

“EL GOS ÉS A DINS DEL BASKET”: LEXICAL CLI IN L3 CATALAN BY L1 ENGLISH-SPEAKING LEARNERS

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ABSTRACT. *This study lies within the area of Third Language Acquisition by analysing L1 English-speaking learners of Catalan with L2 Spanish. We investigate the relation between the languages that the learners already know (L1 English, L2 Spanish) and the language that is currently being acquired (L3 Catalan) in the appearance of lexical crosslinguistic influence (CLI) and the factors involved in the process. Participants were 12 students from the United States on a stay-abroad programme at the University of Barcelona. Data were obtained from an oral picture description task and a questionnaire regarding their linguistic background.*

Results showed that the relevant factors in the appearance of different types of CLI in L3 Catalan are proficiency in the L2, L2 onset age, formal instruction in the L3 and use of the L3. Content borrowings were the most frequent type of CLI. Finally, CLI was found to be more frequent from L2 Spanish than from L1 English. These findings are discussed in light of previous studies.

KEYWORDS. *Lexical crosslinguistic influence; L3 Catalan; oral production.*

RESUMEN. *Este estudio se enmarca en el área de Adquisición de Terceras Lenguas y analiza aprendices de catalán cuya lengua materna es el inglés y que poseen conocimientos de español como segunda lengua. Se pretende investigar la relación entre las lenguas que los aprendices ya conocen (L1 inglés, L2 español) y la lengua que se está adquiriendo (L3 catalán) en la aparición de la influencia entre lenguas en el léxico así como los factores que intervienen en dicho proceso. Los participantes son 12 estudiantes norteamericanos en un programa de “estancia en el extranjero” en la Universidad de Barcelona. Los datos se obtuvieron a partir de una tarea de descripción oral de viñetas y de un cuestionario sobre su perfil lingüístico.*

Los resultados muestran que los factores relevantes en la aparición de diferentes tipos de influencia lingüística en L3 catalán son la competencia en la L2, la edad de inicio en la L2, la instrucción formal en la L3 y el uso de la L3. El tipo más frecuente de influencia lingüística se dio en los préstamos de clases abiertas de palabras. Por

último, la influencia entre lenguas resultó ser más frecuente a partir del español que del inglés. Estos resultados se discuten a la luz de estudios anteriores.

PALABRAS CLAVE. *Influencia léxica entre lenguas; L3 catalán, producción oral.*

1. INTRODUCTION. BILINGUALISM IN CATALONIA

Catalonia is a bilingual community in Spain with two official Romance languages, Spanish, the majority language, and Catalan, the community language. The two languages coexist in the region, and are present in everyday life. In the last few decades, Catalan has reemerged and is now used widely in schools, government administration and the media. Although Catalan is used as the teaching medium at all levels of the education system, Spanish is the language of socialization in some cases, especially in the Barcelona area. Accordingly, the multilingual nature of the Catalan region affects not only the autochthonous Spanish-Catalan bilingual population, who need to acquire at least one other language, but also newcomers to this region, who learn two second languages (Spanish and Catalan), especially if they are of school age. In many cases, newcomers will start out with good proficiency in Spanish and keep being exposed to this language while acquiring Catalan. The case of Catalan in Catalonia, therefore, is now one of revitalization of a minority language (Cenoz 1997). In the Catalan context, few studies of Third Language Acquisition (TLA) have been carried out, with the exception of research on the acquisition of English as an L3 in primary and secondary schools by bilingual speakers of Catalan and Spanish (see Muñoz 2006). To our knowledge, there are no published studies of Catalan as an L3 by L1 English speakers in our context.

In the following section (Section 2) we present findings from previous studies on the factors that affect the appearance of Crosslinguistic Influence (CLI) in TLA with special attention to lexical CLI¹.

2. CROSSLINGUISTIC INFLUENCE IN THIRD LANGUAGE ACQUISITION. LEXICAL CLI AND INFLUENCING FACTORS

According to Gabrys (2006), CLI can occur in four situations: (1) when the target language (TL) element has not yet been acquired, (2) when the TL element has been acquired but the learner cannot access it at the moment of performance, especially in oral tasks, (3) when the rules acquired are not sufficient, and, finally, (4) when the rules can only be approximated. However, as Odlin (1989) claims, CLI can also be positive and facilitative, thus leading to faster acquisition of the language. As a first approximation to Catalan as an L3 by L1 English learners, the present study focuses on cases of negative lexical CLI, in line with the most frequent types of analyses in previous research. The conceptualization of lexical CLI in our study follows the definition in Jarvis (2009: 99): “the influence that a person’s knowledge of one language has on that person’s recognition, interpretation, processing, storage and production of words in another language”.

Recent studies have highlighted differences between the acquisition of *third* and *second* languages; factors such as the typological distance between the three languages, proficiency in both the second and third languages, the L2 status factor, and the recency / frequency of use of each language. In addition, the context in which the languages have been acquired produces TLA situations that could not be analysed in previous research on SLA (De Angelis 2007). Such factors will be briefly reviewed below, as they are relevant to the present study, and especially to studies on lexical CLI.

Typological distance between the learner's languages in TLA seems to affect CLI in that, generally speaking, learners usually prefer to borrow an item from the language that is typologically closest to the L3 (see Cenoz 1997, 2001, 2005; Bouvy 2000; Lasagabaster 2000; De Angelis and Selinker 2001; Ecke 2001; Fouser 2001; Ringbom 2001, 2007; Odlin and Jarvis 2004; De Angelis 2005a). Nonetheless, this does not mean that CLI cannot occur from an unrelated language, since learners may just assume that items in the TL work in the same way as in their previously acquired languages and, thus, draw on them, as proved in some studies on *psychotypology* or *perceived language distance* (see Kellerman 1995 and Ringbom 2007, among others). Moreover, as discussed by Haastrup (2010), similarities might exist in particular sub-features of typologically unrelated languages, which could result in transfer. In this line, Ringbom (2001, 2005) analyses two broad types of transfer (form and meaning) and claims that transfer of form tends to occur from a typologically similar language regardless of whether it is native or non-native, and that transfer of meaning tends to come from a language in which the learner is highly proficient.

