The Effect of Context on the L2 Thinking for Speaking Development of Path Gestures

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Different languages inherently present different thinking for speaking patterns, targeting different meaning components for expression. Previous research has demonstrated that second language learners largely tend to transfer their first language thinking for speaking pattern to their second language, however, this paper presents evidence to the contrary. Second language learners studying in the target language country demonstrate an unexpected thinking for speaking pattern. The data indicate that learners mainly use second language gesture patterns related to path when communicating in the second language. The findings also support the notion that there are considerable linguistic benefits to study abroad that include more than just second language verbal developments; they also consist of the subtler aspects of language such as second language gesture usage.

INTRODUCTION

This paper attempts to unite the study of gesture with second language acquisition, in a *thinking for speaking* framework. The main goal of this study is to explore *thinking for speaking* and gesture patterns related to second language development by observing and analyzing students' use of co-speech gestures while describing motion events during a one-year study abroad program in Spain. Additional data collected from one native peninsular Spanish instructor teaching an advanced language course to the advanced second language learners of this study serves as an input model for the types of *thinking for speaking* and gesture patterns to which the students were exposed. Since this is a purely descriptive study with no experimental manipulation, there will be no mention of the learnability of particular gestures or gesture patterns that could be explicitly taught. Rather, the focus remains on the development of second language *thinking for speaking* patterns dealing specifically with the gestural expression of path in motion events.

LANGUAGE AND THOUGHT

The role of gestures

In this paper, gestures will be referred to as hand and/or arm movements only that can be related to co-occurring speech. Although gestures are unmistakably subject to individual variation (Alibali, 2005; Hostetter & Alibali, 2007), they can be viewed as culture-specific, some being more pervasive across cultures than others. With regard to the difference between individualistic and culture-specific gesture use it has been said that:

> individuals appear to differ with respect to how many gestures they perform, whereas speakers within a speech community and culture are remarkably consistent in when and how they gesture when communicative content and situation are kept constant. There seem to be gestural repertoires whose characteristics are motivated both by culture and by language. (Gullberg, 2008, p. 281)

These are gestures that can easily be associated with a typical language community by anyone, not only gesture researchers.

Even though gestures appear to be culturally regulated, they can also be described as hand movements that are "the spontaneous creations of individual speakers, unique and personal" (McNeill, 1992, p. 1). Time and again people casually comment on an individual's frequency of gesture usage. Some people (even within a particular culture or language community) are considered to gesticulate more often than others. Some people even become known for their specific use of gestures (i.e., when a gesture becomes associated to a particular person something like a personality trait), consequently creating individualized variations of gesticulation.

Although the relationship between culture-specific and individual gestures appears convoluted, individual gesturing is constrained by patterns found in culture. Theories regarding how, why and when individuals produce gesture are the basis for all gesture research. While people are often unaware of speech-accompanying gestures, gestures are commonly considered co-expressive because speech and gesture appear to be systematically organized in relation to one another (McNeill & Duncan, 2000). Gestures can serve two functions: they can parallel speech, where both refer to the same entity, or they can complement speech, where gesture specifically adds information that is not present in speech (Stam, 2006).

The approach taken in this paper is that speech and gesture occur because they stem from the same underlying mental process that includes forming a minimal idea unit within a wider linguistic system (McNeill, 1992, 2000, 2005). The foundation upon which this system develops is called a growth point. A growth point can be described as "the speaker's minimal idea unit that can develop into a full utterance

together with a gesture" (McNeill, 1992, p. 220). It ultimately combines the imagistic and the verbal facets of language. McNeill's Growth Point Hypothesis proposes that thought, language and gesture are intimately related. Thought, language and gesture develop in parallel over time and constantly influence each other (Stam, 2006).

Thinking for speaking

Slobin's (1991, 1996a, 1996b, 2003) *thinking for speaking* framework has been used to further investigate the speech-gesture interface proposed by McNeill (Choi & Lantolf, 2008; Kellerman & van Hoof, 2003; McNeill, 1998, 2000; McNeill & Duncan, 2000; Negueruela, Lantolf, Jordan & Gelabert, 2004; Özyürek, 2002; Stam, 1998, 2006). *Thinking for speaking* is the idea that languages not only provide speakers with a framework for expression, but also present restrictions on how ideas can be expressed linguistically. Building on Talmy's (1985) work concerning the semantic structure of lexical forms in various languages, Slobin (1991, 1996a) explores the influence of language on thought proposing that while acquiring L1, a child learns a particular way of *thinking for speaking*. This theory is examined by analyzing and comparing the ways in which speakers of different languages, in this case English, German, Spanish and Hebrew, talk about the same series of events. The goal is to see whether there are any systematic differences when compared to the language being spoken. Slobin concludes that "the language or languages that we learn in childhood are not neutral coding systems of an objective reality. Rather, each one is a subjective orientation to the world of human experience, and this orientation affects the ways in which we think while we are speaking" (1996a, p. 91).

