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Cross-linguistic influence in multilingual language acquisition: The role of L1 and non-native languages in English and Catalan oral production*¹

Mireia Ortega**

Most research in third language acquisition has focused on the effects that factors such as language distance, second language (L2) status, proficiency or recency have on the choice of the source language (L1) in cross-linguistic influence (CLI). This paper presents a study of these factors, and of the influence that the L1 (Spanish) has on L2 (English) and L3 (Catalan) oral production. Lexical and syntactic transfer are analysed in the production of Catalan and English of two multilingual speakers with similar knowledge of non-native languages. They were interviewed twice in an informal environment. The results show that the L1 is the main source of transfer, both in L2 and L3 production, but its influence decreases as proficiency in the target language increases. Language distance also plays an important role in CLI, especially if proficiency in the source language is high and if there has been recent exposure to it. The findings also suggest that while syntactic transfer is exclusively L1-based, lexical transfer can occur from a non-native language.

Key words: cross-linguistic influence, third language acquisition, multilingual speaker, lexical transfer, syntactic transfer

Gran parte de la investigación en la adquisición de terceras lenguas se ha centrado en los efectos que tienen factores como la distancia entre lenguas, la competencia, el uso reciente, o el estatus de la segunda lengua (L2) en la elección de la lengua origen (L1) desde el punto de vista de la influencia interlingüística. Se presenta aquí un análisis de dichos factores, así como la influencia que tiene la L1 (español) en la producción oral en L2 (inglés) y L3 (catalán). Se analiza la transferencia léxica y sintáctica en la producción en catalán e inglés de dos hablantes plurilingües con conocimiento similar de lenguas extranjeras. Fueron entrevistados dos veces en un ambiente informal. Los resultados muestran que la L1 es la principal fuente de transferencia, tanto en la producción oral en L2, como en L3; pero su influencia disminuye a medida que la competencia en la lengua meta incrementa. La distancia entre lenguas también tiene un papel importante en la influencia interlingüística, especialmente si la competencia en la lengua de origen es buena, y si ha habido un contacto reciente con ella. Los resultados también sugieren que mientras que la transferencia sintáctica se basa exclusivamente en la L1, la transferencia léxica se puede basar en la lengua no nativa.

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Palabras clave: influencia interlingüística, adquisición de terceras lenguas, hablante plurilingüe, transferencia léxica, transferencia sintáctica

Une grande partie de la recherche sur l'acquisition d'une troisième langue a été centrée sur les effets de facteurs tels que la distance entre les langues, la compétence, l'emploi récent, ou le statut de la L2 en ce qui concerne le choix de la langue source du point de vue de l'influence inter linguistique. Cet article a pour but de présenter une analyse de ces facteurs et de l'influence de la L1 (espagnol) sur la production orale en L2 (anglais) et en L3 (catalan). Des facteurs tels que le transfert lexical et syntactique dans la production orale en catalan et en anglais de deux sujets plurilingues ayant une connaissance similaire des langues étrangères y sont analysés. Les résultats montrent que la L1 est la source principale de transfert aussi bien dans la production orale en L2 qu'en L3; mais son influence diminue dans la mesure où la compétence dans la langue d'arrivée augmente. La distance entre langues joue aussi un rôle important dans l'influence inter linguistique, notamment si la compétence dans la langue source est bonne, et s'il y a eu un contact récent avec cette langue. Les résultats suggèrent aussi que, tandis que le transfert syntactique est exclusivement basé sur la L1, le transfert lexical peut s'appuyer sur les langues non natives.

Mots clés: influence inter linguistique, acquisition d'une troisième langue, sujet plurilingue, transfert lexical, transfert syntactique

1. INTRODUCTION

The study of transfer in second language acquisition (SLA) has a long history and has enjoyed a central role in SLA research. The idea of language transfer or cross-linguistic influence (CLI) appeared in the 1950s and 60s with the behaviourist approach, which supported the idea that old habits formed when learning the L1 would influence the way in which new habits were learnt in the L2. This approach considered transfer as a crucial factor in SLA. Since then, transfer has gone through a series of changes in its conceptualisation and has been challenged by a number of researchers, such as Chomsky (1959). The innatist approach demonstrated that not all errors result from the negative influence of the L1, and nowadays transfer is generally considered to be one of various possible factors in SLA.

Most research on language transfer has only considered the influence of the mother tongue on L2 acquisition, without taking into account the learner's knowledge of other languages. Ellis (1985:40) describes the importance that the L1 has in acquiring a foreign language. For him, "the learner's L1 is an important determinant of SLA. It is not the only determinant, however, and may not be the most important. But it is theoretically unsound to attempt a precise specification of its contribution or even try to compare its contribution with that of other factors".

The study of transfer in third language acquisition (TLA) is a much more recent field, and therefore there are more areas that need to be explored. This change of perspective can be observed in the description that Odlin (1989:27) gives of transfer. He takes into account the influence of both native and non-native knowledge in the acquisition of a new language and describes it as "the influence resulting from similarities and differences between the target language and any other language that has been previously (and perhaps imperfectly) acquired."

The studies that have been carried out so far on TLA provide evidence that prior L2 knowledge can actually be the source of influence when acquiring a new language (Ringbom, 1987; Williams & Hammarberg, 1998; Cenoz, 2001).

