

## **Gesture and Speech in Topic Organization in English as L1 and L2**

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### **Abstract**

*The goal of this paper is to study the speech-gesture relation in topic organization in English as L1 and as L2. Twenty subjects (ten Spanish, ten American) aged 19-21 participated in this experiment. They were asked to watch a 7-minute-long animated cartoon and then they were asked to narrate what they had seen to a partner. We analyzed the following features, both in English as L1 and in English as L2: (1) average of gestures per informant; (2) percentage of gestures with new and old topics; (3) rate of pictograms with gestured new and old topics; and (4) rate of gestured new and old topics with action and state verbs. Then, we compared the Spanish speakers' behaviour in English as L2 with their behaviour in L1, in order to discern whether they use the same gestures and topic organisation in both languages or they don't. The results showed important verbal and non-verbal differences in topic organization in English as L1 and as L2.*

### **INTRODUCTION**

The goal of this paper is to study the role of the speech-gesture relationship and synchronization in topic organization in English as L1 and as L2. In order to analyze subjects' behavior in relation to topicality, it is important that we make some points clear. As Schlobinski and Schutze-Coburn (1992, p. 89) point out "Topic' is a commonly used term for a variety of approaches to a range of functional concepts. Few terms in linguistics, however, are so widely used without proper justification." Schlobinski and Schutze-Coburn (1992, p. 90) name four main approaches to topic:

- (1) topic as given and/or known information,
- (2) topic as point of departure of the sentence,
- (3) topic as the constituent expressing what the sentence is about,
- (4) topic as the basis of "communication dynamism" (Firbas, 1964).

The underlying assumption to the first approach is that "Topic, then, is equated with the sentential element (or elements) which refers to a fact or facts already known from the preceding context or to facts that may be taken for granted." (Schlobinski and Schutze-Coburn, 1992, p. 91).

Those who define topic as the point of departure in a sentence (the Prague School) divide the sentence into "theme" (i.e. the main issue) and "rheme" (i.e. the rest of the sentence)<sup>1</sup>. Halliday (1985, p. 36) defines the theme as follows: "the Theme is a function of the CLAUSE AS A MESSAGE. It is what the message is concerned with: the point of departure for what the speaker is going to say". Other definitions are more structurally and syntactically-oriented. So, Chomsky (1965, p. 211) argues: "we might define the Topic of the Sentence as the leftmost NP immediately dominated by S in the surface structure." But the two notions of grammatical subject and topic may or may not coincide; as Lambrecht explains (1994, p. 118): "Topics are not necessarily grammatical subjects, and grammatical subjects are not necessarily topics, at least in languages like English. For example non-subjects may act as topics in such accent-initial sentences as (1.1) (My CAR broke down)"<sup>2</sup>. In fact, the term "topicalisation" is used to refer to the construction in which one constituent is moved to the front of the sentence, to initial position ("The money I'll give you in a minute"). A different construction is the one commonly known as "left dislocation" where one constituent is moved to the front of the sentence (to the left) and its canonical position is filled with a pronoun or a full lexical noun phrase ("Mary, I gave her the money") (Gregory and Michaelis, 2001).

The third approach is closely linked with the previous one. Schlobinski and Schutze-Coburn (1992, p. 99) explain that "...the topic provides the tie to which the rest of the sentence is connected".

But the problem with this approach is that this notion of 'aboutness' is closely related to the 'grammatical subject' of a sentence and, as we have already said, they may not always coincide. Take for example the case of languages such as Mandarin, where subject and topic are more distinct<sup>3</sup>.

### Example 1. Topic in Mandarin.

*shu, wo mai le yi ben* [Mandarin]  
 book I buy (+ verbal particle) one (+classifier)  
 'I bought a book.'

Since there is a tendency for the topic in Mandarin to appear at the beginning of a sentence, it is common to find sentences with the following structure:

'*dui-yu*' (=regarding) + topic + rest of the sentence

Finally, the last approach is concerned with the communicative load of the topic. According to Firbas (1964), the topic ("theme" for Firbas) has a low communicative value because known information shows low degrees of communicative dynamism.

Apart from these four main approaches to topic, we have to highlight the distinction between discourse topic and sentence topic (Van Dijk, 1977a, 1977b; Kehler, 2004 and Lotscher, 1987). The former makes reference to the informational content of a message (Keenan and Schieffelin, 1976), whereas the latter refers to the old information or theme in a sentence, in contrast to the new information or rheme (Givon, 1983). According to Keenan and Schieffelin (1976, p. 338), discourse topic is "the proposition (or set of propositions) about which the speaker is either providing or requesting new information." (Halliday and Hasan, 1976; Van Kuppevelt, 1995; Asher, 2004; Stede, 2004 and Oberlander, 2004). This definition differs significantly from the one offered by Lambrecht (1994, p. 118), where there is a sentence-based approach to topic: "The topic of a sentence is the thing which the proposition expressed by the sentence is about." (Chafe, 1976; Reinhart, 1982; Barnes, 1985, Büring, 1997, 1998 and Gundel 1997). So, they are similar because both of them try to answer the question: "What is this sentence/discourse about?" but they are different in relation to their level of analysis because 'sentence topic' is constrained to clause or sentence-level constituents and 'discourse topic' is generally based on propositions. According to Van Dijk (1977b), "Discourse topics are made explicit in terms of macro-structures. They globally organize the information of a passage, whereas sentence topics linearly link pieces of information".

As we have just seen, topic has been studied from a very wide variety of perspectives: psychological, syntactic, semantic, etc. Since we are interested in second language acquisition, we have decided to follow an integrative perspective of topic analysis where we take into account different criteria included in the approaches presented above. These criteria will be basically syntactic, semantic and gestural, and will be explained in detail in the method section.

At this stage, a definition of gesture becomes necessary. The term has been defined from different perspectives. Some scholars define gestures in a very broad sense, considering them to be any kind of nonverbal behavior (facial gestures, eye movements, body posture, hand and body movements, raising eyebrow, foot tapping, etc.). In this perspective, they are interested in the meaning gestures convey by themselves, without taking into account the speech-gesture relation (Poyatos, 1994 and 2001). This perspective differs notably from the new approach, which focuses on the way gestures combine with speech to create meaning (McNeill, 1992 and 2000). According to McNeill, gestures are defined with regard to their relation to language as unconventionalized movements that occur together with speech. Kendon (1972, 1980) showed that there is a consistent patterning in how gesture phrases are structured in relation to speech phrases.

Kendon (1980, 1990, 1994) and McNeill (1992, 2000) agree that gestures cannot be regarded as redundant elements additional to speech. Instead, they consider that gestures should be taken as part of the same system. In this article, we adopt this definition of gesture proposed above and so, the communicative process is viewed as one in which both verbal (speech) and non-verbal (gestures) signals co-occur.

Kendon (1990, p. 15) states “the participants draw from repertoires of behavioral practices (units of language, gesture, orientation, posture and spacing, and the like) that are widely shared and follow certain organizing principles that are commonly adhered to, within any given communication community”.

According to Kendon (2000:49) “There is, to be sure, no hard-and-fast line between what is ‘gesture’ and what is not, but there is, nonetheless, little difficulty with agreeing what it includes: hand wavings or gesticulations that accompany talk and various kinds of more or less conventionalized actions which have a symbolic or semiotic function, as well as so-called gesture systems, alternate sign languages, and primary sign languages, all of which are fashioned from the same material, so to speak, and have certain features in common in consequence, but which, at the same time, may show very different kinds of organization”.

In this paper, we will use the second definition of gesture in order to analyze the organization of topic. That is to say, we are interested in examining the way gestures are co-structured with speech to organize information. This does not mean that gestures necessarily have to co-occur with speech.

In the following picture (Figure 1) we can see how our subject (SpMan02L2) is moving his hands from left to right as balancing. He is a native speaker of Spanish and is narrating the story in English. It seems that he does not know how to say “swinging” and this verb is substituted by this gesture.

### Example 2. SpMan02L2.

“... we see a bird[Ø]<sup>Gesture= moving hands as balancing</sup> that is singing he tells ...”



FIGURE 1 SpMan02L2

However, any type of gesture will be taken into account in the general counting shown in the results section below. In other words, the total amount of gestures includes both gestures that accompany speech and gestures that appear as the only communicative elements, that is to say, gestures that appear in isolation but with a communicative function.

The reason for this general counting in each subject’s narration was to compare the number of gestures produced by native speakers of English and native speakers of Spanish in their L1 (Spanish are said to produce more gestures when speaking Spanish than Americans when speaking English). Besides, we also wanted to discover whether Spanish and American speakers use more gestures when using an L2, as a possible mechanism to compensate for their lack of speech fluency.

Then, we can compare these results with the number of gestures used in the organization of topic and we will examine whether the same amount is maintained in gesture-speech structures in topic organization.

In the following picture (Figure 2) our subject (SpWoman03L2) is introducing a topic (“jail”) and she shows the shape of a jail with her hands in order to make clear to the other subject the exact meaning of that word. She is a native speaker of Spanish and is narrating the story in English (L2):

### Example 3. SpWoman03L2.

“... where Tweety is in his little [JAIL]<sup>Gesture= shape of a jail with her hands</sup> singing ...”



FIGURE 2 SpWoman03L2

There are two main reasons for gestures to be included in our study of topic:

1) As stated by some linguists (Berman and Slobin, 1994; Graham and Argyle, 1975; Graham and Heywood, 1975; Rauscher, Krauss and Chen, 1996; Ríme and Schiaratura, 1991; Ríme, Schiaratura, Hupet and Ghysseleinckx, 1984; Slobin, 1991, 1996a, 1996b; Slobin and Hoiting, 1994), gestures play an important role in the way speakers organize their ideas, what some scholars call patterns of thinking (McNeill, 2000; McNeill and Duncan, 2000). Topic, on the other hand, is closely related to information structure (Halliday, 1967). Consequently, gestures are supposed to be connected with topic organization.

In the picture below (Figure 3) we can see how SpWoman01L2 starts the narration of the story. She is remembering what she has seen and she is also organizing her ideas. She is a native speaker of Spanish and she has to pay special attention to the language because she is expected to narrate the story in English. She is moving all the time: touching her ring, moving on the chair, looking downwards, etc.

#### Example 4. SpWoman01L2.

“E:::m [Ø]<sup>Gesture= touches her ring</sup> It is a story[Ø]<sup>Gesture= moving on the chair</sup> about the:: [Ø]<sup>Gesture= looking downwards</sup> the:: Tweety Bird ...”



FIGURE 3 SpWoman01L2

2) It is already known that sentence structure in English and Spanish is quite dissimilar (Stockwell, Bowen and Martin, 1965; Whitley, 1986; Fisiak, 1990; Hill and Bradford, 1991) and, for that reason, it would also be interesting to see if those differences carry over into the organization of information and in the gestures used in topic organization as well.