Berman and Slobin (1994) further investigate Slobin's hypothesis by conducting a larger crosslinguistic study of the L1 narrative development of both children and adults in multiple languages (i.e., English, German, Hebrew, Icelandic, Japanese, Mandarin, Russian, Spanish and Turkish) using the story *Frog, where are you*? (Mayer, 1969). Berman and Slobin (1994) did find that regardless of age, speakers of different languages demonstrated different patterns of *thinking for speaking* in terms of word usage and word placement when particularly speaking about motion.

More recent work even explores *thinking for speaking* in L2 oral narratives (Cadierno, 2004; Cadierno & Robinson, 2009; Cadierno & Ruiz, 2006). Similar to the research conducted by Berman and Slobin (1994), Cadierno (2004), Cadierno and Robinson (2009) and Cadierno and Ruiz (2006) find that intermediate and advanced L2 learners have the ability to develop new *thinking for speaking* patterns in L2, however, L1 transfer effects can still be seen in some instances. Although these studies confirm Slobin's main *thinking for speaking* hypothesis, they fail to include all modes of communication (i.e. gesture) in the scope of their analysis.

Motion events

Studies such as the one conducted by Berman and Slobin attest to the fact that languages differ typologically in terms of how space and motion are expressed linguistically. According to Talmy (1985, 1991, 2000), a prototypical motion event includes the following components: motion (the presence of movement), figure (the moving object), ground (the reference object in relation to which the figure moves), path (the trajectory or direction of the motion), manner (the way in which the motion is performed) and/or cause (how the motion came to be). Based on Talmy's detailed explanation of the components making up a motion event, languages are shown to vary in terms of the expression of motion events and manner/cause, and motion events and path.

Taking into account how different languages express path in particular, Talmy proposes two main categories: satellite-framed languages and verb-framed languages. Satellite-framed languages (i.e., Indo-European languages except Romance, Finno-Ugric and Chinese) encode manner directly on the verb and path on a satellite while verb-framed languages (i.e., Romance, Semitic and Japanese) encode path on the verb and rarely express manner with motion. A satellite can be described more specifically as "certain immediate constituents of a verb root other than inflections, auxiliaries, or nominal arguments" (Talmy, 1985, p. 102). Satellites in English take the form of affixes or free words, for example, *over-*, *un-*, *through*, *up*.

English is an example of a satellite-framed language. In the following example, motion and manner are expressed by the verb while path is expressed by a satellite, in this case the adverb *out*.

(1) *The rabbit hops out of the cage.*

Spanish is an example of a verb-framed language. In the following example, the Spanish equivalent of example (1), motion and path are expressed by the verb while manner is expressed outside the verb by an adjunct, in this case a gerund *dando*.

(2) *El conejo sale de la jaula dando saltitos.*

McNeill and Duncan (2000) have examined both the speech and gesture patterns of native Spanish and native English speakers narrating motion events. They found that speakers of both languages have different patterns of *thinking for speaking* in terms of gesture and speech. Spanish speakers tend to focus their path gestures on path verbs or ground noun phrases, and they might demonstrate manner in gesture when there was none in the co-occurring speech. An excess use of manner in gesture with no manner expressed in speech is what McNeill (2005) specifically calls *manner fog*. Many verb-framed languages, such as Spanish, typically employ *manner fog*. English speakers conversely, tend to focus their path gestures on satellites or ground

noun phrases, accumulated with path components, and almost never demonstrate manner in gesture when there was none in the co-occurring speech. The term *manner modulation* (McNeill, 2005) refers exclusively to this phenomenon where manner is obligatory in speech, but not in gesture. Similar findings to McNeill and Duncan (2000) have been reported in numerous studies regarding motion events and gestures.

Gestures and second language acquisition

The *thinking for speaking* hypothesis can be explored in the area of second language acquisition by further analyzing the difficulties that speakers of various first languages have when trying to acquire certain aspects of particular second languages that are either similar or different in terms of motion event typology (Slobin, 1991). If it is true that there are distinct *thinking for speaking* patterns in Spanish and English for instance, then Spanish speakers learning English (or vice versa) need to learn another pattern of *thinking for speaking* in order to become proficient speakers in their second language (Stam, 2006).

Second language acquisition studies investigating Slobin's abovementioned hypothesis and the role of gesture are a relatively recent research topic (Choi & Lantolf, 2008; Gullberg & Narasimhan, 2010; Kellerman & van Hoof, 2003; Negueruela et al., 2004; Özyürek, 2002; Stam, 1998, 2006). Kellerman and van Hoof (2003) studied the speech and gesture patterns of native Dutch and native Spanish speakers in their native language and in English, their second language, in addition to native English speakers by eliciting narration with the Mayer (1969) frog story. Similar results to McNeill and Duncan's (2000) study were observed for the native Spanish speakers. These speakers showed the use of path gestures with path verbs in L1 and L2, thus indicating a Spanish *thinking for speaking* pattern transference to English. However, the Dutch speakers showed the use of path gestures with satellites or satellite phrases in L1 as expected, but strangely with verbs in L2. Unfortunately, the researchers were unable to explain this phenomenon. Even more perplexing were the mixed results of the native English speakers who demonstrated the use of path gestures on both satellites and verbs instead of just on the satellite as expected.

