movement clauses</td>
<td>17.7</td>
</tr>
<tr>
<td>SD=3.3</td>
<td></td>
</tr>
<tr>
<td>Nº translational</td>
<td>14.7</td>
</tr>
<tr>
<td>movement clauses</td>
<td>SD=4</td>
</tr>
</tbody>
</table>

Table 2 displays participants’ distribution of verbs of manner, direction, and position, as well as the syntagma that make reference to the base (these results are also found in Figure 1). The native Spanish speaker registers a low number of verbs of manner (13.9%), tending to instead codify the direction of the main verb in 67.9% of tokens through verbs of direction such as “subir” (“to go up”), “bajar” (“to go down”), or “salir” (“to exit”). When this speaker includes manner of the movement together with the verb of direction, this is done through use of a gerund or a prepositional syntagma, as is the case in the following excerpt:

(7) *La rana sale* [direction] *con sus brazos abiertos* [manner] *y cae* [direction] *dentro de la copa de vino* [base] *de la otra pareja*. *Se inclina* [manner] *y le da un besito en la nariz al señor*. (NSsp)

*The frog leaves* [direction] *with his arms open* [manner] *and he falls* [direction] *inside of the other partner’s cup of wine* [base]. *He leans in* [manner] *and gives a kiss on the nose to the man*. (NSsp)

The specification of the base in the native Spanish narration is not as prominent as in the case of the native English and Mandarin narrations; the speaker tends to only make reference to the point of destination, ignoring the point of departure. On the other hand, the native English speaker displays a higher percentage of verbs of manner (e.g., fly, hop, jog, walk), tending to codify the direction through the use of prepositions (e.g., jump *out/into*) and to include the base more frequently. This is shown in the following example:

(8) *As the family was ordering, the frog jumped* [manner] *out* [direction] *of the boy’s pocket* [base] *and into* [direction] *one of the musicians’ saxophone* [base]. *The frog fell* [direction] *out of the saxophone* [base] *and onto the musician’s head* [base]. *But the frog quickly jumped* [manner] *away* [direction] *and he hopped* [manner] *right into* [direction] *a salad* [base]. (NSen).

With respect to the lexicalization patterns of the native Chinese speaker, we see a higher percentage of verbs of movement than for the other two native speakers, with narrations that are characterized by the presence of serial verb constructions. The number of verbs of manner (50.8) is higher than those produced by the native English speaker, and the same is true for the verbs of direction (44). These are in line with levels of verbs of manner and verbs of direction found for native Chinese speakers by Wu (2016). From a total of 547 verbs of movement produced by Chinese speakers, Wu identified 69% as verbs that codified manner and 19% as verbs that codified direction. As Figure 1 shows, the percentage of specification of base for the native Chinese speaker is much higher than the rest of the groups (95%). Sample sentences (9) and (10) display excerpts from this speaker:

(9) 突然小青蛙奔跑着闯进了口袋(NSChin)

*Tùrán xiǎo wānguǐ bēnpǎo chǔn jìn le kǒudài*

“Suddenly the little frog run [manner] ASP hurry to enter [direction] ASP pocket [base]”

“Suddenly the little frog ran into the pocket”
(10) 他们走 进 饭 馆 去 (NSchin)

Tāmen zou jin fānguǎn qù
“They walk [manner] enter [direction] restaurant [base] go [deictic]”
“They walk into the restaurant”

The main verb in (10) is “zou,” to walk. “Jin” (to enter), and “qu” (to go) function as directional complements. Through use of the last deictic, the speaker is positioned outside of the restaurant, together with the people being described.

In conclusion, the analysis of the productions of the control groups appears to support Slobin’s (1996) hypothesis which states that the form and content of these descriptions are influenced in large part by the lexicalization patterns characteristic of each language.