Examples 5 and 6 below illustrate different syntactic constructions in English and Spanish:

#### Example 5. AmWoman07L1.

The cat rolls [down]<sup>gesture expressing direction</sup> the street



FIGURE 4 AmWoman07L1

**Example 6. SpWoman03L1.**

*Y entonces el gato baja la calle [rodando]* <sup>gesture indicating manner of movement</sup>

In the previous examples we can notice how English expresses manner of movement in the predicate (*rolls*) and direction in an adjunct (the preposition *down*). In Spanish, manner of movement is not expressed in the predicate but in an adjunct (*rodando*), whereas the predicate expresses direction or path (*baja*). This clearly shows the two languages have different syntactic structures. Some scholars (Talmy 1985, 1991, Slobin 1996b, Aske 1989, Sebastian and Slobin 1994) have argued that the languages of the world can be classified into two groups: those which encode the path or trajectory of the movement inside the verb (i.e. Spanish), and those which encode it as a satellite to the verb (i.e. English). Amores and Mora (1998:194) state: “Spanish will tend to express in the main verb the trajectory the object has followed in the movement. ... English, on the other hand, will encode in the verb the manner of the cause of the movement.”

But the differences between English and Spanish carry over into the gesture structure as well. In example 5 above, the American subject performs a gesture indicating direction and coinciding with the adjunct “down”. In example 6 the Spanish subject performs a gesture indicating manner of movement but also coinciding with the adjunct “*rodando*”.

But what about the relationship between gestures and the topicality of utterances in English discourse? How do native and non-native speakers of English gesture while uttering topics in an utterance? (Chui, 2004).

There is extensive literature on the relationship between gestures and discourse: Bavelas, Chovil, Lawrie and Wade (1992), Kendon (1983 and 1995), Levy and McNeill (1992), McNeill and Levy (1993), McNeill (1985, 1992, 1993). In a study carried out by McNeill and Levy (1993, p. 363) the data showed “... the joint contribution made by speech and gesture to the process of creating and maintaining discourse topics”. As Bavelas, Chovil, Lawrie and Wade (1992) point out, gestures should not be treated as

...physical movements but rather as referential acts; they convey meaning, depict events, and represent ideas. They specify and often clarify verbal references, and they can denote meanings that may not be in the accompanying words (e.g. when they occur in the pause before the speaker finds the appropriate word). (p. 470)

In this paper, we will study the way in which gestures and speech cooperate in creating new topics or continuing old or given ones. We will first examine the similarities and differences between English as L1 (American speakers) and English as L2 (Spanish speakers).

If we compare Figure 5 and Figure 6, we can see that it does not matter if the subject is using his native language (AmMan05L1 in Figure 5 is using English as L1) or not (SpMan02L2 in Figure 6 is using English as L2). The subject will generally use some gestures (ie. both hands and fingers as looking through the binoculars) when introducing a new topic (“binoculars”) both in L1 and L2. But there is a very important difference: in Figure 5 these gestures are co-occurring with the word (“binoculars”) but in Figure 6 the gestures are substituting the word.

So, the function of gestures in nonnative speakers is twofold: (1) to support the introduction of a new topic (as for native speakers) and (2) to make up for lack of vocabulary.

**Example 7. AmMan05L1.**

“... and he has uh the [**binoculars**]<sup>Gesture= both hands as looking through the binoculars</sup>”



FIGURE 5 AmMan05L1

**Example 8. SpMan02L2.**

“... in another window there is a::we can see the cat[Ø]<sup>Gesture= moving fingers as looking through a pair of binoculars</sup> looking through the:: through [**his**]<sup>Gesture= nodding</sup> I don't know how to:: and...”



FIGURE 6 SpMan02L2

Similarly, when the subject is introducing an old topic (“drain pipe” in Figures 7 and 8) he/she also uses some gestures. AmWoman06L1 (native speaker of English speaking in English) in Figure 7 moves her hands as if she were climbing the pipe and SpWoman03L2 (native speaker of Spanish speaking in English) in Figure 8 is pointing upwards with her right hand.

**Example 9. AmWoman06L1.**

“... so then he tries to climb the gutter, the [**drain pipe**]<sup>Gesture= as climbing the pipe</sup>, um granny ...”



FIGURE 7 AmWoman06L1

**Example 10. SpWoman03L2.**

“...and actually he enters in the hotel and he climbs the [**tube**]<sup>Gesture= pointing upwards</sup> he gets inside ...”



FIGURE 8 SpWoman03L2

Then, we will compare the Spanish speakers' behavior (speech and gesture) in English as L2 with their behavior in their mother tongue. In this way, we will be able to discern whether they use the same gestures and topic organization in both languages or, on the contrary, they deploy different gestures and topic organization in Spanish as L1 and in English as L2.

As we can see in examples 11, 12 and 13, the new topic may occur with some gestures, it does not matter if the subject is using his/her L1 or L2. Nevertheless, there are some differences. If we compare examples 11 and 12, we can see that the same subject (SpWoman01, native speaker of Spanish) used her fingers to indicate the size of something very small when introducing Tweety bird for the first time in her English narration (see Example 11) but she used no gestures at all when she did the same in her Spanish storytelling (see Example 12). But SpWoman01 also uses some gestures in her L1 when introducing a new topic: “*canalejas*” in example 13. In Figure 10 we can see how SpWoman01 moves her hands as indicating the flow of the water.

**Example 11. SpWoman01L2.**

“It is a story about the:: the:: [**Tweety bird**] <sup>Gesture= indicates the size of sthg very small with her fingers</sup> and Sylvester the cat.”



FIGURE 9 SpWoman01L2

**Example 12. SpWoman01L1.**

“*Pue::s la historia: es que*[**Piolín**] <sup>No gesture at all</sup> *está e::n la casa en u::n apartamento en un bloque de edificios y:: ...*”

**Example 13. SpWoman01L1.**

“... *por la::s las*[**canalejas**] <sup>Gesture= moves her hands indicating the flow of the water</sup> *de:: donde cae el agua de la lluvia ...*”



FIGURE 10 SpWoman01L1

The same is true when the subject is introducing an old topic. In Figures 11 and 12 we can see how SpMan02 (native speaker of Spanish) makes the same gesture for “cat” in both English and Spanish: he raises his left hand and does as if he were hitting something.

But, again, there is an important difference: when SpMan02 is talking in his L1 the gestures are co-occurring with the speech “*pega en la cabeza con el paraguas*” (in this case what the cat is undergoing) but when he is speaking in English the gestures are substituting these words. Again, we can see an example in which gestures are making up for lack of vocabulary).

#### Example 14. SpMan02L2.

“... but the:: the old lady that the owner the owner of the:: of the bird e:::h see the [cat] <sup>Gesture= raises his left hand and does as if he were hitting sthg</sup> a:::nd and he goes outside the:: the building ...”



FIGURE 11 SpMan02L2

#### Example 15. SpMan02L1.

“... y cuando sube va: va a coger el pájaro pero sale: eh una señora mayor y: [le] <sup>Gesture= raises his left hand and does as if he were hitting sthg</sup> pega en la cabeza con el paraguas ...”



FIGURE 12 SpMan02L1

Over the last few years, little attention has been paid to nonverbal communication in second language teaching and learning. Communication is more than just what we say, it is also how we say it, and how we move when we say it. If native speakers use not only verbal, but also non verbal mechanisms when communicating in their mother tongue, then, the two levels should be accounted for in second language teaching (Álvarez-Benito, 2002).

Our hypothesis is that we will find important differences between L1 and L2 speakers of English regarding topic organization. There are several reasons for us to support this hypothesis:

1) L2 speakers of English are not so fluent<sup>4</sup> as L1 speakers and, consequently, they will make use of different strategies to compensate their lack of fluency (Vandergrift, 1997). One typical strategy may be using structures and patterns from their mother tongue. For example, if we have a construction of a verb and a single argument, the expected sentence structure in English would be “Argument (subject) + verb” (“My father has arrived”). This sentence structure can also be used in Spanish (“*Mi padre ha llegado*”) but an additional word order is also possible: “verb + argument (subject)” (“*Ha llegado mi padre*”). Besides, the second construction is preferred in Spanish when the argument is new information.



**Example 16. SpWoman04L2. English as L2 with structure typical of Spanish.**

“It appears a little bird” (It + verb + NP)

In narrations in Spanish as L2, we also find structures typical of English. One common mistake we find in Spanish is the use of the negative particle “no” following the verb “ser” instead of preceding it. The reason is again the difference between English and Spanish structures. A sentence like “It was not a good idea” would be translated into Spanish as “*No era una buena idea*” (tr. “No was a good idea”). As we can see, the negative particle follows the verb “to be” in English, whereas in Spanish it precedes the verb “ser”. This can be noticed in the example below.

**Example 17. AmWoman06L2. Spanish as L2 with structure typical of English.**

“... *pero era no la idea de Sylverter*”.

2) If verbal structure is different in English and Spanish, we have to think that the speech-gesture structure must also be different. We are interested in examining the following questions: Do English and Spanish speakers use the same amount of gestures in English as L1 and as L2? If not, do Spanish speakers use the same amount of gestures in Spanish (L1) and in English (L2)? We are also interested in examining the speech-gesture structure of different topic organizations in English and Spanish. Do we find a different speech-gesture structure in English and Spanish? If different, do non-native speakers of English make use of the same speech-gesture structure in Spanish as L1 and in English as L2? Does the analysis of the speech-gesture relationship give us any information about topic organization that analysis of speech alone would not? We will try to give an answer to all these questions in the discussion section below and we expect our findings may shed new light on second language acquisition and, more specifically, on the teaching and learning of the speech-gesture structure in topic organization.

**METHOD****Participants**

Ten Spanish and ten American subjects aged 19-21 participated in this experiment. Spanish subjects were all undergraduate students at the University of Seville, and American subjects were undergraduate students who were spending one academic year at the University of Seville.

In order to assess the overall level of the language competence of our subjects (Canale, 1987; Hymes, 1972 and Halliday, 1978), we used one type of test method widely used by language testers called “performance test”. In this type of test, the test takers are expected to replicate the subjects’ language performance in non-test situations (for example, Jones 1985a, 1985b; Wesche 1985). The oral interview and essay writing are typical examples of the procedures normally used in this type of performance tests. For that reason, we interviewed all our subjects and, subsequently, we asked them to write an essay about a film they have recently watched. The interview consisted of personal and academic questions which helped us to have an overall idea of their level of fluency and the courses and exams they had already taken in English/Spanish as a foreign language.

During this oral interview, they had to do both: answer yes-no questions and offer supported opinions. In relation to the essay, we decided to ask them to write a summary of a film they had previously seen because the task they were expected to fulfil in our experiment was to narrate a cartoon they had already watched (or another subject had already told him/her). This could help us to better determine his/her future skills in this type of task. Finally, it has to be highlighted that we have used a criterion-referenced language test (in contrast to a norm-referenced language test). The goal of this type of test is not to maximize differences in performance among examinees -this is the aim of norm-referenced language tests- but to determine only the extent to which a given subject can or cannot perform a specific set of tasks. For our experiment, we first selected those subjects which had successfully fulfilled these two tasks and then we limited the number to ten in each group.