Spanish speakers learning English and English speakers learning Spanish were of interest in the Negueruela et al. (2004) manner and path study. The results from these two linguistic groups were compared with those of native Spanish and native English speakers and the results also replicated earlier findings (Kellerman & van Hoof, 2003; McNeill & Duncan, 2000; Stam, 1998). Both groups of L2 learners demonstrated an L1 *thinking for speaking* pattern in their L2 when describing the same Mayer (1969) frog story. Spanish speakers narrating in English tended to place their path gestures on verbs or ground noun phrases and used gesture to signal manner while English speakers narrating in Spanish tended to place their gestures on the satellites or ground noun phrases and used manner gestures with accompanying

manner verbs. Although at first glance the findings of this study pertaining to manner suggest that L2 learners of Spanish did shift their *thinking for speaking* patterns where manner was seen in gesture, but not heard in speech, it was concluded that the L2 learners had trouble finding appropriate verbs to use. Consequently, the learners appeared to be producing manner fogs, when in reality they were attempting to produce Spanish manner verbs.

Stam (2006) also investigated the use of path gestures with native Spanish and native English speakers as well as Spanish learners of English at two different levels, intermediate and advanced, while recounting the *Canary Row* (Freleng, 1950) cartoon. Not surprisingly, native speakers of both languages demonstrated speech and gesture patterns consistent with other studies (Kellerman & van Hoof, 2003; McNeill & Duncan, 2000; Negueruela et al., 2004). However, surprisingly, the Spanish learners of English did not show a clear L1 or L2 pattern of *thinking for speaking* at either proficiency level. Instead, the learners sometimes placed path gestures with verbs while sometimes placing them with satellites or prepositions. It was concluded that both levels of Spanish learners of English were not yet fully aware of the difference in the *thinking for speaking* pattern for motion events in English and therefore demonstrated the patterns that they did know.

Özyürek (2002) conducted a slightly different study pertaining to English L2 learners whose L1 was Turkish in an immersion situation. Contradictory to Negueruela et al.'s (2004) results, Özyürek found that after many years of L2 immersion, learners did shift their *thinking for speaking* patterns towards the target language patterns in both path and manner motion events.

Choi and Lantolf (2008) also included immersion learners in their study of advanced L2 learners of English and Korean. They looked at path, manner, and manner-path conflated gestures. They reported that the L2 speakers of both languages demonstrated a shift in *thinking for speaking* towards the target language when expressing path; L2 English speakers behaved like L1 English speakers all-around when using path only gestures, while L2 Korean speakers only demonstrated a shift when synchronizing path gestures with ground noun phrases or path verbs. When analyzing manner and manner-path conflation, they found that L2 speakers in general did not adapt their *thinking for speaking* patterns to L2.

A review of previous research shows that second language learners of various proficiency levels demonstrate varying gesture patterns when speaking a second language. When looking specifically at path, *thinking for speaking* patterns suggest that sometimes L2 learners use L1 patterns yet at other times they seem to shift their *thinking for speaking* patterns to appear more like L2. When analyzing manner, the results are much more suggestive and do not provide any evidence of shifting *thinking for speaking* patterns unless in an immersion situation. Given these conflicting conclusions, this study attempts to add to ongoing gesture research while specifically focusing on L2 learners who are studying in an ideal input-rich environment such as

study abroad, in hopes of gaining more insight into *thinking for speaking* and its role in second language acquisition.

THE STUDY

The current study is based on the collection and description of motion events found in speech and gesture produced by second language learners in an interview at the halfway point of their one-year study abroad experience in Spain. The results of this data are compared to other data collected from a native peninsular Spanish speaker as well as the results found in previous studies. Of particular interest here is how second language learners express the path component of motion events.[1] The research questions guiding this project and particular methodology are:

1. *What path related gesture patterns for motion events are second language learners consistently exposed to in the classroom?*
2. *What kinds of path related gesture patterns for motion events are second language learners using during their study abroad experience?*
3. *How do the path related gesture patterns found for these second language learners compare to the results of previous studies?*

Setting

The datasets for this study include two scheduled observations: teacher discourse in a classroom and student discourse in a one-on-one interview. The video recordings of the teacher discourse took place during five classroom visits to one instructor's Spanish as a foreign language class while the video recording of the student discourse took place during an interview on a given day in a communal area of the university that the students attended.

The particular class chosen for the analysis of this project was an intermediate level class participating in the 2007-2008 Education Abroad Program. The students participating in this study abroad program normally attend an Intensive Language Program that lasts one month at the beginning of their year abroad in order to prepare them for the regular university courses that they will be attending throughout the year. Before registering for their classes at the local universities, all students are required to attend various daily classes including Spanish Culture Through Literature, Catalan, Advanced Spanish Grammar, Composition and Commentary, and Conversation during the Intensive Language Program. The teacher data was taken from the Composition and Commentary class while the student data was taken at the same location, in the communal area outside of the classrooms where the Intensive Language Program first took place.

[1] In order to analyze the data in as much detail as possible, this study focuses solely on the path component as opposed to path and manner conflation.

Participants

This study includes two types of participants: an instructor and several students. The instructor was video recorded in the classroom while teaching a Composition and Commentary class to the student participants of this study. The students were video recorded six months into their study abroad experience during an on-campus interview with the researcher.