Table 2
Average frequency of verbs of manner, direction, position, and specification of base by proficiency

<table>
<thead>
<tr>
<th>Learners</th>
<th>Intermediate</th>
<th>Advanced</th>
<th>Chinese</th>
<th>English</th>
<th>Spanish</th>
</tr>
</thead>
<tbody>
<tr>
<td>%Verbs of manner</td>
<td>42.6</td>
<td>51.8</td>
<td>50.8</td>
<td>42.8</td>
<td>13.9</td>
</tr>
<tr>
<td>SD = 14.4</td>
<td>SD = 11.7</td>
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<tr>
<td>%Verbs of direction</td>
<td>42.5</td>
<td>39</td>
<td>44</td>
<td>35.7</td>
<td>69.7</td>
</tr>
<tr>
<td>SD = 18.8</td>
<td>SD = 14.8</td>
<td></td>
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</tr>
<tr>
<td>%Verbs of position</td>
<td>15.2</td>
<td>11</td>
<td>5</td>
<td>14.2</td>
<td>13.9</td>
</tr>
<tr>
<td>SD = 14.9</td>
<td>SD = 7.3</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>%Specification of base</td>
<td>56.7</td>
<td>52.4</td>
<td>95</td>
<td>70</td>
<td>62</td>
</tr>
<tr>
<td>SD = 13.9</td>
<td>SD = 23.4</td>
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</table>

Figure 1. Distribution of direction, manner, and base for control groups

The group of advanced learners produced a total of 150 verbs of movement, with an average of 25 verbs per speaker and a standard deviation of 4.9. Of these, 79 were verbs of manner ($M = 13.1; SD = 4.7$), 59 were verbs of direction ($M = 9.8; SD = 4.3$), and 15 were verbs of position ($M = 2.5; SD = 1.5$). Base was specified in 74 occasions, with an average of 12.3 and a $SD$ of 4.8. The group of intermediate students produced a total of 181 verbs of movement, with an average of 18.1 verbs per speaker and a standard deviation of 3.7. Altogether, 77 verbs of manner ($M = 7.7; SD = 2.7$), 78 verbs of direction ($M = 7.8; SD = 4$), and 26 verbs of position ($M = 2.6; SD = 2.7$) were calculated. The base was lexicalized through prepositional syntagma in 104 occasions ($M = 10.4, SD = 3.7$).

Table 2 shows the frequency of verbs of manner and direction in relation to the total number of motion verbs used by each speaker, grouped by proficiency, along with the frequency of prepositional
phrases specifying base in relation to the total number of phrases that allowed for such specification. The percentages of direction, manner and base (Table 2) reveal hardly any differences between the lexicalization of intermediate learners (42.6 verbs of manner, 42.5 verbs of direction, and 56.7 specifications of base) and advanced learners (52.3, 39, and 52.4, respectively).

Greater contrasts were found for the variable “place of residence,” along with generally lower standard deviations. Table 3 and Figure 2 show that, in the Spanish descriptions from the learners with USA residency, the verbs of manner (56% of the total verbs of movement) are more common than those of direction (26.16%). This tendency coincides with what was found for the descriptions given by the native English control group (manner = 42.8%; direction = 35.7%) and also for the native Chinese control group (manner = 50.8%; direction = 44%). With respect to the indication of base, the learner group with USA residency includes this component in 40% of all occasions, placing them between L1 English speakers (70%) and L1 Spanish speakers (62%). This contrasts with the 95% of occurrences found for this dimension for the L1 Chinese speakers.

The Spanish learners with China residency present a notably high frequency of verbs of direction ($M = 56.3$), followed by verbs of manner ($M = 36$). A non-parametric analysis for difference in means (Welch test for distinct variance) was carried out that adjusted for the reduced size of the sample and the lack of a normal distribution. This test brought forth the following results: the difference in means in both groups, according to language of habitual use, was significant with respect to the verbs of manner ($t = 4.27, p < .01$), as was that of the verbs of direction ($t = 8.5, p < 0.01$) and the difference between the specification of the base ($t = 7.44, p < .001$).

<table>
<thead>
<tr>
<th>Learners</th>
<th>USA</th>
<th>China</th>
<th>Control Group</th>
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<td>Spanish</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Verbs of manner (%)</td>
<td>56</td>
<td>36</td>
<td>50.8</td>
</tr>
<tr>
<td>$SD = 10.3$</td>
<td>$SD = 8.4$</td>
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<tr>
<td>Verbs of direction (%)</td>
<td>26.16</td>
<td>56.3</td>
<td>44</td>
</tr>
<tr>
<td>$SD = 6.9$</td>
<td>$SD = 7.1$</td>
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<tr>
<td>Verbs of position (%)</td>
<td>18.5</td>
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<td>5</td>
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<tr>
<td>$SD = 15.2$</td>
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<tr>
<td>Specification of base (%)</td>
<td>40</td>
<td>70.22</td>
<td>95</td>
</tr>
<tr>
<td>$SD = 8.2$</td>
<td>$SD = 8$</td>
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</table>
Three analyses of variance (ANOVA) were carried out that examined, simultaneously, the effects of the two sources of variation (level of proficiency and place of residence/language of habitual use) on the three dependent variables under analysis. Table 4 displays the results obtained for the variable “manner,” while Table 5 displays those that correspond to “direction,” and Table 6 displays those of “base.”