Thus, proficiency in the L3 and in any other language that the learner might know is a relevant factor in CLI studies. Less proficient L3 learners transfer more elements than their more proficient counterparts (Williams and Hammarberg 1998; Celaya 2006; Muñoz 2007). Moreover, the types of transfer that occur at early or advanced stages of proficiency differ according to learners' needs. As Odlin (1989) argues, transfer is generally negative in learners with a low level of proficiency in the TL, because of the need to fill in the knowledge gaps (i.e. the use of *borrowings*). In contrast, positive transfer is more often found in the productions of highly proficient learners, since they can benefit especially from cognates. Proficiency in the L2 also needs to be taken into account, since learners may rely on a source language they know well (Singleton 1987; Odlin and Jarvis 2004; Tremblay 2006). However, in an investigation of CLI in L3 English as a Foreign Language (EFL) by L1 Spanish/Catalan learners with German as their first foreign language (L2), Sánchez (2011a) found that even at low levels of proficiency in the L2 her participants produced Interlanguage Transfer (ILT) of VP headedness into L3 English.

A possible explanation for findings such as those in Sánchez (2011a) may lie in the *L2 status factor* or the *foreign language effect*, which states that the L2 may be activated by a desire to suppress the L1 and can therefore become a better resource for acquiring another *foreign* language (De Angelis and Selinker 2001; Hammarberg 2001; De Angelis 2005a, 2007; Sánchez 2011b). However, the results are far from

conclusive. Ringbom (1987) found that while formal errors of both Finnish and Swedish speakers reflected the influence of Swedish (their L2 or L1, respectively), their semantic errors consistently reflected the influence of the learners' L1, regardless of whether it was Finnish or Swedish. In Celaya (2006), the production of *calques*, which Agustín Llach (2011) classifies as *L1-oriented lexical errors*, increases as Spanish/Catalan learners become more proficient in English L3. Muñoz and Celaya (2007) also found that the participants in their study, who were divided into three groups with different levels of proficiency in EFL and one or two more foreign languages, relied on their L1 (Spanish / Catalan or both) in instances of transferring meaning in English, no matter whether English was an L2, L3 or L4, according to the linguistic profile of each of the participants.

Closely associated with the previous factor, Dewaele (1998), Hammarberg (2001) and Cenoz (2001) analyse *recency / frequency of use* as a factor that may affect the choice of the source language of transfer. Speakers are more likely to borrow from a language they have been recently exposed to and to which they have had a high amount of exposure, as well as from a language they use actively, than from a language they may know but do not use, since recent and frequent use facilitates access to the linguistic information stored in the mind (Hammarberg 2001). However, we should consider the effects of this factor in relation to other variables in order to draw conclusions. This is seen in Williams and Hammarberg's (1998) study, which argues that the language that the participant under study had acquired most recently – i.e. German – had a greater effect on her Swedish production than the language she used more frequently. Other factors, though, need to be taken into consideration since they might have influenced the results, for example, high proficiency in German, as well as the relatedness between German and Swedish.

Finally, the context of formal or naturalistic acquisition has been analysed in several studies in relation to CLI; formal education may constrain transfer, since classroom learners use the TL “in a setting that increases their awareness of the differences between their native and target languages, and encourages them to adhere to the norms of the latter” (Jarvis and Pavlenko 2008: 206). Research on lexical CLI in different contexts yields controversial results. For instance, in an analysis of the oral production of EFL in a school context by Catalan-Spanish bilingual learners with knowledge of French as their first foreign language, Muñoz (2007) found that learners produced more function words in either of the L1s, since they seemed to pay more attention to content words. However, in a similar context, Navés, Miralpeix and Celaya (2005) report similar percentages of content and function words transferred by the youngest groups in their study. In her study in a naturalistic context, De Angelis (2005b) concluded that transfer of content vs. function words depends on the word itself, since some function words seem to be more transferable than others, as seen in the extensive use of the French subject pronoun *il* (he) by both L1 English and L1 Spanish learners with prior knowledge of French. In their study of language contact in the US community in Spain, Turell and Corcoll (2001) found that lexical CLI

exceeded grammatical CLI. To explain this finding, the researchers claim that lexical transfer requires less cognitive effort. They also found that degree of contact had a significant effect on the frequency and type of transfer. For instance, US migrants who had close contact with the host community used more complex types of transfer, such as the ones that involve Noun Phrases, whereas *low contact* members presented instances of CLI at the level of bare nouns.

Quite recently, some studies in the Spanish context focused on CLI in two types of school context (regular and content-based teaching or CLIL). For instance, Celaya (2008) analysed the production of *borrowings* and *lexical inventions* in EFL by Spanish-Catalan L1 learners in CLIL and non-CLIL classrooms, at grades 5 and 7. She found that *borrowings* appeared with a lower frequency in the CLIL group at both grades. In contrast, *lexical inventions* presented similar percentages of use in both types of instruction. The author claims that context may affect types of CLI in different ways.

In light of the previous findings, the present study had three main objectives. First, we aimed to analyse lexical CLI and the factors that account for its appearance in the oral production of L1 English speakers who already have one foreign language (Spanish) and are learning Catalan as L3. Secondly, after classifying the instances of CLI (see Section 3.5), we aimed to investigate whether any of the types of lexical CLI bore a relationship with any of the factors analysed in RQ1. Finally, we were interested in finding out the preferred language of influence (L1 English or L2 Spanish as a foreign language) in the learners' performance and whether such a choice is influenced by any of the analysed factors.