The instructor, who will be referred to as Paula, can be described as a forty-four year old native female Spaniard who has lived in Spain her whole life. She has been teaching Spanish as a second language for nine years, eight years at the local university and six years for this particular course in the Intensive Language Program.

The other participants include two male and four female American undergraduate students all of whom began the study at age twenty and were in their junior year of university. All of the students were native English speakers and reported English as the language they felt most comfortable using on a regular basis. In order to attend this particular study abroad program, all of the students must have passed at least two years of Spanish language courses at their home institution. Upon entering the study abroad program, the participants were also required to take a placement test so that they could be placed in one of the six levels of the program. The participants in this study scored at the lower-end of the intermediate level of learners of Spanish and were all placed in the same section.

Data collection

Unlike most of the previous studies regarding analyzing the use of gestures in motion events which elicit data by asking participants who are of various proficiency levels in a foreign language environment to retell a portion of a cartoon they have just seen (Choi and Lantolf, 2008; Kellerman & van Hoof, 2003; McNeill, 1998; McNeill & Duncan, 2000; Müller, 1994; Negueruela et al., 2004; Özyürek, 2002; Stam, 1998, 2006), this study aims at analyzing natural occurring discourse in the second language classroom environment in a study abroad context.[2] It is the intent of this project to get even closer to the acquisition process by looking directly at students who are actively acquiring a language by being fully immersed in the target language on a daily basis.

Video recordings for the teacher data took place every second day throughout the one month Intensive Language Program for the full duration of the class, about fifty minutes. During this period, two video cameras were placed at both ends of the classroom. One video camera was designated for recording the instructor while the

[2] A foreign language classroom refers to an environment in which there is no immersion situation (i.e., a Spanish class being taken at a U.S. university).

other was designated for recording the six participants.[3] Ultimately five days of classroom activity was recorded, yielding approximately 250 minutes of classroom footage.

Six months into the study abroad experience, the six student participants were asked to participate in interviews conducted by the researcher. During the individualized thirty-minute interviews, open-ended questions were asked in order to elicit as much continued speech as possible. The questions were either related to the students' experiences so far in Spain or to their perceived differences amongst Spaniards and Americans or Spain and the United States. Only one camera was used for the informal interviews since the main focus of this part of the project was the students' gesture patterns. The camera was positioned behind the researcher and the students were asked to sit facing the researcher. For this portion of the data collection, a total of 180 minutes were recorded.

Data analysis

First, a transcription of all of the communication collected inside and outside of the classroom by both the instructor and the students was made using ELAN (EUDICO Linguistic Annotator) software in accordance with a modified version of the transcription guides provided by Duncan, McNeill and McCullough (1995), Gullberg (1998), McNeill (1992, 2005) and Stam (2006) (see Table 1).

Speech coding	
#	breath pause (must be audible)
/	silent pause (multiple slashes for longer pauses)
um, uh, uh-huh, etc.	filled pause
*	self-interruption
–	other interruption
xx	inaudible, uninterpretable
%	non-speech sound (i.e., laugh, cough, etc.)

Table 1: Speech coding conventions

Second, all motion event related speech was selected for further analysis. Essentially, while reviewing all of the transcriptions, the verbs in each speech segment were extracted and analyzed to distinguish whether they fit the description of a prototypical motion event. From this description, a list of all motion event related speech was extracted for further analysis.

[3] The student data collected during the classroom visits did not yield enough analyzable data, therefore it will not be treated throughout this paper.

Third, a gesture transcription specifically of the selected motion events to be analyzed was prepared using ELAN (see Table 2). Each motion event was analyzed for the use of co-occurring gestures. Gesture phases were identified by determining the preparation and retraction phases of each gesture. The stroke of the gesture was determined semantically (where the gesture projects meaning) and kinesthetically (where the gesture projects more effort). In addition, gesture holds were also noted.

Gesture coding	
[gesture phase]	segment during which gesture occurs
bold	gesture stroke
underline	gesture hold

Table 2: Gesture coding conventions

Fourth, path only gestures were identified and counted. Annotations regarding the meaning of each gesture that was identified were made in addition to written detailed descriptions of the actual shape, movement and placement of the hands for each gesture. Next, it was noted and counted what speech element the stroke of the path gesture co-occurred with, such as a verb, satellite, ground noun phrase, more than one element or other (see Table 3).

Speech Element	**Detailed Description**
Verb	V, (S)V, (S)VO, conjunction (S)V
Satellite	adverbs, prepositions of path
Ground noun phrase	NP with reference to ground
More than one	V + satellite, satellite + V, V + satellite + ground NP, satellite + ground NP
Other	conjunction, adjective + preposition + NP, adjective, NP with no reference to ground, S only

Table 3: Motion Event Speech Categories (modified from Stam, 2006)

RESULTS

Overall there were 336 tokens of motion events found in speech (i.e., speech-only), that is to say there were 336 occurrences of verbs in speech that expressed a prototypical motion event as defined by Talmy (1985, 1991, 2000). Tables 4 and 5 provide an overall idea of what each participant produced in terms of the motion events found in speech.[4] Table 4 specifically describes the occurrence of tokens used by the teacher on a given day in the classroom. Overall, there were a total of 158 tokens recorded by the teacher. Table 5 simply describes the numerical values of the tokens recorded for each participant during the personalized interviews where only the participants' individualized speech was being recorded. Overall, there were a total of 178 tokens recorded during the interviews. This information is the basis for the detailed path analysis that follows.