Table 4
Two-factor ANOVA for the variable “manner” with adjusted p-value

<table>
<thead>
<tr>
<th>Factors</th>
<th>Df</th>
<th>Sum Sq</th>
<th>Mean Sq</th>
<th>F value</th>
<th>Pr (&gt;F)</th>
<th>Post-hoc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>1</td>
<td>313.05</td>
<td>313.05</td>
<td>4.3446</td>
<td>0.0574174</td>
<td></td>
</tr>
<tr>
<td>Residence</td>
<td>1</td>
<td>1634.18</td>
<td>1634.18</td>
<td>22.6799</td>
<td>0.0003711</td>
<td>USA &gt; China</td>
</tr>
</tbody>
</table>

The ANOVA table 4 shows a highly significant effect ($p < .001$) for the factor “residence” out of the total verbs of manner produced, as well as a lack of significant effect for the factor “level of proficiency ($>.05$). The post-hoc tests indicate a high t-value ($t = 4.762$), along with a significant difference once the p-value is adjusted. The Tukey test indicates that the number of verbs of manner that were produced in the Chinese student group with English as the habitual language is superior to those with Chinese as the language of habitual use.

The component “direction” (Table 5) also yielded significant results. This time, the speakers with Chinese as habitual language codified direction with greater frequency ($t = -8.5$, $p < 0.01$). Lastly, Table 6 shows that the effect of habitual language is also significant in the frequency of the specification of base (origin and destination) for the movement, with a greater frequency for learners who reside in China ($p < .01$; $t = 7.4$).

Table 5
Two-factor ANOVA for “direction” with adjusted p-value

<table>
<thead>
<tr>
<th>Factors</th>
<th>Df</th>
<th>Sum Sq</th>
<th>Mean Sq</th>
<th>F value</th>
<th>Pr (&gt;F)</th>
<th>Post-hoc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>1</td>
<td>44.5</td>
<td>44.5</td>
<td>0.8853</td>
<td>0.3639</td>
<td></td>
</tr>
<tr>
<td>Residence</td>
<td>1</td>
<td>3636.1</td>
<td>3636.1</td>
<td>72.26</td>
<td>0.000001</td>
<td>China &gt; USA</td>
</tr>
</tbody>
</table>
### Table 6
**Two-factor ANOVA for “base” with adjusted p-value**

| Factors   | Df | Sum Sq | Mean Sq | F value | Pr (>|F|) | Post-hoc       |
|-----------|----|--------|---------|---------|----------|---------------|
| Level     | 1  | 71.0   | 71.0    | 1.08    | 0.317    |               |
| Residence | 1  | 3651.2 | 3651.2  | 55.723  | 0.000004 | China>USA     |

### 5.1 Manner of movement

This section will offer an analysis of certain fragments that illustrate the most frequent lexicalization patterns found in each group’s descriptions. In contrast to what was expected according to Spanish TFS patterns (as well as the speech patterns for the native Spanish speaker in this study), none of the learner groups tends to codify manner of movement through use of the gerund (e.g., *se marchó brincando*, “he hopped away”), adverbs (e.g., *se fue rápidamente*, “he left quickly”), or prepositional syntagma (e.g., *se marchó de un salto*, “he left in a jump”). When codifying manner, learners usually did this in the main verb, to which they would add prepositions in order to indicate direction. The following examples, taken from the image description task, show this tendency of satellite languages:

(11) *Quiere tirar el avión fuera de la ventana* (P1, USA, advanced)

“He wants to throw the plane out the window”

(12) *Empuja el carro para arriba* (P7, USA, advanced)

“He pushes the cart upward”

The verbs *tirar* (“to pull”) and *empujar* (“to push”) encompass the semantic component of manner, with the direction being indicated by the satellites *fuera de* (“out of”) and *para arriba* (“up”). The preferred TFS characteristic in English is also clearly present in the story narrations from *Frog goes to dinner* for the learner group whose habitual language is English:

(13) *El niño camina [manner] fuera [direction] de la casa con sus padres, parece muy contento y dice ¡adiós! a los otros animales... están bastante deprimidos* (P4, USA, intermediate)

“The boy walks [manner] out [direction] of the house with his parents, he seems happy and he says goodbye to the other animals... they’re very sad.”