The following research questions were, therefore, proposed:

- (1) What factors affect the appearance of lexical CLI in L3 Catalan oral production?
- (2) What types of lexical CLI are produced by the learners? Do these types correlate significantly with any of the factors analysed?
- (3) Which is the source language of influence in lexical CLI? Is there any relationship between the factors analysed in RQ1 and the source language of influence?

3. THE STUDY

3.1. *Context*

The University of Barcelona offers a 10-month stay-abroad (SA) programme for students from an American university. This programme has been running for forty years and incorporates students into the regular classes of several degrees, which are taught in Catalan or Spanish, as well as offering Catalan and Spanish courses. Thus, students who take part in this programme are in contact with both Catalan and Spanish, the two official languages in the Catalan region.

3.2. Participants

Participants in the study were 12 university students (8 females, 4 males) aged between 19 and 23 (see Table 1 below for a summary of their characteristics). They were all undergraduate students on a variety of degrees at their home universities, including Spanish, English, Linguistics, Mathematics, Anthropology and Political Science. All of them were native speakers of American English, with Spanish as their first foreign language (L2) and Catalan as their second foreign language (L3) upon coming to Barcelona.

The participants began learning Spanish at different ages: some during childhood, but most in their adolescence. Following previous studies on the age factor in the same context (e.g. Muñoz 2006) with different learners, we selected 12 years as the turning point to classify the participants into early and late starters of Spanish as a foreign language. The length of learning varies from learner to learner (it ranges from 3 to 15 years), but all subjects perceived themselves as having high proficiency in Spanish (high intermediate / advanced level). Six of the learners were studying Spanish either as their major or minor degree. For most of the participants, it was the first time they had lived in a Spanish-speaking country.

None of the participants had studied Catalan before coming to Barcelona. Upon arrival, they all took part in a four-week course in Catalan at the University of Barcelona. After that, 10 of them decided to continue taking formal classes at the university during the first semester in addition to their Spanish courses. Thus, since they were living in a bilingual community, they had contact with Spanish and Catalan in both a naturalistic and a formal context. However, while all of the participants reported using Spanish on a daily basis, their use of Catalan was limited to the university environment and to some of their courses at university.

	N = 12
Gender	Female = 8 Male = 4
Studies	Arts = 10 Science = 2
Studying Spanish as major or minor	6
First time in a Spanish-speaking country	10
Spanish onset age before age of 12	2
Self-perceived proficiency in Spanish	High-intermediate = 7 Advanced = 5
Use of Spanish	On a daily basis = 12
Formal instruction in Spanish +7 years	4
Catalan 4-week course	12
Formal instruction in Catalan (1st semester)	10
Use of Catalan outside university	4
No Catalan before arrival	12

Table 1. Description of participants.

3.3. Instruments

Data were obtained from an oral description in Catalan of a series of pictures “The Dog Story” (Heaton 1972), a test that had already been used successfully in the BAF Project at our university (see Muñoz 2006). Learners also completed a background questionnaire regarding their language learning history. The questionnaire included questions on personal details and on the participants’ knowledge and use of all the languages they knew, the age of onset and the number of years of exposure. It also provided details about the participants’ self-perceived proficiency in each of the languages and their experience of learning languages in a naturalistic environment (See Appendix 1).

3.4. Procedure

The director of the International Office at the University of Barcelona was contacted and she gave us permission to contact the potential participants. Data were collected when students had already been in Barcelona for four months and had taken the intensive 4-week course in Catalan. The participants’ production was recorded individually by the first author. Although there was no time limit on the task, it took between two and four minutes to narrate the story. The narratives were audio-taped and later transcribed.

3.5. Data Analysis

We first identified the instances of lexical CLI in the transcripts of the oral production and subsequently classified each instance according to the source language of influence (English L1 and Spanish L2). Items were measured against the total number of words. The next step consisted in identifying the types of lexical CLI according to our own classification, which was devised following Dewaele (1998), Williams and Hammarberg (1998), Cenoz (2001), Hammarberg (2001) and Ringbom (2001) (see Appendix 2 for the definitions of each category). Data were coded by the first author of this paper after reaching 100% agreement with the second author on a sample that represented 50% of the data. Some examples from the data are given below to illustrate the coding categories and to facilitate the presentation and discussion of the results [see Appendix 4 for the transcription conventions].

1. CODE-SWITCHING

1.1. Code-switching of a whole sentence

Hay unas fresas que descubren

[There are some strawberries that they discover]

[Source Language (SL): Spanish] [Target form (TF): Descubreixen unes maduixes].

1.2. Code-switching of part of a sentence

Després els nens surten de casa hmm@p i anant a un camp on són hmm@p vaques i van # ***en caja de comida***

[Then the children leave the house and go to the countryside where there are cows and they go with a box with food]
[SL: Spanish] [TF: amb una caixa de menjar].

2. BORROWING

2.1. Content words

El gos és a dins del **basket**
[The dog is inside the basket]
[SL: English] [TF: cistell].

2.2. Function words

Hi ha una cadira i hmm@p algunes coses hmm@p **en** la taula
[There is a chair and some things on the table]
[SL: Spanish] [TF: a].

3. SELF-REPAIR

Els nens hmm@p llegan a un **parec(e)** sembla una granja
[The children arrive at a: it seems a farm]
[SL: Spanish] [TF: sembla].

4. LEXICAL INVENTION

Ellos creuen que no hi ha más comida perquè el animal hmm@p va **comar** la comida [They think that there is no more food because the animal ate the food]
[SL: Spanish **comer**] [TF: menjar].