Participant	Day 1	Day 2	Day 3	Day 4	Day 5
Paula	20	52	18	26	42

Table 4: Tokens of speech-only motion events produced by the teacher in the classroom

Participant	Interview
Hannah	31
Katie	48
Layla	38
Lola	27
Marco	18
Tapatio	16

Table 5: Tokens of speech-only motion events produced by the students during the interviews

Of the overall 336 tokens of speech-only motion events for both the teacher and the students, 98 of these tokens demonstrated the use of path only gestures synchronized with speech for all participants, 38 tokens recorded for the teacher and 60 tokens recorded for all of the students. The specific findings regarding speech-gesture tokens for the teacher and the students follow.

[4] All participants were given pseudonyms to protect their identity.

The teacher data

Gesture-based results

The overall number of tokens of path only gestures produced by the teacher on a given day can be seen in Table 6. Again, there were a total of 38 tokens of path only gestures that occurred in the classroom. The average token count on any given day for the teacher is 7.6.

Participant	Day 1	Day 2	Day 3	Day 4	Day 5
Paula	10	4	8	6	10

Table 6: Frequency of the use of path only gestures by the teacher

Table 7 presents the frequency for path only gestures distributed across each motion event speech category – verb, satellite, ground NPs (GNP), more than one element (MTO) and other, for all days combined. A closer look at where the teacher is placing her gestures will help establish what *thinking for speaking* patterns the students are being exposed to constantly.

Participant	Verb	Satellite	GNP	MTO	Other
Paula	25	0	1	12	0

Table 7: Frequency of path only gestures with motion event speech categories for Days 1-5

Paula, the teacher, exhibits the expected *thinking for speaking* pattern in terms of gesture and speech for a native Spanish speaker according to McNeill and Duncan (2000). She concentrates the majority of her path gestures on path verbs and a small percentage on ground noun phrases. She also demonstrates a moderate number of gestures that fall on more than one speech element (i.e., verb + satellite, verb + satellite + ground noun phrase or satellite + ground noun phrase). The specifics that make up Paula's gestures that fall on more than one speech element will be dealt with in detail in the next section where precise examples will be revealed.

Speech and gesture-based results

As mentioned above, Paula demonstrates the typical *thinking for speaking* pattern for native Spanish speakers. The quantitative results show that out of the thirty-eight gestures produced for motion events that refer to path, twenty-five are placed on verbs, one is placed on a ground noun phrase and twelve are placed on more than one speech element. Examples of Paula's straightforward typical use of gesture with verbs and gesture with ground noun phrases respectively include the following:

(3) *Medio de transporte en, pero* [*cuando* ***es caminando*** *es a pie.*]
'Mode of transportation in, but [when **it's walking** it's by foot.]'
(PATH – RH index finger extends outward from body. Represents showing direction of walking away from a place.)

(4) *Que ha sido así.* [*Los toros salen por* ***las calles*** *de una parte de la ciudad.*]
'It has been like that. [The bulls go out through **the streets** from one part of the city.]'
(PATH - RH raises and moves away from body palm facing down. Represents the bulls going out and running through the streets.)

The less straightforward pattern of gesture use depicting path is Paula's use of gesture with more than one speech element (i.e., verb + satellite, satellite + verb, verb + satellite + ground noun phrase or satellite + ground noun phrase). Of the twelve instances of gesture use with more than one element, only three begin with a satellite and are followed by a ground noun phrase and only one begins with a satellite and is followed by a verb.

(5) *Juan está de vacaciones en México. Le hace ilusión recibir cartas. Pues, [****desde México*** *se envía a sí mismo un] [****un*** *sobre o un*una carta.]*
'Juan is in Mexico on vacation. He loves receiving mail. So, [from Mexico he sends himself a] [an envelope or a*a letter.]'
(PATH – RH extends forward and then retracts.)

(6) *Si no tienes nota, y tienes dinero,* [***todavía entra***].
'If you don't have a grade, and you have money, [**you still enter**.]'
(PATH - BH move away from body slightly apart. Represents moving from one place to another.)

According to previous research (Kellerman & Hoof, 2003; McNeill & Duncan, 2000; Negueruela et al., 2004; Stam, 1998, 2006), it is assumed that any gesture findings involving a satellite followed by a ground noun phrase or a verb by a native Spanish speaker is a very rare find since this observation has only really been briefly mentioned once before for one single occurrence (Stam, 2006).

What is more common is the use of a verb with a satellite and ground noun phrase or solely a verb with a satellite.

(7) [*Y cuando* ***digo subir hacia arriba,*** *todos habéis ido ya al Parque Guell,*]
'[And when **I say going up**, you have all already gone to *Parque Guell*,]'
(PATH - RH turns inwards while creating an incline. Represents going upward.)