**Materials and Procedure**

Participants were asked to watch a 7 minute long animated cartoon about Sylvester the Cat and the Tweety Bird entitled *Canary Row* (Warner Brothers, 1950), whose recurrent theme is the cat’s continuous and unsuccessful attempts to catch the little bird. Then the participants were asked to narrate what they had seen to a partner, who is also a native speaker of the subject’s language.

So when the subject narrating the story was Spanish, the partner was also Spanish, and when the subject was American, his or her partner was American. Narrations were videotaped<sup>5</sup>.

Subjects watched the animated cartoon twice and they gave written consent for videotaping and subsequent assessment. The first time they watched the cartoon, they were asked to describe the content in their second language (L2) (Spanish for American subjects, and English for Spanish subjects). The second time, which takes place one week after the first, they were asked to narrate the story in their mother tongue (L1). This experiment is part of a more ambitious project<sup>6</sup> in which we try to explore verbal and nonverbal strategies used by American and Spanish subjects in their narrations, both in their L1 and L2. In this paper, however, we focus on the differences between English as L1 and English as L2. Besides, in order to investigate the possible reasons for some of the Spanish subjects' behavior in English, the Spanish narrations are also taken into account. As we have already mentioned, our main interest is second language acquisition, and more specifically, teaching and learning English as an L2. That is the reason why, in this paper, we also take Spanish narrations as L1 into account, since Spanish may influence our subjects' behavior in English as L2.

All the videotaped narrations in L1 and L2 were transcribed by, at least, two different transcribers (all of them teachers of English as L2) independently. Discrepancies were resolved by watching and discussing the sections of the videos together:

- a) narrations in English as L1 (one American, one British and two Spanish transcribers)
- b) narrations in English as L2 (one British and two Spanish transcribers)
- c) narrations in Spanish as L1 (two Spanish transcribers).

Analysis of the videotapes was carried out in several stages. The transcripts were coded along the following dimensions:

- 1) Discourse Structure (see Figure 1 below): The whole speech has been broken up into utterances and then, utterances have been grouped into three stages (explained in detail after Figure 13):
  - 1.a. Opening Discourse.
  - 1.b. Description of Scenes.
  - 1.c. Closing Discourse.
- 2) Identification and counting of gestures in Opening Discourse. Following McNeill's annotation system ([http://mcneilllab.uchicago.edu/pdfs/Coding\\_Manual.pdf](http://mcneilllab.uchicago.edu/pdfs/Coding_Manual.pdf)), we square-bracket gesture phrases occurring within this first stage called 'opening discourse'. When speech and gesture co-occur, bold font is used for the speech with which the stroke phase co-occurs.
- 3) Identification and counting of gestures in Change of Scene. These gestures are the ones used to signal the transition from one episode or scene into another.
- 4) Identification and counting of gestures in Closing Discourse. Gestures in closing discourse signal the end of a subject's description or narration.
- 5) Identification of New Topics (underlined in the transcript) and distinction between 'gestured new topics' and 'ungestured new topics' (underlined with o without square brackets, respectively, in the transcript).
- 6) Identification of Old Topics (double underlined in the transcript) and distinction between 'gestured old topics' and 'ungestured old topics' (double underlined with o without square brackets, respectively, in the transcript).
- 7) Classification of 'gestured new topics' depending on whether they occur with action verbs (using the label "Act" in superscript) or state verbs (the label "St" is given in superscript).
- 8) Classification of 'gestured old topics' depending on whether they occur with action verbs or state verbs (the labels "Act" and "St" are given in superscript, respectively).
- 9) Analysis of 'gestured new topics' to identify and count pictograms (marked by capital letters). A pictogram is a simplified picture of the thing represented. In this article, the term pictogram refers to a gesture which represents an object, activity or idea by illustration. On a copy of the transcript developed in step 7, we analyse only those new topics which co-occur with gestures which illustrate objects, activities or ideas.
- 10) Analysis of 'gestured old topics' to identify and count pictograms (marked by capital letters). On a copy of the transcript developed in step 8, we analyse only those old topics which co-occur with gestures which illustrate objects, activities or ideas.
- 11) Counting of all gestures produced in narrations.

The coding for the above mentioned categories turned out to be straight forward.

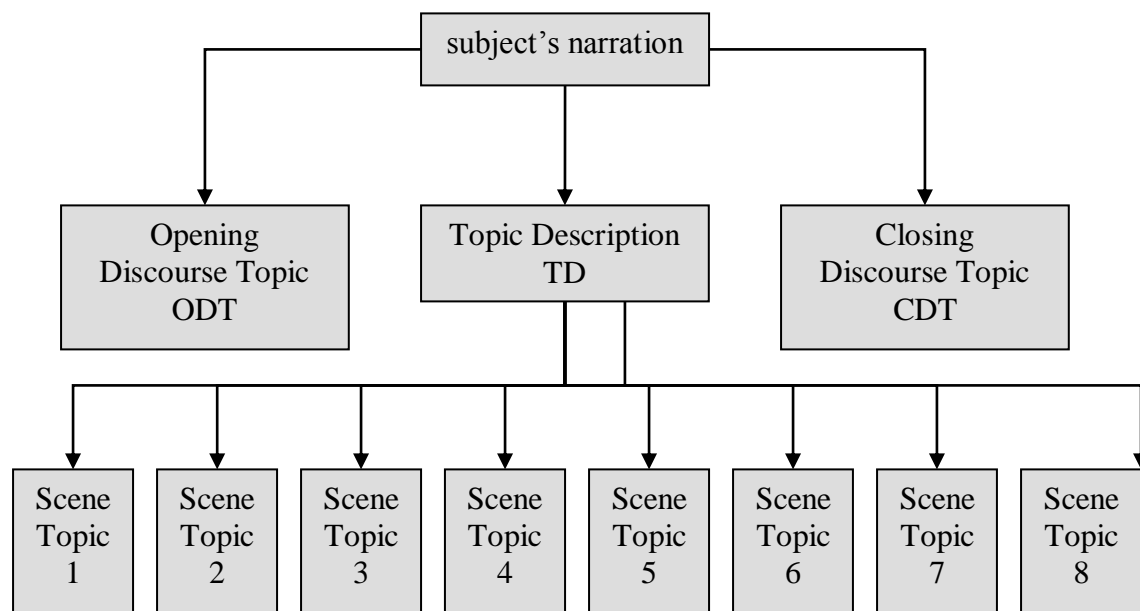


FIGURE 13

When talking about the discourse structure of a narrative, it is worth mentioning two important models (Labov's and Mandler & Johnson's) on which we have based our division into: opening discourse, description of scenes and closing discourse.

According to Labov (1972) the basic structure of a narrative is composed of six ordered units: abstract, orientation, complicating action, evaluation, result or resolution and (optional) coda (Labov 1972, p.363). This author explains that a complete narrative begins with an abstract, followed by an orientation, it then proceeds to the complicating action, evaluation, resolution and coda. Labov (1972, p. 363) explains that the "abstract" is significant as it "encapsulates the point of the story" by allowing the narrator to "summarize the whole story" and adds that "it is not uncommon for narrators to begin with one or two clauses summarizing the whole story". In "orientation", reference is made to the identification in some way of the time, place, persons and their activity or the situation in which they find themselves all within the first several narrative clauses. The "evaluation" indicates the *raison d'être* of the narrative: why it was told, and what the narrator is getting at. The "coda" refers to the way a narrative is concluded. Labov (1972 p. 365) offers examples such as "And that was that" or "And that- that was it, you know." It signals the end of a narrative and bridges the gap between the moment of the narration and the present.

In relation to Mandler and Johnson's model (1977), these authors maintain that the structure of a narrative is governed by a set of rules. They use the term 'story schema' to refer to a set of expectations about the internal structure of stories. According to Mandler and Johnson (1977) a story comprises a setting (similar to Labov's "abstract") and an event structure (similar to Labov's orientation). The setting introduces the protagonist, other possible characters, the time and place of the story. The event structure has a beginning ("initiating event") which introduces the first episode of the narrative. An episode consists of three causally connected nodes: beginning (may consist of one or more events), cause and development. Basically, a beginning causes the protagonist to respond in some way to an event, forming the development. The protagonist always tries to find a way to realize his/her goal. If the protagonist achieves his/her goal, the episode may cause a close, but if he/she does not succeed in his/her purpose, he/she will try again. Goal paths are recursive. The protagonist may attempt several times to achieve the same goal.

When we use the term "opening discourse", we mean the same as Labov's "abstract" or Mandler and Johnson's "setting". In the "opening discourse" the subject introduces the protagonist (Sylvester the Cat) and the rest of the characters (the Tweety Bird and the Granny), the time and place of the story.

The “description of the scenes” corresponds to Mandler and Johnson’s “event structure”. Our specific event structure is made up of eight episodes (we call them “stories”). Sylvester the Cat has a goal, which is to catch the bird, and this causes him to respond in some ways, forming the development. He always tries to find a way to realize his goal and when he does not succeed in his purpose, he tries again. He attempts several times to achieve the same goal (eight times in this case).

Finally, the “closing discourse” corresponds to Labov’s “coda”. This closing discourse is made up of a phrase or a clause which signals the end of the narrative and bridges the gap between the moment of the narration and the present. Our subjects used utterances such as “that’s all” or “that’s the end of the story” or no words at all but, instead, specific gestures indicating the end of the narration.