(14) *La familia están comiendo y la rana vuela [manner] en [direction] la trompeta [base]* (P8, USA, intermediate)

“The family is eating and the frog flies [manner] in [direction] the trumpet [base]”

In fragment (13), the learner tries to codify the direction in a satellite (*fuera*, “out”) just as would be done in English, instead of the verb-framed Spanish expression *sale caminando de la casa* (“exits the house by walking”). English utilizes the preposition “into” to indicate the trajectory taken by the frog entering the trumpet, implying the crossing of a boundary. In Spanish the preposition *en* does not indicate such a trajectory, meaning that the sentence *la rana vuela en la trompeta* means that the frog is flying around inside the instrument. In this context, *en* would be equivalent to “inside” in English, and it is for this reason that the preferred structure for Spanish speakers would be either to use a verb such as *meterse* (“to put oneself into”) and to follow it with a prepositional syntagma indicating manner (*se metió en la trompeta volando*, “he put himself in the trumpet by flying”) or a preposition such as *a* or *hacia* (*la rana vuel"a hacia la trompeta* “the frog flies toward the trumpet”).

The speakers in the learner group residing in the US appear to have acquired lexicalization patterns from English and transferred the TFS from their L2 to their descriptions in their L3 Spanish. Still, future studies should examine these speakers’ English production in order to more fully confirm this. With respect to the group residing in China, verbs of manner tend to be accompanied by verbs of direction, something which could be owed to transfer of serial structures characteristic of Chinese, or which could be a strategy on the part of the speaker to segment the movement event and simplify the narration, as displayed in (15):
Y después el rana salta [manner] y va a [direction] la bebida (P11, intermediate)
“And then the frog jumps [manner] and goes to [direction] the drink”

5.2. Direction and base

As has been shown, verbs of direction are most frequent for speakers whose habitual language is Chinese, who tend to include them with verbs of manner. While it could be argued that the proportions of verbs of direction for these speakers approximates Spanish TFS, one trade that differentiates them is their use of deictic verbs such as “ir” (to go) and “venir” (to come). In fact, manner+direction (+deictic) motion event descriptions, the most common construction in Mandarin Chinese (Wu, 2016), are favored by this group, as shown in example 11. Regarding the base, occurrences for the group with Chinese residency were higher than those for the other learner group.

De repente, la rana salta [manner] del bolsillo [base 1] y viene [direction-deictic] hacia el saxofonista [base 2] (P14, advanced)
“Suddenly, the frog jumps [manner] from the pocket [base 1] and comes [direction-deictic] towards the saxophonist [base 3]”

6. Discussion

The speakers in the learner group residing in the US appear to have acquired lexicalization patterns from English and transferred the TFS from their L2 to their descriptions in their L3 Spanish, as shown by their tendency to lexicalize manner in the main verb and direction through propositional syntagma or satellites in both proficiency levels of Spanish. With respect to the learners residing in China, the high frequency of the specification of base reflects patterns of TFS in Mandarin. The use of verbs of manner accompanied by verbs of direction could be owed to transfer of serial structures characteristic of Chinese, or which could be a strategy on the part of the speaker to segment the movement event and simplify the narration. Even for more advanced Spanish learners, the participants’ descriptions in Spanish did not include key components typical of that language such as the use of gerunds to indicate manner or verbs of direction for boundary-crossing events. In other words, the most relevant factor was not the level of L3 proficiency but rather, the language of habitual use. This contrasts to what might be expected based on previous studies of different proficiencies sharing an L1 (Cadierno & Lund, 2004; Cadierno & Ruiz, 2006). Still, future studies should examine these speakers’ English production in order to more fully confirm this. The fact that these lexicalization tendencies are not categorical for each language, and that they do not necessarily cause any problem in communication could explain why they are not acquired fully even at advanced levels.