(8) *Tanto es así que* [*si tú vas* ***a un bar***] *uh puedes consumir alcohol hasta que cierra el local.*
'It is like that so much so that [if you go **to a bar**] uh you can consume alcohol until the place closes.'
(PATH - LH extends to the left and back to center. Represents movement away from a starting point.)

Based on a quantitative tally of the more common uses of more than one speech element the majority of the gestures signifying path still begin with a verb thus replicating the patterns found in similar studies for native Spanish speakers.

The student data

Gesture-based results

The overall details of the 60 tokens of path only gestures used by all six student participants during the interviews can be seen in Table 8.

Participant	**Interview**
Hannah	9
Katie	15
Layla	12
Lola	12
Marco	5
Tapatio	7

Table 8: Frequency of the use of path only gestures for all student participants in the interviews

The distribution of gesture occurrences ranges from 5 to 15 gestures while the average number of path gestures demonstrated during all of the student interviews is 10.

Table 9 presents the frequency for path only gestures distributed across each motion event speech category for each student participant during the interview.

Participant	Verb	Satellite	GNP	MTO	Other
Hannah (2/9)	44% (4/9)	0% (0/9)	11% (1/9)	22% (2/9)	22%
Katie (2/15)	33% (5/15)	0% (0/15)	7% (1/15)	47% (7/15)	13%
Layla (0/12)	75% (9/12)	0% (0/12)	8% (1/12)	17% (2/12)	0%
Lola (0/12)	83% (10/12)	17% (2/12)	0% (0/12)	0% (0/12)	0%
Marco (1/5)	20% (1/5)	20% (1/5)	20% (1/5)	20% (1/5)	20%
Tapatio (0/7)	100% (7/7)	0% (0/7)	0% (0/7)	0% (0/7)	0%

Table 9: Frequency of path only gestures with motion event speech categories for interviews

At a glance it appears that the students are following the anticipated *thinking for speaking* gesture patterns of native Spanish speakers. Hannah, Katie, Layla and Tapatio do not place any of their gestures on the satellite, as they would be expected to do in English. Lola and Marco on the other hand demonstrate a small percentage of gestures placed on satellites. When accounting solely for the gestures placed on verbs and ground noun phrases as do McNeill and Duncan (2000) when looking at native Spanish speakers, Hannah, Layla, Lola and Tapatio mimic this pattern by placing the majority of their gestures on these particular speech motion event categories. Even more revealing are Layla, Lola and Tapatio's results of a much higher percentage of gesture use with verbs alone. According to McNeill and Duncan (2000), both native English and native Spanish speakers place gestures on ground noun phrases, the only considerable difference is that native Spanish speakers are also noted to place gestures on verbs while native English speakers place them on satellites. Thus, Layla, Lola and Tapatio are undoubtedly displaying a native Spanish speaker *thinking for speaking* gesture pattern. As a complete opposite to Layla, Lola and Tapatio, Marco is the only participant who does not demonstrate an obvious *thinking for speaking* pattern at all by using one gesture for each motion event speech category. Although Katie does not demonstrate a gesture pattern consistent with the other participants, a closer analysis in the following section of what speech elements make up her motion events will help us understand what type of *thinking for speaking* pattern she is demonstrating.

Speech and gesture-based results

Beginning with Layla, Lola and Tapatio's obvious gesture usage with verbs to denote path, their Spanish *thinking for speaking* pattern is evident. Examples (9), (10)

and (11) demonstrate each student's pattern respectively. In these particular examples there are satellites that follow the verbs, therefore the students had the option of placing their gestures on the satellite, but in the end they chose the verb.

(9) *Y también* [*con ella,* ***fuimos***] *a Pisa para tomar uh las las fotos obligatorias con el torre, um.*
'And also [with her, **we went**] to Pisa in order to take uh the the obligatory photos with the tower, um.'
(PATH - LH raises a bit and moves index finger extended closer to body then away from body. Represents moving from one place to another.)

(10) *Que yo sé*yo conozco también. Y ellos me invitaron por un café y todo. Y luego* [***regresamos***] *a su casa allí estoy hablando con la madre y la abuela y dos niñas y no. Y ellos me invitaron a su casa en Costa Brava.*
'That I know*I know also. And they invited me for a coffee and everything. And then [**we returned**] to their house there I am talking with the mother and the grandmother and two kids and no. And they invited me to their house in *Costa Brava*.'
(PATH - RH sweeps away from body. Represents going to their house.)

(11) *Porque todos mis amigos que están en semestres en otros país,* [*querían* ***ir***] *a España y a Barcelona. Y entonces en el principio tuve mucho, y mis compañeros un poco. Este es bastante. Ya está, ya está.*
'Because all of my friends that are on semesters in other countries, [wanted **to go**] to Spain and to Barcelona. And so at the beginning I had a lot, and my friends a little. It's enough. That's it, that's it.'
(PATH - RH is extended, moves towards body with index finger extended. Represents people visiting his city.)

Hannah for the most part also follows a Spanish *thinking for speaking* pattern by placing five out of nine of her path gestures on the verb or ground noun phrase.