Room characteristics where subjects were videotaped, equipment used and setting arrangements are shown in Figure 14 below:

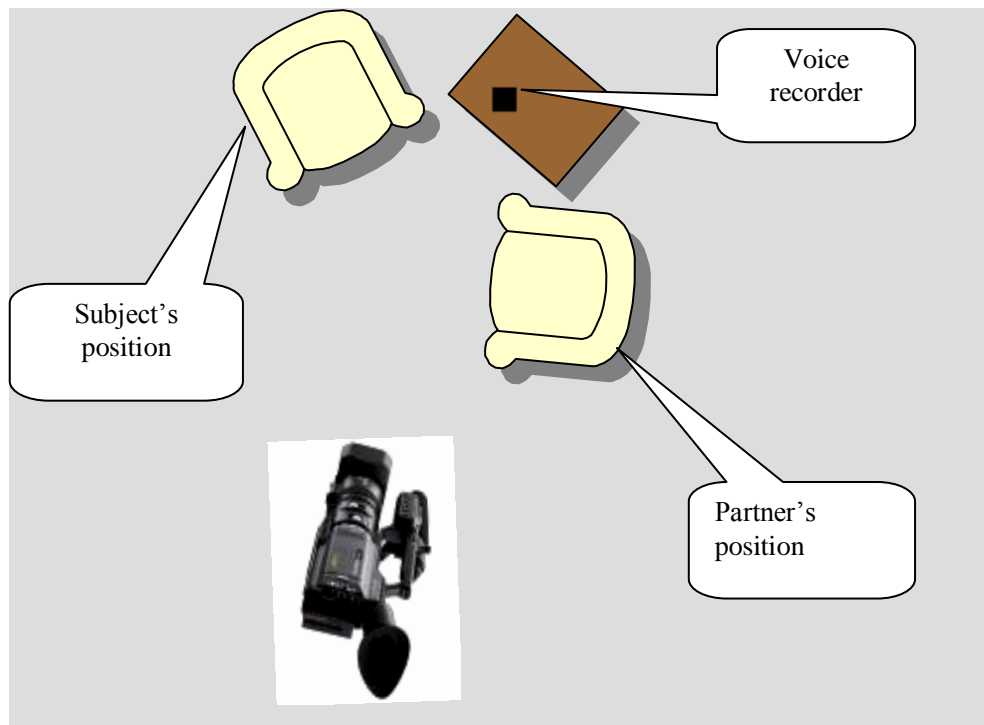


FIGURE 14

The reason for choosing this particular cartoon and, consequently, following McNeill’s methodology (1992)<sup>7</sup>, was that it has been commonly used by many scholars (Stam, 1998; Özyürek and Özçalıflkan, 2000; Kita and Özyürek, 2003, etc.) to analyze the gesture-speech relation in different languages (English, Spanish, Turkish, Japanese, etc.). We thought this would enable us to easily compare results across languages in the future, once we have a detailed analysis of narrations and quantitative data. The participants had been previously told that the purpose of our experiment was to contrast their memory in L1 and L2<sup>8</sup>. With that purpose in mind, they would try to remember as much as they could of the eight episodes in the cartoon and, consequently, their narrations would be more complete and descriptive. The listener’s role in this experiment is two-fold:

- 1) He/She may be used as a feedback by the speaker, since the latter can see whether his/her message is or is not understood by looking at the partner’s facial gestures.
- 2) As we mentioned earlier, this experiment is part of a more ambitious project and therefore, in the future, we have the intention of analyzing whether there are any differences between the narrations of those subjects who had watched the cartoon and the narrations of those who had just listened as partners but had not watched the cartoon.

### Criteria for Data Analysis

As it has been previously stated, we have followed an integrative perspective of topic analysis. We have taken three criteria into account: syntactic, semantic and gestural.

The syntactic level is related to the analysis of elements in terms of their position and function in the sentence structure. We distinguish between those elements preceding the verb and the arguments following the verb. This classification is important in relation to the topic because, as we mentioned in the introduction of this paper, elements are generally placed at different positions depending on whether they are new or given information.

Within the syntactic level of our analysis, we will try to discover the syntactic construction typical of a specific information structure.

At the semantic level we will look into the semantic features of the structures resulting from the analysis of the previous level. We will analyze the way information is presented, checking whether new topics and old topics occur with action or state verbs.

At the gesture level, we will study the gesture structure that co-occurs with speech. We are interested in finding out whether gestures are more likely to appear with new or old topics. With this purpose in mind, we will mainly center our analysis on gesture strokes and, consequently, we will neither annotate gesture phrases nor divide gesture phrases into phases (preparation, prestroke, stroke, poststroke and retraction) (Kendon, 2004). According to McNeill (to appear in the *Cambridge Encyclopedia of the Language Sciences*, “Gesture” [http://mcneilllab.uchicago.edu/pdfs/cambridge\\_encyclopedia.pdf](http://mcneilllab.uchicago.edu/pdfs/cambridge_encyclopedia.pdf), p.3) a gesture is “a regular succession of phases: preparation, prestroke hold, stroke, poststroke hold, and retraction, of which only the stroke is obligatory...”. Of these five phases, all are optional except for the stroke “Gesture phases are organized around the stroke, everything is designed to present it in proper synchrony with its co-expressive speech segment(s).”

The examples below illustrate some gesture stages:

#### Example 18. AmMan05L1.

“Then eh, Sylvester (rolls)<sup>prestroke</sup> (down)<sup>stroke</sup> (the)<sup>poststroke</sup> street”

#### Example 19. SpWoman01L1.

“Y entonces el (gato)<sup>preparation</sup> (baja la calle)<sup>prestroke</sup> (rodando)<sup>stroke</sup> (hasta)<sup>poststroke</sup> que ...”

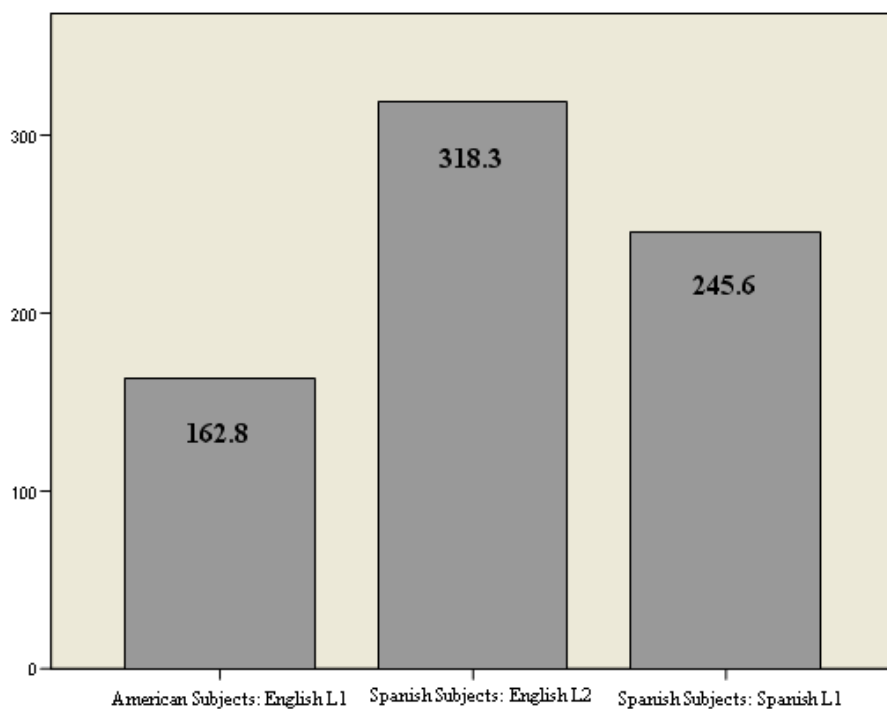
Finally, once we have studied the syntactic, semantic and gesture patterns of topic organization, we will look for possible differences and similarities between:

- 1) English as L1 and Spanish as L1;
- 2) English as L1 and English as L2; and
- 3) Spanish as L1 and English as L2.

### RESULTS

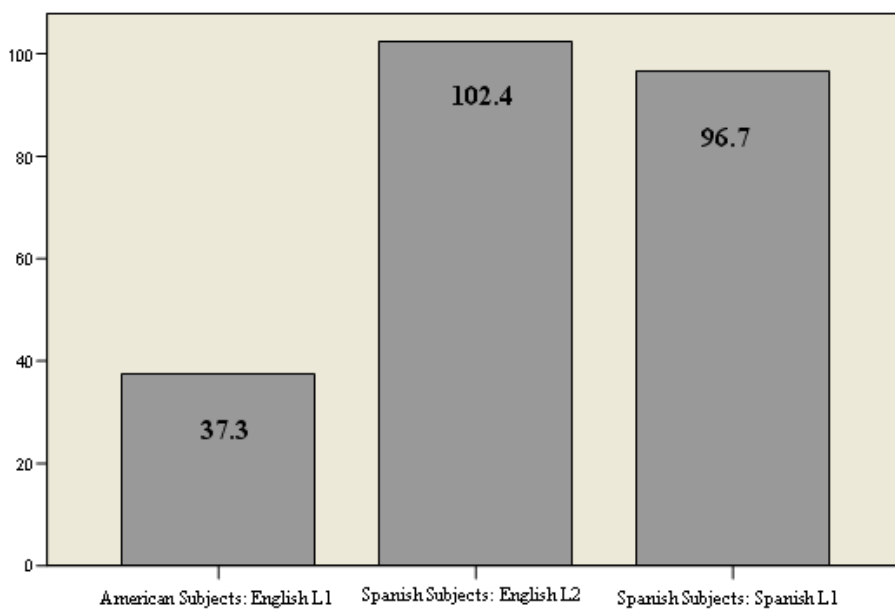
In Figure 15 we can see the media time in seconds of the subject’s narrations. The differences between American Subjects speaking English as L1 (Americans L1) and the Spanish subjects speaking English as L2 (Spanish L2) and between Americans L1 and Spanish L1 were statistically significant<sup>9</sup> (Mann-Whitney U test,  $P$ , 0.001 and 0.008, respectively), whereas the differences between Spanish L1 and Spanish L2 were not (Mann-Whitney U test,  $P$ , 0.290).

As can be noticed in Figure 15, Spanish informants spend more time than Americans to narrate the eight stories, both in Spanish as L1 and in English as L2.



**FIGURE 15: Average time in seconds per subject's narration**

Regarding the total number of gestures occurring in the narrations, as in the previous section, the differences between Americans L1 and Spanish L2 and between Americans L1 and Spanish L1 were statistically significant (Mann-Whitney U test,  $P = 0.001$  and  $0.001$ , respectively), whereas the differences between Spanish L1 and Spanish L2 were not (Mann-Whitney U test,  $P = 0.940$ ). Figure 16 shows the media number of gestures per informant in the narrations.

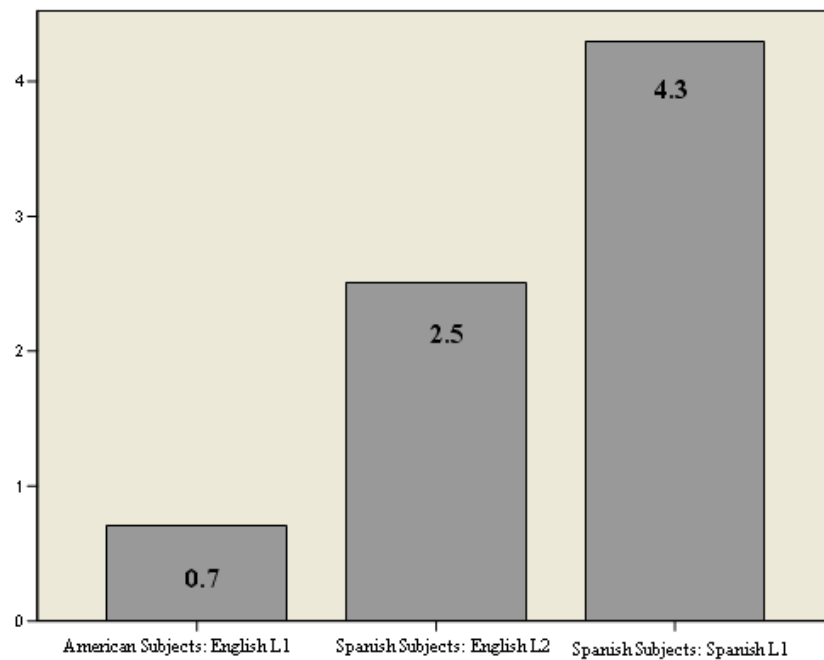


**FIGURE 16: Average number of gestures per informant**

Taking into account the time spent per informant in the narration (Figure 15), as well as the media number of gestures (Figure 16), the media of gestures per second per subject is as follows: 1) American subjects L1 “0.23”; 2) Spanish subjects L2 “0.32”; and 3) Spanish subjects L1 “0.39”.