5. EDITING TERMS

La mare diu als als nens on vas **sorry** on van per a menjar.
[The mother says to the children: where are you going sorry where are they going to eat] [SL: English] [TF: perdó].

6. META COMMENTS

Después # en un en afuera de la casa # hmm@p # **no sé no sé decir las palabras** # estan caminando **pero no sé como se dice** caminar
[Then, outside the house, hmm@p, I don't know, I don't know how to say the words, they are walking, but I don't know how to say 'to walk'.
No sé decir las palabras: [SL: Spanish] [TF: no sé com es diuen les paraules].
Pero no sé como se dice caminar: [SL: Spanish] [TF: però no sé com es diu caminar].

7. INSERT IMPLICIT ELICIT

Però la gent no ve hmm@p veure el gos i quan **salgan** [=rising intonation] hmm@p los nens saluden su madre
[But people don't see the dog and when the children leave they greet their mother]
[SL: Spanish] [TF: surten].

8. WIPP

Ok hi ha un noi i noia
[ok there is a boy and a girl]
[SL: English] [TF: d'acord].

4. RESULTS AND DISCUSSION

The first research question (RQ1: What factors affect the appearance of lexical CLI in L3 Catalan oral production?) analyses the influence of certain factors associated with the learners in the present study (see Sections 2 and 3.2 above) on the production of lexical CLI. A statistical analysis using the Pearson product-moment correlation coefficient was carried out for this purpose. The analysis of the data showed that *proficiency in Spanish* and *formal instruction in Catalan* are the factors that correlate significantly with the total number of lexical CLI, as can be seen in Table 2 below (see Appendix 3 for the complete Table with correlations).

Factors	CLI variables	r	p	N
Formal instruction in Catalan	Total n lexical CLI	-.60	.038	12
Proficiency in Spanish	Total n lexical CLI	-.58	.047	12

$P < .05$

Table 2. Factors affecting lexical CLI.

We found a weak and negative correlation between *proficiency in Spanish* and CLI [$r = -.58$, $p = .047$], with higher levels of proficiency in Spanish associated with a lower number of lexical CLI instances, as suggested by Odlin and Jarvis (2004) and by Jarvis and Pavlenko (2008). Participants reported having an advanced knowledge of L2 Spanish; this may explain why they relied extensively on this language; learners with the highest degree of proficiency in Spanish were the ones who relied less on CLI when producing orally in Catalan. This might be due to the fact that these learners have a more structured view of the language and, consequently, are able to keep the L2 separated from the other languages when trying to produce orally in the L3. In addition to their high proficiency in the L2, participants were constantly exposed to this language in their daily life. Therefore, it is reasonable to consider that learners are likely to borrow from a language they have used recently and frequently (see Dewaele 1998; Cenoz 2001; Hammarberg 2001).

Formal instruction in Catalan has also been found to affect the amount of CLI in learners' productions, due to the fact that learners taking formal classes have more contact with Catalan than learners who are not taking classes and, consequently, may have a higher knowledge of the language. A weak and negative correlation was found between *formal instruction* and CLI [$r = -.60$, $p = .038$], with higher levels of instruction in Catalan associated with lower levels of CLI. Thus, the learners who continued with formal instruction in Catalan during the first semester, after the 4-week Catalan course upon arrival (see Table 1), presented fewer instances of CLI, due to a higher amount of contact with the language and their increased awareness of the differences between the languages they have knowledge of, as pointed out by Jarvis and Pavlenko (2008).

The second research question dealt with the types of lexical CLI in L3 Catalan oral production and the relationship, if any, with the factors analysed in RQ1 (RQ2: What types of lexical CLI are produced by the learners? Do these types correlate significantly with any of the factors analysed?). The analysis showed that both *content* and *function borrowings* were the most frequent type of lexical CLI, followed by *editing terms*. On the contrary, the types of lexical CLI that occurred less frequently were *lexical inventions* and *insert implicit elicit* (see Figure 1 for both percentages and raw numbers of each type of CLI).

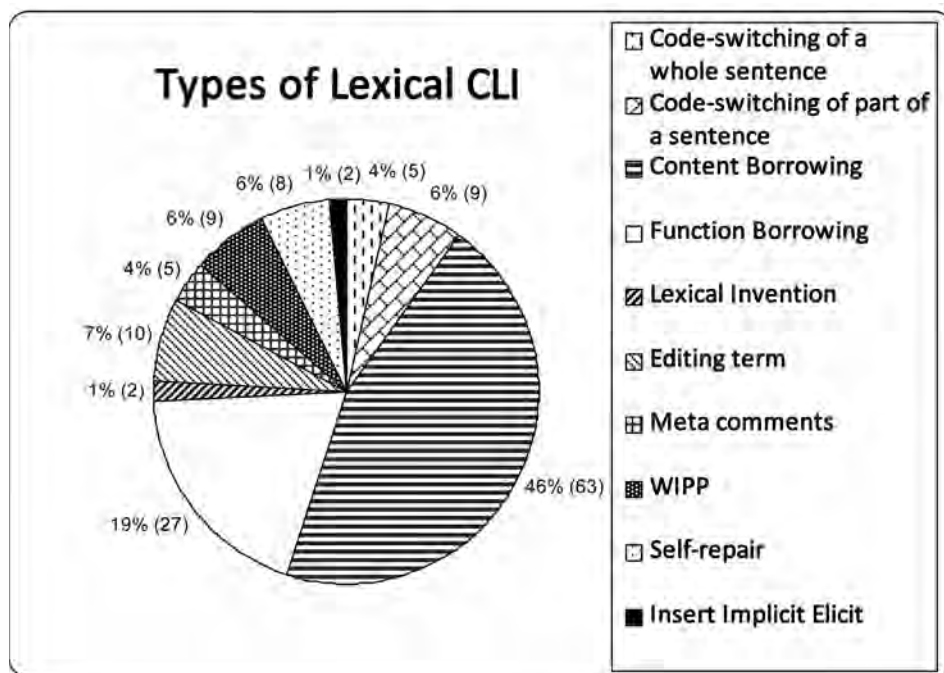


Figure 1. Types of lexical CLI in percentages and raw numbers.