(12) *Porque yo fui en el tren, y* [*él estaba afuera y no no* ***sube,***] *no uh no subió* [*y no* ***bajó,***] *bajó tampoco.*
'Because I went on the train, and [he was outside and he did not not **gets on**,] he did not uh he did no get on [and he did not **get off**,] get off either.'
(PATH - LH begins extended away from boy then moves across body to right. Represents getting on the train.)
(PATH - LH extends outward from body extending index finger. Represents getting off the train.)

(13) *Y para* [*ir a* ***mi pueblo*** *um en el centro de California de Santa Cruz, como dos horas por coche.*] *Pero en Andaluz es siete a veces.*

'And in order to [go to **my town** um in the middle of California of Santa Cruz, like two hours by car.] But in *Andaluz* it is seven sometimes.'
(PATH - LH extends downwards from chin to bench and extends index finger. Represents moving from one place to another.)

The rest of Hannah's path gestures do not indicate a clear *thinking for speaking* pattern. Of the two path gestures placed on more than one speech element, one is of the verb + satellite + ground noun phrase format while the other is a satellite + ground noun phrase. Examples (14) and (15) attest to this.

(14) *No de todas partes,* [***voy a Madrid*** *con un chico de Italia y otra chica de Alemania, um.*]
'Not from all parts, [**I am going to Madrid** with a guy from Italy and a girl from Germany, um.]'
(PATH - BH extend index finger and point outward from body, not synchronous. Represents movement from one place to another.)

(15) *Mm, no, siempre camino* [***por la calle en la noche pero***.]
'Mm, no, I always walk [**through the street at night but.**]'
(PATH - LH extends outwards then inwards from body with index finger in pointing position, repetitive. Represents movement of going somewhere.)

At first glance, Katie is the only student subject to not show a Spanish *thinking for speaking* pattern on the surface during the interview. Of the fifteen path gestures demonstrated overall, five are placed with verbs and one is placed with ground noun phrases. Although none are explicitly placed with satellites, a closer look at the seven remaining path gestures shows that they are placed with more than one speech element. Five of these seven occurrences begin with verbs as in examples (16) and (17) while only two begin with satellites as in example (18).

(16) *Y cuando um* [***llegamos al*** *piso*] *hay una microphone y algunas cosas y era muy divertido pero muy difícil para cantar en castellano*
'And when um [**we arrived at the** apartment] there is a microphone and a few things and it was very fun but very difficult to sing in Spanish'
(PATH - LH moves towards body from outside position. Represents coming back.)

(17) *cuando* [***vienen a Barcelona***] *estoy meh, he hecho esto muchas veces y ahora no tengo ganas porque es caro y no sé. No me gusta ser en un espacio pequeño con tanta gente que no con*que no son conocidos que son borrachos.*
'when [**they come to Barcelona**] I am meh, I have done this many times and now I do not feel like it because it is expensive and I don't know. I don't like being in a small space with a lot of people that do not kn*that are not acquaintances that are drunk.'

(PATH - LH rotates up and inward. Represents coming here.)

(18) *Sí. Porque, quizás, no sé, quizás, voy* [***a Australia*** *el próximo semestre, para otro-sí.*]
'Yes. Because, maybe, I do not know, maybe, I go [**to Australia** next semester, for another-yes.]'
(PATH – RH and LH move away from center, LH separates from RH and moves towards left. Represents moving away.)

Based on this detailed analysis, it appears that Katie is in fact demonstrating a Spanish *thinking for speaking* pattern during the interview.

DISCUSSION AND CONCLUSIONS

Discussion of findings

The quantitative and qualitative analyses of this study reveal that the instructor unquestionably expressed a native Spanish *thinking for speaking* pattern for path linguistically and gesturally when speaking of motion events. The instructor specifically placed the majority of her path gestures on verbs, not satellites, as done in English or even on ground noun phrases, as done to a small extent in both languages. These results replicate the findings of similar motion event gesture studies having to do with native Spanish speakers (Kellerman & van Hoof, 2003; McNeill, 1998; McNeill & Duncan, 2000; Negueruela et al., 2004; Stam, 1998). The findings confirm that the study abroad students were at least being exposed to natural L2 gesture patterns in the classroom context where acquisition was taking place during the Intensive Language Program classes. From this, it can be assumed that the study abroad students of this project were being consistently exposed to the native speech and gesture patterns of Spaniards on a daily basis even when they finished the Intensive Language Program classes and had begun their regular classes at the university.