Concerning the use of gestures in opening discourse and closing discourse, the differences have also proved to be statistically significant between Americans L1 and Spanish L2 (Mann-Whitney U test,  $P = 0.010$  for opening discourse and  $0.011$  for closing discourse) and between Americans L1 and Spanish L1 (Mann-Whitney U test,  $P = 0.001$  for opening discourse and  $0.011$  for closing discourse), but not between Spanish L1 and Spanish L2 (Mann-Whitney U test,  $P = 0.146$  for opening discourse and  $0.967$  for closing discourse). Figures 17 and 18 show the media number of gestures per informant in opening discourse and closing discourse, respectively.

As we can notice in Figures 17 and 18, the amount of gestures in opening discourse is higher than in closing discourse in all the Spanish subjects' narrations, both in Spanish as L1 and in English as L2. On the contrary, the American Subjects' narrations contain the same amount of gestures in opening discourse and in closing discourse.



**FIGURE 17: Average number of gestures in Opening Discourse**

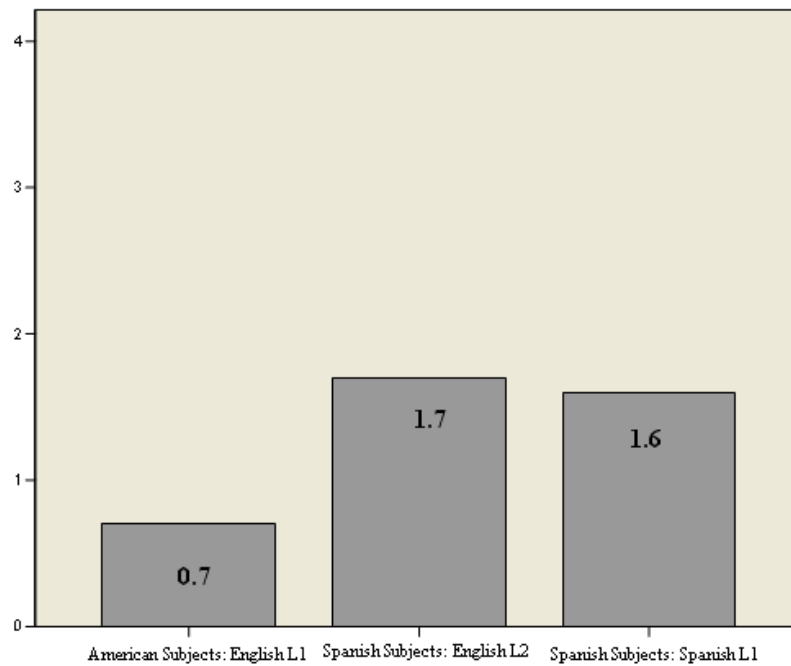


FIGURE 18: Average number of gestures in Closing Discourse

Regarding the amount of new topics in the narrations, there were no statistically significant differences between Americans L1 and Spanish L2 (Mann-Whitney U test,  $P = 0.240$ ) but the differences were statistically significant between Spanish L2 and Spanish L1 (Mann-Whitney U test,  $P = 0.010$ ) and between Americans L1 and Spanish L1 ( $P = 0.034$ ). As far as gestured new topics are concerned, there were statistically significant differences between Americans L1 and Spanish L2 ( $P = 0.004$ ) and between Americans L1 and Spanish L1 ( $P = 0.008$ ), but there were no statistically significant differences between Spanish L2 and Spanish L1 ( $P = 0.384$ ). Concerning the use of pictograms (i.e. symbols which represent an object or a concept by illustration) with new topics, the differences were statistically significant between Americans L1 and Spanish L2 ( $P = 0.002$ ) and between Spanish L2 and Spanish L1 ( $P = 0.002$ ), but not between Americans L1 and Spanish L1 ( $P = 0.375$ ). Figure 19 shows the media per subject of new topics in the narrations, gestured new topics and pictograms with new topics.

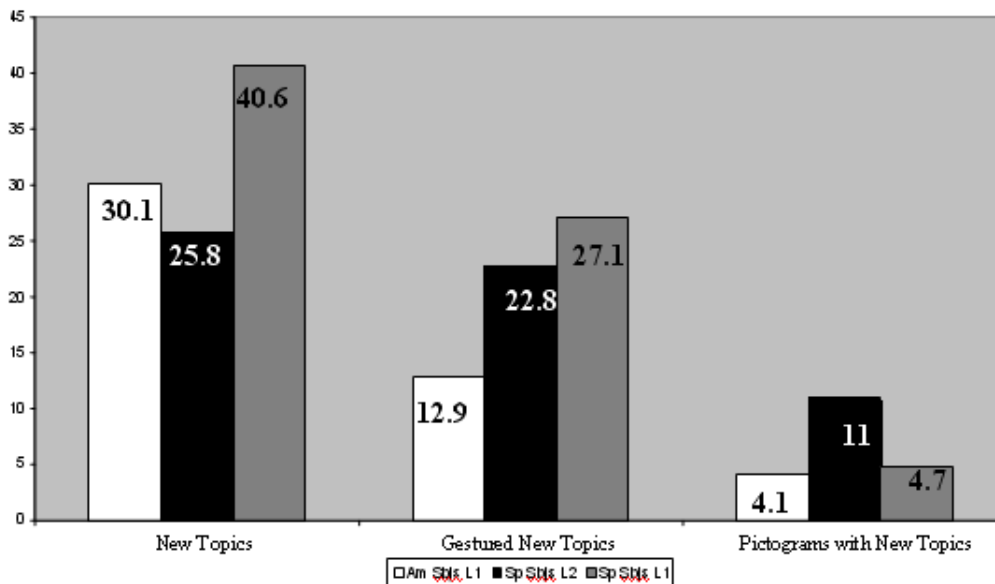


FIGURE 19: New Topics



Concerning the amount of old topics in the narrations, there were no statistically significant differences between Americans L1 and Spanish L1 (Mann-Whitney U test,  $P = 0.059$ ) but the differences were statistically significant between Spanish L2 and Spanish L1 (Mann-Whitney U test,  $P = 0.007$ ) and between Americans L1 and Spanish L1 ( $P = 0.016$ ). Regarding gestured old topics, there were statistically significant differences between Americans L1 and Spanish L2 ( $P = 0.000$ ) and between Americans L1 and Spanish L1 ( $P = 0.001$ ), but there were no statistically significant differences between Spanish L2 and Spanish L1 ( $P = 0.240$ ). As for the use of pictograms with new topics, the differences were statistically significant between Americans L1 and Spanish L2 ( $P = 0.001$ ) and between Americans L1 and Spanish L1 ( $P = 0.028$ ), but not between Spanish L2 and Spanish L1 ( $P = 0.066$ ). Figure 20 shows the media per subject of old topics in the narrations, gestured old topics and pictograms with old topics.

It is evident that the amount of pictograms<sup>10</sup> with new topics is higher than the amount of pictograms with old topics in the three groups, English as L1, English as L2 and Spanish as L1. At the same time, we can also notice that the amount of pictograms with gestured new topics in English as L2 is also higher than in English as L1 and in Spanish as L1 (11 in front of 4.1 and 4.7 per informant, respectively). In contrast, when informants, native and nonnative, introduce an old topic, the percentage of pictograms decreases significantly: 0.5 per subject in the group of Americans L1, 3.8 per subject in the group of Spanish L2, and 2 per subject in the group of Spanish L1.

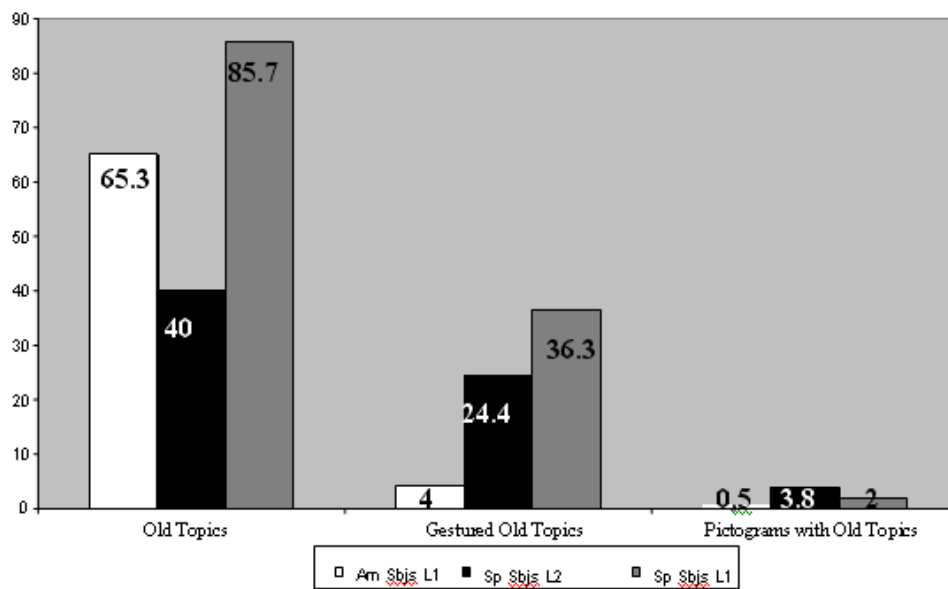
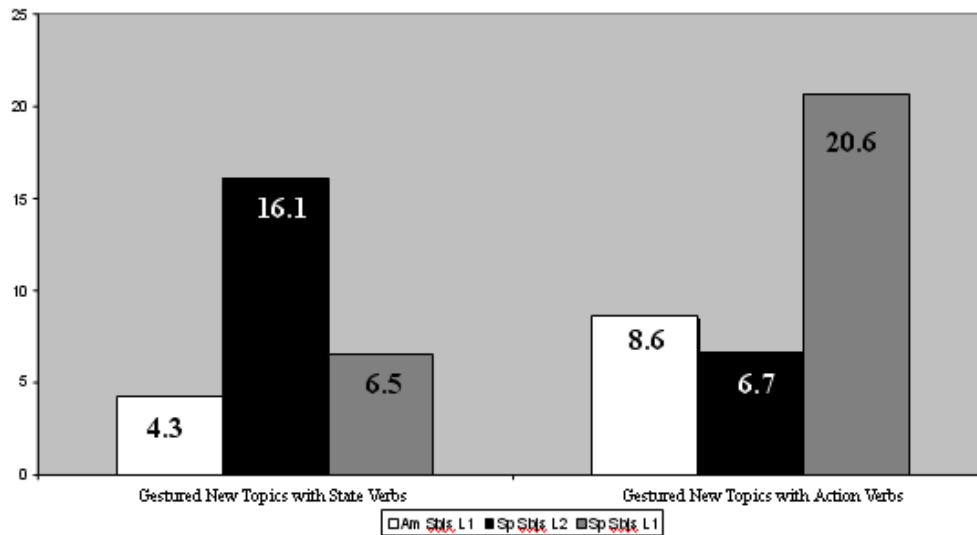


FIGURE 20: Old Topics

With regard to the use of gestured new topics with state verbs, the differences were statistically significant between Americans L1 and Spanish L2 (Mann-Whitney U test,  $P = 0.000$ ), and between Spanish L2 and Spanish L1 ( $P = 0.001$ ) but they were not found to be statistically significant between Americans L1 and Spanish L1 ( $P = 0.059$ ). As for the use of gestured new topics with action verbs, the differences were found to be statistically significant between Spanish L2 and Spanish L1 ( $P = 0.002$ ) and between Americans L1 and Spanish L1 ( $P = 0.004$ ) but not between Americans L1 and Spanish L2 ( $P = 0.195$ ). Figure 21 below shows the media amount of gestured new topics with state verbs and with action verbs in the three groups of subjects.