Content and *function borrowings* comprised 65% of all cases of CLI in oral production (content words: 46% and function words: 19%). *Editing terms* accounted for 7% of the total number of cases; *Code-switching of part of a sentence*, *WIPPs* and *self-repairs* each occurred in 6% of instances. *Code-switching of a whole sentence* and *meta comments* each comprised 4% of the total number of CLI. *Lexical inventions* and *insert implicit elicit* obtained the lowest rates (1% each). Unlike Williams and Hammarberg (1998), we found few cases of *WIPP* in the learners' oral production. The difference may be due to the type of task involved. Our participants did not have a conversation with the interlocutor, but produced a monologue in which they described a series of pictures. In

their study of 52 low proficiency adult learners of EFL, Viladot and Celaya (2007) found that the production of lexical transfer was task-related. Task variability was found between the picture-description used in their study (which was the same as the picture used in the present study) and both the interview and role-play.

Correlations were calculated with each type of CLI and the factors that might influence the appearance of CLI. The aim was to explore the relationship between types of lexical CLI and influencing factors. The results showed that whereas some types of CLI correlated positively or negatively with the factors, others showed no correlation (see Appendix 3 for the complete Table with correlations). The results are presented in Table 3 below.

Factors	CLI variables	r	p	N
Formal instruction in Catalan	Code-switching of a whole sentence - against n of sentences	-.61	.032	12
	Code-switching of a whole sentence - against n of cases	-.73	.007	12
	Editing terms	.61	.035	12
Spanish onset age	Insert implicit elicit	-.58	.047	12
Use of Catalan	Insert implicit elicit	-.58	.047	12
Experience of SA programmes	Insert implicit elicit	.58	.047	12

$P < .05$

Table 3. Factors affecting the appearance of the types of lexical CLI.

Once again, *formal instruction in Catalan* correlated significantly with one of the types of CLI in oral production. A weak negative correlation was found between *formal instruction in Catalan* and *code-switching of a whole sentence* [$r = -.61$, $p = .032$], with a higher level of instruction in Catalan associated with a lower use of *code-switching of a whole sentence*. This result was obtained when the percentage of *code-switching of a whole sentence* was calculated against the total number of sentences. The percentage of this type of CLI was also calculated against the total number of CLI instances, as with all the other types. In this case, a strong negative correlation was found [$r = -.73$, $p = .007$]. Participants who were attending formal classes in Catalan might have a higher proficiency and fluency in the language at the time of data collection. This improvement might have made them produce sentences totally in Catalan.

Insert implicit elicit correlated with a variety of factors. A weak negative correlation was obtained between *insert implicit elicit* and *Spanish onset age* [$r = -.58$, $p = .047$]. This result shows that participants who had acquired Spanish after the age of 12 produced fewer *insert implicit elicit* terms in their production. A weak negative

correlation was also found between this type of CLI and *use of Catalan* [$r = -.58$, $p = .047$], with a high level of use of Catalan associated with a low number of *insert implicit elicit* terms. Finally, this type of CLI also correlated with the *experience of SA programmes*. A weak positive correlation was obtained between these factors [$r = .58$, $p = .047$]. Thus, participants with less experience of SA programmes presented this type of CLI less frequently.

To sum up, the learners who used *insert implicit elicit* less frequently were those who acquired Spanish after the age of 12, those who used Catalan in their daily lives, and, finally, those who had less experience of SA programmes. These results can be explained if we consider that learners with a higher exposure to Catalan are more fluent in the language and, thus, produce fewer non-target forms. Experience of SA programmes may also have exerted an effect, as learners with more experience have learned how to communicate meaning without paying too much attention to the form and, therefore, may not attach importance to the use of a non-target form. This is the only case in which *experience of SA programmes* was found to be significant and so it was not considered a good indicator of CLI. However, we should be cautious, since few instances of *insert implicit elicit* were found in our data.

Finally, a weak, positive correlation was found between *formal instruction in L3 Catalan* and *editing terms* [$r = -.61$, $p = .035$], with a higher degree of instruction in Catalan associated with greater use of *editing terms*. This finding suggests that since learners who attend formal instruction in L3 Catalan have a better knowledge of this language, they introduce *self-repairs* more often. *Editing terms* are, in most cases, terms used to introduce a *self-repair* and, thus, to maintain interaction.

The third research question analysed the source language of lexical CLI in L3 Catalan and the relationship with influencing factors. For the sake of clarity, let us recall RQ3 here: Which is the source language of influence in lexical CLI? Is there any relationship between the factors analysed in RQ1 and the source language of influence? As seen in Figure 2, L2 Spanish was by far the main source language in L3 Catalan oral production. Another important point to highlight is that all participants transferred from their L2 (Spanish), but not all of them made use of their L1 in their production of the L3.