If acquisition of the SF patterns in English for the learners with USA residency has taken place after a prolonged period of immersion, it should not be surprising that these groups (who lacked such immersion experience for Spanish) did not present lexicalization patterns typical of Spanish in their descriptions of movement. The contrasts in lexicalization patterns under focus in the present study tend not to be addressed explicitly in the L2 classroom, leaving learners to develop these forms on their own, implicitly. In an analysis of the input received by children during L1 acquisition, Saffran (2003) observed a high frequency of movement verbs, and it stands to reason that L2 learners in an immersion context are exposed to similar patterns. As shown by Treffers-Daller and Calude (2015), this time of exposure, along with frequency of input, is critical for the gradual restructuring of lexicalization patterns that result in the acquisition of motion event construal in a second language. Studies such as Song et al. (2016) lend support to such a centrality of prolonged time of linguistic immersion in the acquisition of unfamiliar TFS patterns. Though, in Song et al. (2016), time of immersion was only significant for number of verbs of direction used to describe boundary-crossing events, participants in that study had only spent one semester abroad. We can reasonably expect that, for meaningful change in this area, more time of immersion is required, as was the case for the L1 Chinese speakers in the present study who were living in the United States and used English habitually.

The data in the present study lend support to Slobin’s (1996) TFS hypothesis, as participants first learn (in their L1) which elements they should direct their attention to in movement events, as well as which forms in the L2 correspond to these semantic categories. For those participants whose habitual
language is English, cross-language transfer in motion events is produced from English, while for those who use Chinese for daily communication display Chinese lexicalization patterns in their Spanish. Previous studies on multilingualism have shown the existence of similar processes of cross-linguistic influence and L2 activation in the acquisition of different aspects of the L3 such as morphology (Sánchez, 2015) and lexis (Sikogukira, 1993). In some ways, the results of the present study contradict the hypothesis put forth by authors like Corder (1979) and Rothman (2013) regarding the influence of contrasting linguistic typologies. Those authors propose that L3 production will be most susceptible to transfer from whichever language (L1 or L2) is most closely aligned in terms of morphology, syntax, phonology, and lexis. Data from the present study are also in contrast to the L2 status hypothesis (Barde & Falk, 2007), which claims that the L2 will be the preferred source of transfer manifested in the L3 due to the contrast in the context of acquisition between L1, on the one hand and the L2 and L3 on the other. This only appears to be the case if the L2 also happens to be the most active and habitually used language for speakers. This finding points to usage-based observations that language faculty optimizes itself according to the parameters of frequency, recency, and salience (Ellis, 2002). It is in this way that habitual use may be operationalized as a combination of recency and frequency that interacts with L1-induced salience, perhaps understood here through Slobin’s framework.

The limitations of this study should not be overlooked. Firstly, more robust control groups should be included, as well as proficiency measurements of the learners’ L2. Ideally, learner groups should likewise contain larger numbers and an equal distribution among proficiencies. It would also benefit the present study if these multilingual groups’ lexicalization patterns were analyzed for all of their languages, in order to examine whether or not the lexicalization patterns in the different languages converge. This convergence has been proposed by the multicompetence framework, which states that the languages that coexist in a single mind constitute a single linguistic system (Cook, 2008). Such convergence in the conceptualization of motion in the L1 and L2 has in fact been shown by previous studies (e.g., Brown & Gullberg, 2013), but would benefit from further confirmation.

The present study contributes to previous literature on L3 acquisition by showing that the influence of the L2 on the L3 documented for morphology and syntax can also be applied to spatial conceptualization patterns (TFS). Future studies should perform longitudinal analyses in order to observe how these patterns evolve over time in the L3, along with which factors contribute to this evolution. Such studies could also incorporate image descriptions containing more complex movement patterns in the task structure.

References

Cadierno, Teresa. (2010). Motion in Danish as a second language: Does the learner’s L1 make a difference? In Zhaohong, Han & Teresa Cadierno (Eds.), Linguistic relativity in SLA: Thinking for speaking (pp. 1–33). Bristol: Multilingual Matters.


Schönplüug, Ute. (2000). Word-fragment completion in the second (German) and third (English) language: A contribution to the organization of the trilingual speaker's lexicon. in Cenoz & Jessner (eds.), pp. 121-142.


Slobin, Dan I. (1996a). From “thought and language” to “thinking for speaking”. In J. Gumperz y S. Levinson (Eds.), Rethinking linguistic relativity. Cambridge: Cambridge University Press, 70-96.


Song, Lulu, Pulverman, Rachel, Pepe, Christina, Golinkoff, Roberta M., & Hirsh-Pasek, Kathy. (2016). Does the owl fly out of the tree or does the owl exit the tree flying? How L2 learners overcome their L1 lexicalization biases. Language Learning and Development, 12(1), 42-59.