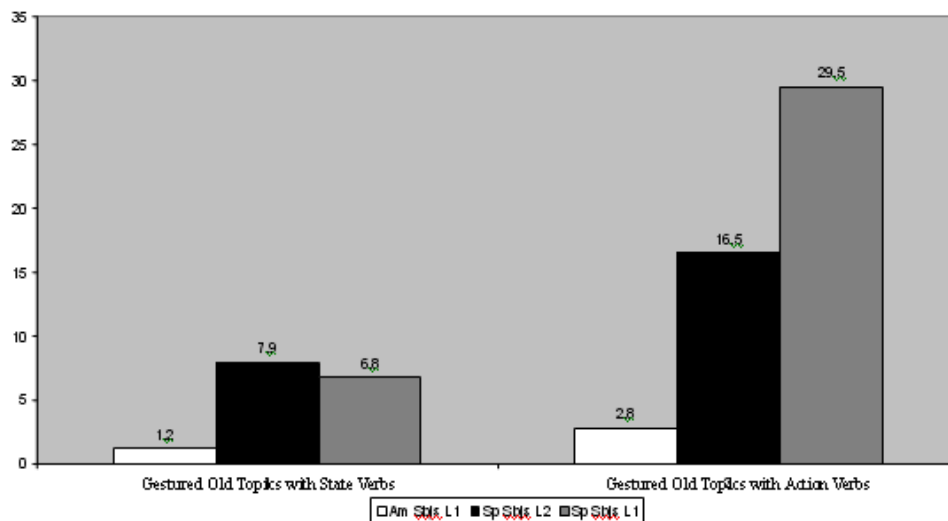
As can be observed in Figure 21, American and Spanish subjects tend to use more gestured new topics with action verbs than with state verbs in their L1. In contrast, the group of Spanish subjects speaking English as L2 tends to use more gestured new topics with state verbs than with action verbs.



**FIGURE 21: Gestured New Topics with Action and State Verbs**

In relation to the use of gestured old topics with state verbs, the differences were statistically significant between Americans L1 and Spanish L2 (Mann-Whitney U test,  $P = 0.000$ ), and between Americans L1 and Spanish L1 ( $P = 0.002$ ) but not between Spanish L2 and Spanish L1 ( $P = 0.676$ ). As for the use of gestured old topics with action verbs, the differences were found to be statistically significant between Americans L1 and Spanish L2 ( $P = 0.000$ ) and between Americans L1 and Spanish L1 ( $P = 0.000$ ) but not between Spanish L2 and Spanish L1 ( $P = 0.095$ ).

Figure 22 below shows the media amount of gestured old topics with state verbs and with action verbs in the three groups of subjects.



**FIGURE 22: Gestured Old Topics with Action and State Verbs**

Table 1 shown below gives statistical information about all the variables that have entered our analysis.



TABLE 1: Statistical Information about Variables						
Variables	American Subjects: English L1 / Spanish Subjects: English L2		Spanish Subjects: English L2 / Spanish Subjects: Spanish L1		American Subjects: English L1 / Spanish Subjects: Spanish L1	
	Mann-Whitney U	Asymp. Sig. (2-tailed)	Mann-Whitney U	Asymp. Sig. (2-tailed)	Mann-Whitney U	Asymp. Sig. (2-tailed)
Time used in the narration	6,000	,001	36,000	,290	15,000	,008
Total number of gestures	7,000	,001	49,000	,940	7,500	,001
Gestures in Opening Discourse	17,000	,010	31,000	,146	6,000	,001
Gestures in Change of Scenes	48,000	,879	35,500	,271	31,000	,149
Gestures in Closing Discourse	19,000	,011	49,500	,967	19,000	,011
Gestures in Change Scene 0-1	30,000	,081	20,500	,015	34,500	,181
Gestures in Change Scene 1-2	36,000	,256	40,000	,418	46,000	,744
Gestures in Change Scene 2-3	31,500	,108	38,500	,348	47,500	,830
Gestures in Change Scene 3-4	23,000	,021	41,000	,475	27,500	,045
Gestures in Change Scene 4-5	47,000	,807	48,000	,876	46,000	,745
Gestures in Change Scene 5-6	37,000	,244	39,000	,383	44,500	,659
Gestures in Change Scene 6-7	25,000	,042	15,000	,006	33,000	,156
Gestures in Change Scene 7-8	9,000	,001	11,500	,002	40,000	,432
New Topics in the narration	34,500	,240	16,000	,010	22,000	,034
Gestured New Topics	12,000	,004	38,500	,384	15,000	,008
Old Topics in the narration	18,000	,016	14,500	,007	25,000	,059
Gestured Old Topics	,000	,000	34,500	,240	5,000	,001
Pictograms with New Topics	9,500	,002	9,000	,002	38,500	,375
Pictograms with Old Topics	7,500	,001	26,000	,066	22,500	,028
Gestured NT with state verbs	,500	,000	5,000	,001	25,500	,059
Gestured NT with action verbs	33,000	,195	8,500	,002	12,000	,004
Gestured OT with state verbs	3,000	,000	44,500	,676	9,500	,002
Gestured OT with action verbs	2,000	,000	28,000	,095	1,000	,000
Number of Scenes described	19,000	,015	24,500	,047	42,000	,515

## DISCUSSION

As we mentioned above in the methodology section, our subjects' narrations follow the structure: opening discourse (OD) + topic discourse (TD) + closing discourse (CD).

In general, as has been observed in the results in the previous section, the average of gestures per informant in English as L1 is manifestly lower than the average of gestures per informant in English as L2 (37.3 vs. 102.4). This was expected to be so, since the use of gestures is generally associated to a lack of fluency of non-native speakers (see Álvarez-Benito and Íñigo-Mora, 2005). When a subject does not have the linguistic strategies necessary to express his/her ideas in a foreign language, he/she has to substitute them for nonverbal strategies. Despite that, we also have to consider cultural reasons because Spanish speakers also used more gestures in their L1 (96.7) than American subjects in their L1 (37.3). Still, we have to take into account both factors (i.e. lack of fluency and cultural reasons) because Spanish speakers used more gestures in their L2 than in their L1 (102.4 vs. 96.7).

As regards opening discourse, it is interesting to note that the way in which Spanish subjects started their narrations is completely different from the American style. Whereas the first ones started with the word "story" in their English narrations and "*historia*" in their Spanish ones, American subjects began directly with the names of the main characters (i.e. Tweetie Bird and Sylvester). Spanish subjects used the following expressions in their English opening discourse:

**Example 20. SpMan02L2.**

“... eh first eh when the story [**began**<sup>Act</sup>] <sup>Gesture= opens his arms and touches his nose</sup> ...”



FIGURE 23 SpMan02L2

**Example 21. SpWoman01L2.**

“... e::m it is a [**story**] <sup>Gesture= sits comfortably</sup> about ...”

**Example 22. SpWoman02L2.**

“... the story is about a [**bird**] <sup>Gesture= puts her left hand on her left leg</sup> ...”



FIGURE 24 SpWoman02L2

**Example 23. SpWoman03L2.**

“... the story [**starts**<sup>Act</sup>] <sup>Gesture= she shakes</sup> when ...”

And in their Spanish narrations they used expressions like:

**Example 24. SpMan02L1.**

“... voy a conta:r la [**historia**] <sup>Gesture= raises his left hand</sup> de los dibujos animados que ...” (tr. “I’m going to tell the story of the cartoons that”).



FIGURE 25 SpMan02L1

**Example 25. SpWoman01L1.**

“... pue::s la [historia:] <sup>Gesture= looks upwards</sup> es que ...” (tr. “So the story is that”).



FIGURE 26SpWoman01L1

**Example 2. SpWoman02L1.**

“... e::hm bueno la historia es<sup>St</sup> sobre [un:] <sup>Gesture= looks to the left</sup> ...” (tr. “e::hm well the story is about”).

So, we can say that there is a clear transfer of style in the case of Spanish subjects. In fact, they copied not only the verbal but also the nonverbal style from their mother tongue.

Even though the type of gesture varies (ie. some of them moved his/her hands, others the whole body, others averted the gaze, etc.), there is a common feature: all of them were still (even when introducing themselves) until they had to start their narrations.

Contrarily to that, American subjects started in the following way:

**Example 27. AmMan05L1.**

“... so [Sylvester] <sup>Gesture= looks to the left</sup> is uh looking<sup>Act</sup> ...”



FIGURE 27 AmMan05L1

**Example 28. AmWoman06L1.**

“... um, well, [Twee] <sup>Gesture= pointing to the left and to the right</sup> yeah Tweetie is in ...”



FIGURE 28 AmWoman06L1

**Example 29. AmWoman08L1.**

“... it is a, a [**Tweety bird**] <sup>Gesture= looks upwards and moves fingers</sup> and he saw ...”

In relation to their movements, they do not differ considerably from the Spanish subjects' gestures. They were also still until they started their narrations. The only difference is that whereas most Spanish subjects' gestures accompanied the word “story”, these gestures were co-articulated with the names of the main characters of the story in the American subjects' narrations.

The differences between the group of Spanish subjects speaking English as L2 and Spanish as L1 were statistically insignificant regarding the “Gestures in Opening Discourse” variable. But when we compare American subjects speaking English with Spanish subjects speaking either English or Spanish (it does not matter), the differences are statistically significant regarding this variable (i.e. “Gestures in Opening Discourse”). Therefore, verbal and nonverbal strategies go hand in hand: American and Spanish styles did not only differ verbally but also nonverbally.