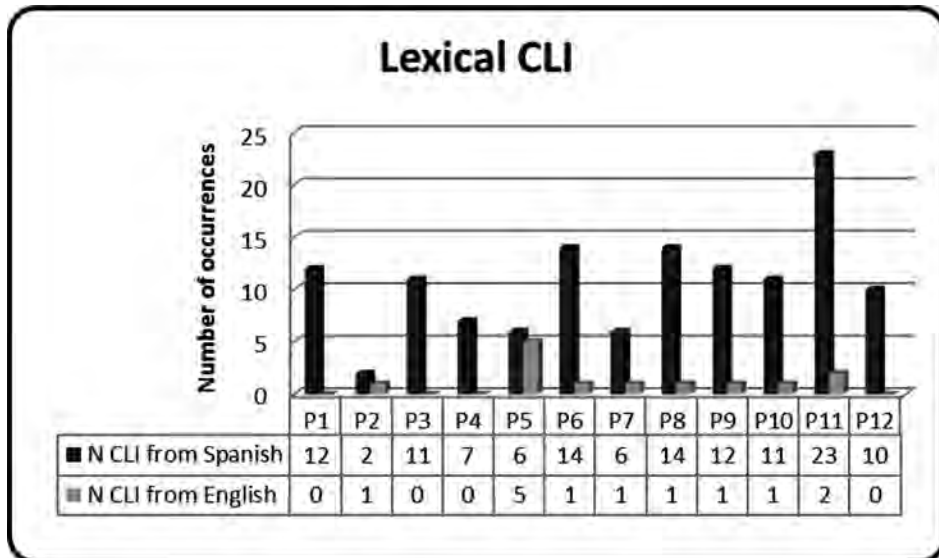


Figure 2. Source languages of lexical CLI.

This result suggests that *typology* was a better predictor of the source of CLI than the effect of the mother tongue. The later-learned language (Spanish) was more influential than the L1 (English) in L3 Catalan production because of the typology of the languages involved. That is, the influence of the L2 is favoured if the L2 is typologically close to the L3, especially if the L1 is more distant. In this case, Spanish and Catalan are more closely related languages than English. Participants seem to perceive this relatedness and, therefore, borrow more from Spanish than from English. As already discussed above, the same results have been found in studies by Dewaele (1998), Bouvy (2000), Cenoz (2001), Ecke (2001), De Angelis and Selinker (2001), Ringbom (2001), Odlin and Jarvis (2004) and De Angelis (2005a). However, Sánchez’s (2011b) participants, Spanish-Catalan school learners of English (L4) with German (L3), relied on the order of constituents of German in their English production, even if their L1s were similar to English in this linguistic aspect.

The use of L2 Spanish in L3 Catalan production could also be explained in terms of *L2 status* (see Williams and Hammarberg 1998; De Angelis 2005a; Falk and Bardel 2010). Thus, participants may want to suppress the L1, which is inherently non-foreign. However, in the present study it is not possible to establish whether *typology* or *L2 status* affects CLI. To determine this, we would have to design a study with a sample of participants with L1 Spanish and a distant L2 (e.g. English) who encounter Catalan as L3. In such a study, we could test the results of Cenoz (2001), who found that *linguistic distance* was a stronger predictor of CLI than *L2 status* in her study of Basque L1-Spanish L2 and Spanish L1- Basque L2 learners, since both groups drew on Spanish in

their production in English L3 because of the huge distance with Basque (a non-Indo-European language).

The statistical analysis revealed that two factors correlated significantly with the source language of CLI: *Spanish onset age* and *use of Catalan*. An analysis of these correlations is presented in Table 4 (see Appendix 3 for the complete Table with correlations).

Factors	CLI variables	r	p	N
Spanish onset age	Spanish-based lexical CLI	.93	.000	12
	English-based lexical CLI	-.93	.000	12
Use of Catalan	Spanish-based lexical CLI	-.66	.018	12
	English-based lexical CLI	.66	.018	12

$P < .05$

Table 4. Source language of CLI and influencing factors.

Spanish onset age correlated positively with lexical CLI from Spanish in oral production and, thus, negatively with lexical CLI from English. A strong, positive correlation was found between *Spanish onset age* and Spanish-based lexical CLI [$r = .93, p = .000$]. Participants who began learning Spanish after the age of 12 presented higher levels of CLI from Spanish. The opposite result was also found: a strong, negative correlation between *Spanish onset age* and English-based lexical CLI [$r = -.93, p = .000$]. Participants who began learning Spanish after the age of 12 presented a lower number of English-based lexical CLI.

The *use of Catalan* in the daily life of the participants correlated positively with English-based lexical CLI, but negatively with Spanish-based lexical CLI. A weak, negative correlation was identified between *use of Catalan* and Spanish-based lexical CLI [$r = -.66, p = .018$], with low levels of use of Catalan associated with high levels of Spanish-based lexical CLI. The opposite result was found for the English-based CLI; that is, a weak positive correlation was found between *use of Catalan* and English-based CLI [$r = .66, p = .018$], with low levels of use associated with low levels of CLI from English.

The fact that a higher age of onset of Spanish increases the amount of Spanish-based CLI might suggest that early acquisition of the L2 helps to keep the non-native languages separate. When the L2 has been learnt after the age of 12, it is more likely that participants transfer from this language when they acquire a third one. On the other hand, participants with a higher degree of contact with the Catalan language, either through formal instruction or naturalistic use of the language, may be more aware of the differences that exist between Catalan and Spanish and treat them as two separate languages; therefore the percentage of Spanish CLI decreases in favour of English-based CLI. However, such a claim should be made with caution; a test of the subjects' metalinguistic awareness would have been necessary to further confirm this idea.

5. CONCLUSIONS

The present study investigated lexical CLI in L3 Catalan in twelve L1 English-speaking learners with Spanish as L2 in Barcelona. The data came from the oral production of a picture description task and from a personal background questionnaire that allowed us to analyse the effects of several factors on the appearance of lexical CLI in TLA. Although the low number of participants has to be taken into account in terms of the generalizability of the results, the study suggests a number of findings that may be relevant for further research. To begin with, the factors that correlated significantly with the appearance of lexical CLI are *proficiency in the L2 (Spanish)* and *formal instruction in the L3 (Catalan)*. The negative correlations found imply that the higher the level of proficiency in the L2 and the L3, the fewer instances of lexical CLI will be produced, since, as suggested by Jarvis and Pavlenko (2008), a higher level of proficiency allows learners to keep all their languages apart. However, as has been argued above, in the present study both factors were implicitly related to the amount of input and the presence of both L2 and L3 in the context in Barcelona and the increase in the amount of input in Catalan as a result of formal instruction.