The study abroad students participating in this study did not replicate the findings from previous foreign language classroom studies dealing with path gestures (Kellerman & van Hoof, 2003; McNeill, 1998; McNeill & Duncan, 2000; Negueruela et al., 2004; Stam, 1998, 2006). For the most part, researchers have concluded up until now that L2 learners have shown a transfer of their L1 *thinking for speaking* pattern when speaking L2. In the current study, when sampled six months into the students' study abroad experience, five out of six students demonstrated a Spanish *thinking for speaking* pattern. Four of these students' Spanish *thinking for speaking* pattern was very obvious while only one student's Spanish *thinking for speaking* pattern was less evident and deemed to be a Spanish *thinking for speaking* pattern after a thorough qualitative analysis of the utterances made. Hannah, Layla, Lola and Tapatio demonstrate the use of path gestures for the most part on verbs and ground

noun phrases while Katie places most of her path gestures on more than one speech element. When analyzing these occurrences in detail, Katie appears to follow a Spanish *thinking for speaking* pattern by placing her path gestures mainly on verbs. Unfortunately, no conclusion can be made about one student's use of gesture, Marco, because half of his path gestures demonstrate an English *thinking for speaking* pattern while the other half demonstrate a Spanish *thinking for speaking* pattern. These are the only results that are indeterminate during the sampling at six months into the study abroad experience.

The findings of this study are much more comparable to the Özyürek (2002) and Choi and Lantolf (2008) studies of L2 immersion learners who did show evidence of a shift in *thinking for speaking*. The results suggest that target-like motion event gesture patterns using path do appear to emerge when students are fully immersed in a study abroad environment. This factor of being fully immersed in the target language might help shed some light on the variation found between immersion studies and foreign language classroom studies, which did not fully account for existing language environment. For instance, Negueruela et al. (2004) looks at native English speakers who have Spanish as an L2, native Spanish speakers who have English as an L2 as well as monolingual speakers in both Spanish and English, studying at an American institution at the time of the study. Although it was reported that the L2 speakers were highly proficient in their L2 and had lived in the target language country for one year at some point during their lives, there was no mention of how long it had been (specifically for the Spanish speaking participants) since they were in the target language country fully exposed to expected motion event gesture patterns, not to mention the fact that the English L1 participants with Spanish as their L2 participated in this study in the U.S. rather than in the target language country. In a similar study, Stam (2006) examined native Mexican Spanish speakers, native English speakers and native Mexican Spanish speakers learning English at an American university who were classified as either intermediate or advanced learners of English. Unfortunately, no details regarding the past and present language experience of these participants were revealed. When looking at both of these studies simultaneously, it is obvious that the English L2 learners are in the most ideal target language environment while the Spanish L2 learners are not, however, there is still important information missing when it comes to understanding the linguistic and language learning background of these particular English L2 learners. Accordingly, the present study represents a more interesting research environment for investigating the actual L2 development of motion event gesture pattern usage by accounting for more of the past and present language experiences of all of the participants involved.

Collentine and Freed (2004) succinctly review a great deal of literature concerning various contexts of learning a second language and their impact on L2 development. Despite debunking the long held assumption that the study abroad context is far superior to that of the at home classroom (i.e. a Spanish class taken at an American university), they conclude that the study abroad context is, in particular,

beneficial for lexical acquisition and narrative abilities. In addition, this specific context tends to promote oral fluency and smoothness of speech for non-native speakers. The data presented in this study support and also add to these findings because the results show that study abroad learners gain far more than just native-like linguistic patterns, but eventually absorb the less salient nonverbal patterns as well.

In the field of second language acquisition an ongoing debate surrounds the question of whether non-native speakers should even strive to produce like native speakers. In fact, this controversy could also be applied to the use of native-like gestures by non-native speakers. Should they even be taught, as is verbal language, in the second language classroom? Or, does the acquisition of native-like gestures point towards a more profound cultural transformation of students studying abroad? McCafferty (2002), McCafferty and Ahmed (2000), and Peltier Nardotto and McCafferty (2010) suggest that meaning-making in the L2 classroom happens through various channels; language, gesture, culture and communication. These studies point to the importance of inhabiting a language and culture while learning L2 so that meaningful acquisition can take place. When L2 learners allow themselves to embody the new language, the influence that this has on the acquisition of cross-cultural gestures among other things is evident. Now, if second language learners aspire to gain a more native-like use of the target language overall, which ought to include both speech and gesture modalities, then learning an L2 in the study abroad environment appears to be the ideal context.

Conclusion and final remarks

This study has demonstrated that some L2 learners in a study abroad environment do demonstrate certain target language gesture patterns related to motion events. The findings further support the notion that there are considerable linguistic benefits to studying abroad that include more than just L2 verbal developments, they also consist of the subtler aspects of language such as L2 gesture usage.

The data presented throughout this study should contribute in many ways to the growing number of gesture studies related to second language acquisition, especially second language acquisition in Spanish. Further investigation regarding the L2 gesture usage of various components of motion events in different languages is needed. Future studies should address, among other things, the difference between at home learners and learners who study abroad since the gestural input that the learners receive can greatly vary. In reality, at home learners inevitably come into contact with instructors of many different backgrounds, including native and non-native speakers as well as varied nationalities. In addition, these learners do not necessarily enroll in L2 classes each semester, thus their exposure to the target language may not be reliably consistent.

Most interesting though would be the continuation of study abroad investigations, which deal more directly with the L2 developmental process as it is happening. Whether these investigations are of the spontaneous discourse type as in the present study or of the experimental type as in all of the previous studies, they could offer up a lot of information in terms of tracking the acquisition of gestural patterns in L2 longitudinally. Trying to account for any of these variables may in fact yield more compelling results that will lead to wider generalizations and result reliability.

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