It is also important to point out that none of our subjects made use of nonverbal signals in isolation in opening discourse. So, when gestures in opening discourse are present, they always appear together with speech. When a subject starts a description, he/she has to do two things at the same time: on the one hand, he/she has to organize his/her thoughts and, on the other hand, he/she has to coordinate his/her linguistic resources. Gestures play an important role in organizing ideas (McNeill, 2005) and, in this sense, we can say that many of them are not addressee-directed but speaker-directed<sup>11</sup>. As mentioned above, Spanish speakers used more gestures in their opening discourse both in English and in Spanish and this could be due to the fact that they also deployed a more elaborate way to start their narrations. Regarding the conclusion of the subjects' narrations, some of them did not use any verbal strategy in their closing discourse, they only used gestures. American subjects used no words at all (only gestures), or expressions such as “... that's it” or “... and then it ends”. For example, subject AmWoman07L1 only raised her left hand and laughed but used no concluding words at all:



FIGURE 29 AmWoman07L1

Spanish subjects uttered phrases such as “... *eso es todo*” (tr. “that’s all”) or “... *y ahí termina*” (tr. “and there it finishes”) or no verbal strategy at all (only gestures). In their English narrations all of them used the expression: “... that’s all” or no words at all (only gestures). For instance, SpWoman01L1 only joins her hands and laughs but utters no words:



FIGURE 30 SpWoman01L1

Similarly, SpWoman02L2 only balances her left leg and smiles when she concludes her story:



FIGURE 31 SpWoman02L2

Again, American subjects used less gestures than Spanish subjects (either in L1 or in L2) in closing discourse and that is why: (1) the differences between the groups of American Subjects speaking English as L1 and Spanish subjects speaking English as L2 or Spanish as L1 were statistically significant regarding the “Gestures in Closing Discourse” variable and (2) the differences between Spanish subjects speaking English as L2 or Spanish as L1 were statistically insignificant regarding the “Gestures in Closing Discourse” variable.

Nevertheless, it is very important to point out that the difference in number of gestures used by Spanish speakers (in L1 and L2) decreased considerably in closing discourse (in contrast to opening discourse). This is highly related to the type of expressions used. In opening discourse, Spanish speakers (in L1 and L2) used a more elaborate speech than American speakers (in L1) but now all of them deploy very similar phrases. As a matter of fact, one Spanish speaker used the words “... that’s all” in her Spanish narration (an example of code-switching). So, as the complexity of linguistic expressions decreases, the number of gestures also decreases and so the differences between the closings of American (in L1) and Spanish (in L1 and L2) subjects also decrease. The way in which somebody closes a narration is somehow formulaic.

At the syntactic level of our analysis, we tried to discover the typical syntactic construction of a specific information structure.

When all elements are new to the discourse, we have observed how Spanish speakers are more likely to use VS constructions (verb + subject) when they speak Spanish. So, we find sentences like:

**Example 30. SpWoman04L1.**

“... aparece un músico callejero ...” (VS) (tr. “appears a street musician”)

**Example 31. SpWoman06L1.**

“...y llega el:: conserje ...” (VS) (tr. “and arrives the receptionist”)

**Example 32. SpWoman01L1.**

“... está bailando un mono en la calle ...” (VSA) (tr. “is dancing a monkey in the street”)

This kind of constructions is commonly known as “all-new” constructions (Wehr, 1984). We have also noticed how the construction differs completely when the topic has already been introduced and so it becomes known or old information. In this sense, it is common that the same subject who had previously used a VS construction of the type “y aparece la dueña del pajarito” uses now an SV construction like:

**Example 33. SpWoman01L1.**

“... y la dueña del pajarito aparece otra vez y ...” (SVA) (tr. “and the bird’s owner appears again and”).

**Example 34. SpMan02L1.**

“... y la abuelita llega y ...” (SV) (tr. “and the old lady arrives and”)

The gesture structure found in this kind of “all-new” constructions varies depending on the semantics of the verb. When the verb of the VS construction is an action verb, the gesture is commonly associated to the action expressed by the verb:

**Example 35. SpWoman05L1.**

“... [está bailando]<sup>Gesture= subject dancing</sup> un mono en la calle...”  
 is dancing a monkey in the street

However, when the verb of the VS construction is an existential verb or a verb of appearance, the gesture, if any, is commonly associated and co-occurring with the subject, which is a new topic:

**Example 36. SpWoman06L1.**

“... había un mono<sup>Gesture=imitating a monkey</sup> en la calle ...”  
 there was a monkey in the street

The same applies to those constructions in which we have any state verb. In these cases, the gesture, if any, refers also to the new topic subject.

VS structures are not only usual in Spanish in those cases in which both verb and subject are new information but also when only the subject is a new topic. In these cases, the verb is, in a way, predictable.

According to Bolinger (1954a, 1954b) the reason for inverted subjects is that the verb is more predictable and less informative than the subject, and that is why it is placed first. For example, in the following sentences the verbs “estar” (“to be”) and “aparecer” (“to show up”) are very predictable and semantically weak:

**Example 37. SpWoman02L1.**

“... para entrar en la habitación donde están la abuela y el canario y ...” (tr. “in order to get into the room where are the granny and the canary and”).

**Example 38. SpWoman04L1.**

“... a continuación hay un:: aparece un músico callejero...” (tr. “after that there is a:: shows up a street musician”).

But Spanish subjects also used SV structures to introduce new topics, although not very frequently. In these structures, the gesture is associated to the verb because it is generally an action verb:



**Example 39. SpMan02L2.**

“... he first go [climbing] <sup>Gesture= subject climbing with his hands</sup> by the pipe but the ...”



FIGURE 32 SpMan02L2

**Example 40. SpMan02L2.**

“... and take a bowling ball and [throw] <sup>Gesture= subject throwing something</sup> the bowling ball ...”



FIGURE 33 SpMan02L2

In contrast, English speakers prefer the canonical structure SV (subject + verb) when introducing a new topic. So, we find sentences like:

**Example 41. AmMan05L1.**

“... Sylvester is uh looking at a birdwatcher society building ...”

**Example 42. AmWoman06L1.**

“... Twee yeah Tweety is in his cage in his apartment and Sylvester's across the street in the birdwatcher's society ...”

**Example 43. AmWoman06L1.**

“... granny comes along and hits him ...”

When new topics are introduced by American subjects, most gestures were related to the action of the verb because subjects mostly used action verbs:

**Example 44. AmMan05L1.**

“... then the uh grandma's there and [hits] <sup>Gesture= subject hitting</sup> Sylvester ...”



FIGURE 34 AmMan05L1

Apart from the canonical structure SV, we also find sentences such as:

**Example 45. AmWoman08L1.**

“... it is a Tweety bird and Sylvester movie ..”

**Example 46. AmWoman08L1.**

“... there is a title ...”

According to Downing and Locke (1995:224) “English has no morphological device for introducing new Topics. Syntactically, however, various devices exist ...” and then they mention five strategies:

- (1) Presentative adverbs such as “here, there, up, out” in sentences such as “Out went the light”.
- (2) Unstressed “there” with “be” or a presentative verb such as “emerge” or “appear” which have the same effect. For example: “There emerged from the cave a huge bear”.
- (3) When the subject is known, the direct object or predicator complement often introduces a new topic. Example: “What did you make of Elsa’s behavior?”
- (4) A statement that informs the hearer what the topic is going to be: “I want to talk to you about ...”
- (5) Inversion of relational clauses. Example: “Worst of all was the lack of fresh water”.

The use of the so-called “prop it” should be included in the second device mentioned above. This is a type of “empty it”, normally used in expressions of time (“It’s three o’clock”), atmospheric conditions (“It’s raining”) and distance (“It is a mile away from here”). As Downing and Locke explain (1995, p. 37) “... prop it ... is in fact a ‘presentative’ it similar to existential there and to ‘anticipatory’ it.” As we mentioned above, American subjects used both “unstressed there” and “prop it” in some instances - but not very often- when introducing a new topic. Surprisingly, this was the strategy mostly used by the Spanish subjects in their English narrations:

**Example 47. SpMan02L2.**

“... there is a cat persecuting him ...”

**Example 48. SpWoman03L2.**

“... there is a let- a something written that says ...”

**Example 49. SpWoman01L2.**

“... it is a story about the the Tweety bird and Sylvester the cat ...”

**Example 50. SpWoman01L2.**

“... it is like in a hotel ...”

As a matter of fact, this is the only device (from the above list) used by Spanish speakers in their English narrations. The reason for this choice is straightforward: it is a positive interference. There is a reasonable similarity between this type of structure and the Spanish VS pattern: “it” and “there” are empty (non-referential) elements and, from a semantic point of view, they could be dropped. This means that the “semantic pattern” of the English structure is “(empty subject)VS”. Contrary to that, American subjects did not limit themselves to this single strategy and used some others, such as presentative adverbs, in sentences like “... along comes a trolley”. When both Spanish and American subjects use these new topics again (so they are now old topics) they deploy the canonical SV structure in their English narrations. For example, Spanish subjects (SpMan02L2 and SpWoman02L2) utter sentences like “The cat eats the ball” (SVO) or “The bird is inside the jail” (SVA) and American subjects (AmMan05L1 and AmWoman08L1) state sentences such as “The Tweety bird gets a bowling ball” (SVO) or “Tweety bird is looking out of his window” (SVA).

In relation to the percentage of gestures with new and old topics in English as L1 and L2, it can be observed that Spanish and American subjects share a common feature: all of them used more gestures when introducing a new topic. The reason for this behavior is largely due to the fact that when someone is introducing a topic for the first time, he/she has to be as explicit as possible, because he/she is assuming that the receiver has no previous knowledge about it. Additionally, as it was also mentioned above, gestures play an important role in organizing ideas (McNeill, 2005) and many of these gestures are not only addressee-directed but also speaker-directed. Besides, we can also see that the percentage of gestures is ostensibly higher when the informant is a non-native speaker of English. As a matter of fact, the differences between the groups of American Subjects speaking English as L1 and the Spanish subjects speaking English as L2 were statistically significant regarding the “Gestured New Topics” variable (Mann-Whitney U test,  $P = 0.004$ ).

This fact could make us believe that this is due to Spanish speakers’ lack of fluency in their L2 but differences between Spanish subjects speaking English as L2 and Spanish as L1 were statistically insignificant regarding the “Gestured New Topics” variable (Mann-Whitney U test,  $P = 0.384$ ). This means that Spanish speakers always used more gestures when introducing a new topic than American speakers, it does not matter if they used their mother tongue (i.e. Spanish) or their L2 (i.e. English). One more fact supports the idea that this is mainly due to cultural reasons and not to lack of fluency: the differences between the groups of American Subjects speaking English as L1 and Spanish subjects speaking Spanish as L1 are statistically significant regarding the “Gestured New Topics” variable (Mann-Whitney U test,  $P = 0.008$ ).

At first sight, we could think that the number of gestured new topics used by Spanish subjects in their mother tongue is higher than in their L2 (27.1 vs. 22.8). However, after a detailed analysis of the data, it can be noticed that Spanish subjects used more gestured new topics in their L2 than in the L1 because the number of new topics introduced is much higher in their L1 (40.8) than in their L2 (25.8).