Secondly, the present study has shown that both *content* and *function borrowings* are the most frequent type of CLI in oral production, with a higher percentage of *content borrowings*. Eight more types of CLI were identified in the data, but they occurred less frequently. Moreover, significant correlations were found between four factors and three types of lexical CLI (as shown in Table 3 above): *formal instruction in the L3* and *code-switching of a whole sentence* and *editing terms*, and *Spanish onset age*, *use of Catalan* and *experience of SA programmes* and *insert implicit elicit*.

Finally, the results show that lexical CLI in L3 Catalan oral production comes from both L1 (English) and L2 (Spanish). However, CLI was more frequently from L2 Spanish than from the L1. This contradicts studies that suggest that transfer is more likely from the L1 than from later-learned languages (Ringbom 1987), but in line with studies in which the *L2 status* is a relevant factor in CLI (Falk and Bardel 2010), among others. Both *Spanish onset age* and *use of Catalan* appear to affect the choice of Spanish (the L2) as the preferred language for lexical CLI; significant positive correlations were found for both factors.

This study is a first approximation to the study of CLI in the acquisition of Catalan as an L3, a language that is still in need of research either as a second and/or foreign language. The results apply to the specific population of our study with the context variables described above; further generalization may be drawn from follow-up studies on the acquisition of Catalan as L3. The results should be compared with studies that involve a higher number of participants, which would provide a larger database, and with studies of learners with other L1s and L2s to further investigate the findings regarding the factors that play a role in the appearance of CLI in the acquisition of L3 Catalan.

NOTES

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1. The terms “transfer” and “CLI” will appear with no main difference in meaning in this article, unless specified otherwise, since we will keep to the terminology used by the authors of the studies reviewed as much as possible.

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APPENDIX 1. QUESTIONNAIRE

- 1) First name and family name (OR Nickname): _____
- 2) Age: _____
- 3) Country of origin: _____
- 4) Place of current residence: _____
- 5) Studies: _____
- 6) What's your L1 (mother tongue)? _____
- 7) Other languages known/learned – L2, L3...- (in chronological order): _____

8) At what age did you start learning these other languages?

- 1. L2: _____
- 2. L3: _____
- 3. L4: _____

9) How many years have you studied each of them?

- 1. L2: _____
- 2. L3: _____
- 3. L4: _____

10) Self-perceived proficiency:

11)

	L2	L3	L4
Beginner			
Low-intermediate			
High-intermediate			
Advanced			
Native			

12) Have you lived in any of the countries where those languages were used? Specify _____

13) How often do you use each of these languages?

- | | |
|--|--|
| L1: _____
On a daily basis
Often
Only at university | L2: _____
On a daily basis
Often
Only at university |
| L3: _____
On a daily basis
Often
Only at university | L4: _____
On a daily basis
Often
Only at university |

14) While in Barcelona, have you taken any Catalan course? Spanish course?
 Others? _____

15) Are you currently taking any Catalan course at the university? _____

APPENDIX 2. TYPES OF CLI: DEFINITIONS (See Williams and Hammarberg, 1998)

- ↳ CODE-SWITCHING: it refers to whole pieces produced by the learner in another language. The learner is conscious that he is changing to the L1 or L2, but he uses this strategy due to the lack of knowledge of the L3. It is further subcategorized into:
 - ❖ CODE-SWITCHING OF A WHOLE SENTENCE, when whole sentences are entirely produced in the L1 or L2.
 - ❖ CODE-SWITCHING OF PART OF A SENTENCE, when parts of a sentence are entirely produced in the L1 or L2. Here 'part of a sentence' is understood as a whole phrase which has a minimum of two words or a succession of more than two words in the L1 or L2 which do not constitute a phrase.
- ↳ BORROWING: it consists in the use of a non-target word (from the L1 or L2) in the production of the target language (L3), which has not been phonologically and morphologically adapted. They are subclassified into:
 - ❖ Content words, which include nouns, adjectives, lexical verbs and adverbs.
 - ❖ Function words, which include pronouns, determiners, numerals, prepositions, conjunctions, modal and auxiliary verbs.
- ↳ SELF-REPAIR: it refers to a type of borrowing for which the learner immediately provides the target form.
- ↳ LEXICAL INVENTION: it consists in the use of a non-target word, which has been adapted from the L1 or L2 to the phonology and morphology of the L3.
- ↳ EDITING TERM: it consists in terms that are used to introduce a self-repair, to facilitate or to maintain interaction.
- ↳ META COMMENT: it refers to expressions that are used to indicate a comment on the communicative situation or on the text itself.
- ↳ INSERT IMPLICIT ELICIT: it refers to the use of a non-target word pronounced with rising intonation.
- ↳ WIPP: it consists in language switches 'Without Identified Pragmatic Purpose'. They are usually grammatically function words (pronouns, prepositions, connective adverbs, conjunctions). Items for which there is evidence that they are known by the learners are also included in this group. WIPPs occur as a part of the utterance in the L3 and they do not have any function, they seem to be lapses in the L3 production.

APPENDIX 3. CORRELATIONS

Factors	CLI variables	r	p	N
Formal instruction in Catalan	Total n lexical CLI	-.60	.038	12
Use of Catalan	Total n lexical CLI	-.44	.143	12
Spanish onset age	Total n lexical CLI	.55	.062	12
Proficiency in Spanish	Total n lexical CLI	-.58	.047	12
Formal instruction in Spanish	Total n lexical CLI	-.41	.183	12
Use of Spanish	Total n lexical CLI	.19	.555	12
Experience of SA programmes	Total n lexical CLI	-.16	.606	12

p>.05

Table 5. Correlations between factors that might constrain CLI and total number of lexical CLI.