The situation with old topics is very similar:

1. The differences between the group of Spanish subjects speaking English as L2 and Spanish as L1 were statistically insignificant regarding the “Gestured Old Topics” variable (Mann-Whitney U test,  $P = 0.240$ ).
2. The number of gestures used by Spanish subjects in their mother tongue is even higher than in their L2 (36,3 vs. 24,4).
3. The differences between the groups of American Subjects speaking English as L1 and the Spanish subjects speaking Spanish as L1 are statistically significant regarding the “Gestured Old Topics” variable (Mann-Whitney U test,  $P = 0.001$ ).

This means that Spanish speakers always used more gestures than American speakers when introducing an old topic, it does not matter if they used their mother tongue (i.e. Spanish) or their L2 (i.e. English). Again, we can ascertain that differences are mainly due to cultural reasons and not to lack of fluency. Nevertheless, this does not mean that in some instances a Spanish speaker may use some gestures in his/her English narration when referring to an old topic. Compare examples 51, 52 and 53:

**Example 51. AmWoman08L1.**

“... and Sylvester puts on the bellhop clothes and goes up and he asks her for her bags and she’s like ...”

**Example 52. SpMan02L2.**

“... I’ll be in the lobby in five minutes or hethe cat takes the [luggage] Gesture= making out he is carrying some luggage takes the cage ...”



FIGURE 35 SpMan02L2

**Example 53. SpMan02L1.**

“... *salgo en en diez minutos nos vemos en en el lobby en en la entrada efectivamente entra por las maletas y ve ...*” (tr. “I’m leaving in in ten minutes I’ll see you in in the lobby in in the hall indeed she goes in for the luggage and sees”).

In all these extracts “the bags”, “the luggage” or “*las maletas*” are old topics, but only in the second extract (English as L2) the old topic is accompanied by a gesture (i.e. the speaker makes out he is carrying some luggage). Neither the American nor the Spanish speaker gestures when using her/his mother tongue. This is a clear example in which the Spanish speaker uses a gesture to help himself explain something in a foreign language.

With respect to the rate of pictograms with gestured new and old topics, it is evident that the percentage of pictograms<sup>12</sup> with new topics is higher both in English (as L1 and as L2) and in Spanish (as L1). It is very clear and useful to present something new using illustrations, our subjects normally used their hands to draw the shape of the object in the air. At the same time, we can also notice that the differences between the groups of American subjects speaking English as L1 and Spanish subjects speaking English as L2 were statistically highly significant regarding both the use of “Pictograms with New Topics” (Mann-Whitney U test,  $P = 0.002$ ) and the use of “Pictograms with Old Topics” (Mann-Whitney U test,  $P = 0.001$ ). One of the obvious reasons for the high rate of pictograms in Spanish subjects’ narrations is their limitation in vocabulary (pictograms replacing those verbal elements nonnative speakers do not know in the L2). In many cases, pictograms even co-occur with Spanish terms (*cartel, tubería, casillero, balancín*, etc.), which are included within descriptions in English. In example 54, we can see how a Spanish speaker’s gestures co-occur with the Spanish term “*pesa*” (“weight”):

**Example 54. SpMan01L2.**

“... and he throws a kind of I don’t know [**PESA**] Gesture: showing the shape of a weight ...”



FIGURE 36 SpMan01L2

In some other cases, pictograms even replace speech:

**Example 55. SpMan02L2.**

“... and the cat is hidden in [**PICTOGRAM**] Gesture: showing the shape of the reception desk the:: where the:: keys ...”



FIGURE 37 SpMan02L2

But, as we said before, Americans and Spanish speakers also used them in their L1s (see examples 56 and 57):

**Example 56. AmMan05L1.**

“... Sylvester is uh looking at a birdwatcher society building across to uh this hotel that Tweetie bird is in and he has uh the [**BINOCULARS**] Gesture: moving both hands pretending to be looking through a pair of binoculars) ...”



FIGURE 38 AmMan05L1

**Example 57. SpWoman01L1.**

“...y cuando sube coge Piolín una bola de jugar a los [**BOLOS**] Gesture:with both hands she shows the shape of something round) ...” (tr. “and when he goes up catches Piolin a bowling ball”).



FIGURE 39 SpWoman01L1

Even though American and Spanish subjects also used pictograms in their L1s, when comparing their number with new topics in English as L2 and Spanish as L1, we can see that the differences are statistically significant: Spanish speakers used many more pictograms in English as L2 (Mann-Whitney U test,  $P = 0.002$ ).

Sometimes, subjects used hyperonyms together with a pictogram because they did not know the exact word in English. So they used a more general term that includes the one which they should have used instead and a gesture which tries to be a picture of the word they do not know how to say. Obviously, Spanish speakers using English as L2 were more likely to make use of this kind of communicative strategy. So we find participants using terms like ‘vehicle’ instead of ‘train’ or ‘tube’ or ‘pipe’ instead of ‘drainpipe’ (SpWoman01L2):

**Example 58. SpWoman01L2.**

“... throws a:: a bowling e::h a ball for bowling through the:: the [**TUBE**] Gesture:illustrating with her hands the shape of the drainpipe ...”



FIGURE 40 SpWoman01L2

### **CONCLUSION**

After analyzing the results and data of this study, the following conclusions can be drawn:

- (1) Speakers of English used a lower amount of gestures in their L1 than Spanish speakers in their L2 (37.3 vs. 102.4). This may be due to a lack of fluency of non-native speakers but also to cultural reasons because Spanish speakers also used more gestures in their L1 (96.7) than American subjects in their L1.
- (2) In opening and closing discourse, Spanish speakers have also proved to use more gestures both in English as L2 and in Spanish as L1. However, it is worthwhile mentioning that the number of gestures used by Spanish speakers in closing discourse is much lower than in opening discourse. The reason for this behavior may be that the starting description of the story made by Spanish speakers is much more elaborate than the closing stage. Starting a narration implies organizing all the information, whereas finishing a narration is more formulaic.
- (3) Spanish speakers prefer the VS construction in their L1 when all elements are new to the discourse. When the verb of the VS construction is an action verb, the gesture is commonly associated to the action expressed by the verb. However, when the verb of the VS construction is an existential verb, a verb of appearance or a state verb, the gesture, if any, is commonly associated to the subject, which is a new topic. English speakers prefer the canonical structure SV (subject + verb) when introducing a new topic. However, they also used other structures such as “adverb+ verb + subject” or inversion. Only in a few instances, they used “anticipatory there” and “prop it” constructions. Surprisingly, this is the typical syntactic device used by Spanish speakers when introducing new topics in the L2.
- (4) In relation to the type of verb used with gestured new topics, the results were antagonistic: whereas native subjects used more action verbs, non-native informants deployed more state verbs. For this reason, L2 speech seems less dynamic and less fluent, since speakers prefer to use more basic presentational structures such as “there + be + NP”.
- (5) Even though both native and non-native subjects deployed more gestures when introducing a new topic, non-native subjects used many more gestures. Both facts are due to mutual intelligibility reasons: both native and non-native informants need to be as precise as possible when introducing a new topic but non-native informants have to use more gestures in order to overcome their linguistic problems.
- (6) When presenting old topics, both American and Spanish subjects used the SV structure in their narrations in English. However, Spanish subjects have proved to use more gestures than American subjects when introducing old topics, both in Spanish as L1 and in English as L2.
- (7) Non-native speakers made use of more pictograms than native speakers with both new and old topics. Pictograms are highly related to vocabulary, so it is unsurprising that someone who lacks the precise words to say something has to use a pictogram.

As we can see, we cannot talk of two different communicative structures, one for gestures and another for speech, but of a single one in which verbal and nonverbal elements combine and are synchronized. The two communicative elements taken together, gestures plus speech, constitute a whole which is greater than the mere sum of its separate parts. According to Kendon (1983), speech and gesture are the products of a single underlying process of utterance production.

These conclusions may be useful for teachers and learners and, consequently, may have considerable implications in the field of SLA.

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## FOOTNOTES

<sup>1</sup> For more information about topics see Álvarez Benito *et al.* (2003, p. 156-68).

<sup>2</sup> What Lambrecht means by saying “My car” is a non-subject topic in the sentence above is that “my car” is not the typical subject of an action verb such as “break”. The typically expected subject would be the agent or cause of the action. But apart from perceiving the action from the point of view of the ergative element, the action can also be seen from the point of view of the affected element, which is the original object of the sentence.

<sup>3</sup> Mandarin is a topic-prominent language (as opposed to subject-prominent). This means the topic, which may be any noun phrase in the sentence, is always in initial position and does not necessarily coincide with the syntactic function of subject. Moreover, that is one of the reasons why the passive is a marginal construction in Mandarin, but not in subject-prominent languages (Chao, 1968; Li and Thompson, 1976; Pan and Hu, 2000).

<sup>4</sup> By saying L2 speakers are not so fluent as L1 speakers, we mean their knowledge of the rules (lexical, morphological, syntactic, semantic, etc.) of the L2 is not complete and, consequently, they are not fully competent.

<sup>5</sup> See Álvarez-Benito and Íñigo-Mora (2005) and Íñigo-Mora and Álvarez-Benito (2006) for a more detailed analysis of the experiment in relation to the use of discursive-kinesic strategies by native and non-native (i.e. Spanish) speakers of English.

<sup>6</sup> This experiment was funded by the Spanish Ministry of Science and Technology (Ministerio de Ciencia y Tecnología) under the project titled “Nonverbal communication in the teaching of English and Spanish as L2” (*La Comunicación no verbal en la enseñanza de inglés y español como L2*) (BFF2002-00131).

<sup>7</sup> A detailed description of McNeill’s procedures for “eliciting, coding, and experimenting with gestures” is included in an appendix in McNeill (1992:365-391).

<sup>8</sup> It is extremely important that informants do not know the real purpose of our research (namely, nonverbal communication). Otherwise, their behaviour could be biased.

<sup>9</sup> We have calculated the Mann-Whitney  $U$  test, which is a nonparametric test for assessing whether two samples of observations (English as L1/English as L2, English as L1/Spanish as L1, English as L2/Spanish L1) come from the same distribution. The  $U$  test has been calculated using this formula:

$$U = n_1n_2 + \frac{n_1(n_1 + 1)}{2} - R_1$$

We have chosen this nonparametric test as an alternative to the t-test because of the number of subjects of samples (10 subjects per group = 30 subjects).

<sup>10</sup> For more information about pictograms see Álvarez Benito *et al.* (2003).

<sup>11</sup> In fact, people do not only use gestures when communicating in visual interaction, but also in non visual interaction (i.e. telephone conversations). For a more detailed study on the function of gestures see Krauss *et al.* (1996 and 2000), Rime and Schiaratura (1991) and Özyürek (2002).

<sup>12</sup> For more information about pictograms see Álvarez Benito *et al.* (2003).