Factors	CLI variables	r	p	N
Formal instruction in Catalan	Code-switching of a whole sentence - against n of sentences	-.61	.032	12
	Code-switching of a whole sentence - against n of cases	-.73	.007	12
	Code-switching of part of a sentenc	-.28	.364	12
	Editing terms	.61	.035	12
	Meta comments	.01	.975	12
	Insert Implicit Elicit	.07	.830	12
	WIPP	-.09	.977	12
	Borrowings	-.19	.546	12
	Content Borrowings	-.05	.867	12
	Function Borrowings	-.12	.710	12
	Self-Repairs	.10	.754	12
Lexical Inventions	.07	.823	12	
Use of Catalan	Code-switching of a whole sentence - against n of cases	-.37	.231	12
	Code-switching of part of a sentenc	.139	.666	12
	Editing terms	.41	.175	12
	Meta comments	.04	.896	12
	Insert Implicit Elicit	-.58	.047	12
	WIPP	.02	.936	12
	Borrowings	-.42	.168	12
	Content Borrowings	-.23	.465	12
	Function Borrowings	-.12	.711	12
	Self-Repairs	.17	.592	12
Lexical Inventions	-.30	.337	12	
	Code-switching of a whole sentence - against n of cases	.23	.459	12
	Code-switching of part of a sentenc	-.44	.151	12

Factors	CLI variables	r	p	N
Spanish onset age	Editing terms	.06	.838	12
	Meta comments	.24	.449	12
	Insert Implicit Elicit	-.58	.047	12
	WIPP	-.19	.537	12
	Borrowings	-.01	.976	12
	Content Borrowings	-.06	.851	12
	Function Borrowings	.06	.835	12
	Self-Repairs	.26	.399	12
	Lexical Inventions	.19	.550	12
Proficiency in Spanish	Code-switching of a whole sentence - against n of cases	-.08	.792	12
	Code-switching of part of a sentenc	-.14	.655	12
	Editing terms	.18	.559	12
	Meta comments	.03	.921	12
	Insert Implicit Elicit	.23	.456	12
	WIPP	.01	.971	12
	Borrowings	.06	.839	12
	Content Borrowings	.12	.711	12
	Function Borrowings	-.08	.78	12
	Self-Repairs	-.47	.20	12
	Lexical Inventions	.12	.522	12
Formal instruction in Spanish	Code-switching of a whole sentence - against n of cases	-.37	.231	12
	Code-switching of part of a sentenc	.21	.513	12
	Editing terms	.30	.338	12
	Meta comments	.04	.896	12
	Insert Implicit Elicit	-.29	.359	12
	WIPP	-.09	.775	12
	Borrowings	-.14	.645	12
	Content Borrowings	-.24	.437	12
	Function Borrowings	.17	.598	12
	Self-Repairs	-.19	.543	12
		Lexical Inventions	-.30	.337
Use of Spanish	Code-switching of a whole sentence - against n of cases	.23	.459	12
	Code-switching of part of a sentenc	.14	.653	12
	Editing terms	.00	.994	12
	Meta comments	-.24	.449	12
	Insert Implicit Elicit	-.18	.567	12
	WIPP	.06	.849	12
	Borrowings	.12	.706	12
	Content Borrowings	-.19	.546	12
	Function Borrowings	.36	.244	12

Factors	CLI variables	r	p	N
	Self-Repairs	.27	.390	12
	Lexical Inventions	-.19	.550	12
Experience of SA programmes	Code-switching of a whole sentence - against n of cases	-.23	.459	12
	Code-switching of part of a sentenc	-.17	.584	12
	Editing terms	-.06	.838	12
	Meta comments	-.24	.449	12
	Insert Implicit Elicit	.58	.047	12
	WIPP	.47	.121	12
	Borrowings	.18	.568	12
	Content Borrowings	.02	.933	12
	Function Borrowings	.14	.654	12
	Self-Repairs	.02	.946	12
Lexical Inventions	-.19	.550	12	

p>.05

Table 6. Correlations with each type of CLI and the factors that might influence CLI.

Factors	CLI variables	r	p	N
Formal instruction in Catalan	Spanish-based lexical CLI	-.15	.631	12
	English-based lexical CLI	.15	.631	12
Use of Catalan	Spanish-based lexical CLI	-.66	.018	12
	English-based lexical CLI	.66	.018	12
Spanish onset age	Spanish-based lexical CLI	.93	.000	12
	English-based lexical CLI	-.93	.000	12
Proficiency in Spanish	Spanish-based lexical CLI	-.36	.249	12
	English-based lexical CLI	.36	.248	12
Formal instruction in Spanish	Spanish-based lexical CLI	-.26	.413	12
	English-based lexical CLI	.26	.413	12
Use of Spanish	Spanish-based lexical CLI	.12	.709	12
	English-based lexical CLI	-.12	.709	12
Experience of SA programmes	Spanish-based lexical CLI	-.51	.088	12
	English-based lexical CLI	.51	.088	12

p>.05

Table 7. Correlations between the source language of CLI and CLI factors.

APPENDIX 4. TRANSCRIPTION CONVENTIONS - CHAT MANUAL (Mac Whinney, 2007)

1. INCOMPLETE WORDS: Noncompletion of a word: *Text(text)*
2. INTERACTIONAL MARKER: Thinking, waiting: *hmm@p*
3. PAUSE: Unfilled pause: #
4. EXPLANATION: [=text]