The rise in interest in the study of TLA over the last few years has occurred for a number of reasons. Nowadays, learning more than two languages, English usually being one of them, is not exceptional, and SLA research needs to account for this increase in the number of languages known by each individual. This increase is due, on the one hand, to the global spread of English, and on the other, to the mobility of the world population and the recognition of minority languages (Grosjean, 1992; Cook, 1995; Jessner, 1999). From a psycholinguistic perspective, it is important to differentiate between second and third language learners, since the latter present specific characteristics different to those of monolingual learners; they are experienced learners and have a different type of competence (Grosjean, 1992; Cook, 1995; Jessner, 1999). Third language learners have specific experiences and strategies related to foreign language learning, as well as a good knowledge of how languages are structured (Thomas, 1992). Second language learners have two systems that can influence each other ($L1 \leftrightarrow L2$), transfer from L1 to L2 (substratum transfer) being the most widely researched. On the other hand, in TLA there are two further bi-directional relationships; the L3 can influence and be influenced by the L1 ($L1 \leftrightarrow L3$) and CLI can also take place between the L2 and the L3 ($L2 \leftrightarrow L3$) (Cenoz, 2001). This paper will contribute to the study of third language acquisition, and more precisely to the research of the factors that favour cross-linguistic influence in multilingual learners.

2. REVIEW OF THE LITERATURE

The study of CLI in TLA is complex since there are a number of factors that can be associated with transfer and many possible interactions. The main areas of investigation have focused on the effects of these factors. Thus, factors such as typological distance (Kellerman, 1983; De Angelis & Selinker, 2001; Cenoz, 2001), L2 status (Williams & Hammarberg, 1998; Hammarberg, 2001), recency (Hammarberg, 2001), context (Dewaele, 2001), proficiency (Ringbom, 1987; Williams & Hammarberg, 1998; Tremblay, 2006), age and grade (Celaya & Torras, 2001; Navés et al., 2005), order of acquisition of the languages (Dewaele, 1998) and constraints on verbal memory (Williams &

Hammarberg, 1998) have been taken into account in the study of CLI. Other areas such as the acquisition of additional languages (L4, L5) or the effect of the L3 on the L2 and L1 (Ringbom, 2001) have recently been receiving more attention.

Many researchers (Cenoz, Hammarberg, De Angelis & Selinker, 2001) consider the roles of typology, recency, L2 status and proficiency as the main factors affecting preference for either the L1 or the L2 as the source language of CLI in L3 production. These factors will be central to the analysis presented in this paper. Although all these factors have been identified, there is still no clear understanding of the importance of each factor in the acquisition of a new language.

Early research in the field revealed that CLI was affected by the linguistic or typological distances between the languages involved (Bild & Swain, 1989). It is commonly believed by experts that if the languages involved are considered to be typologically similar, some facilitating effects in acquisition will appear (positive transfer). On the other hand, when there is divergence between the native and the non-native language, CLI can occur in the form of errors, overproduction, underproduction and miscomprehension (negative transfer) (Odlin, 1989).

Language typology has proved to be influential in the choice of the source language. The learner prefers to borrow a form from the language that is typologically closer to the L3 (Cenoz, 2001; Odlin, & Jarvis, 2004), or from the language that the learner perceives as being closer. This is linked to the concept of psychotypology coined by Kellerman (1983); the closer a language is felt, the more chances there are for transfer to appear.

Cenoz's research (2001), as well as confirming previous studies on typological distance in multilingual acquisition, proves that linguistic distance is a stronger predictor of CLI than, for example, L2 status. It should also be noted that influence from the L2 is favoured when it is typologically close to the L3, especially if the L1 is more distant.

While the typological similarity of the L2 and the L3 has been emphasised as a reason for transfer by different researchers, only De Angelis & Selinker

(2001) mention the possibility of transferring from an L2 that is typologically distant from the L3.

Proficiency, both in the target language and in the other languages known by the speaker (Odlin, T. & Jarvis, S.), also has an important role in the appearance of CLI (Cenoz, 2001). In this respect, it has been reported that less proficient L3 learners transfer more elements than learners with a higher level of proficiency (Ringbom, 1987; Williams & Hammarberg, 1998).

The influence of the L2 on the L3 is stronger in the early stages of learning, and decreases as learning progresses and a higher proficiency is reached. L2 proficiency is of great importance since an advanced learner of the L2 will be able to use L2 strategies that are normally borrowed only from the L1 (Williams & Hammarberg, 1998; Ringbom, 1987). Thus, no L3 forms are borrowed from the L2 unless proficiency is high. This can be particularly true in cases where the L1 is perceived to be more similar to the L3 than the L2 (Tremblay, 2006). This researcher also claims that unless the learner has achieved a high level of automatisisation, the influence that the L2 has on the L3 is negative. Nevertheless, a high proficiency in the L2 is not enough for the L2 to become automatised and L2 exposure is needed for transfer to appear.

Another factor that can determine the presence of interlanguage transfer (ILT) is L2 status and the ‘foreign language effect’ (Hammarberg, 2001). The L2 can be activated to the detriment of the L1 when a desire to suppress the L1 is present. It is believed that suppressing the L1 is inherently ‘non-foreign’, and therefore using an L2 form is a more favourable strategy in acquiring another ‘foreign’ language. The speaker might not want to sound like he is using his L1 (Williams & Hammarberg, 1998). These researchers postulate that there are different acquisition mechanisms for the L1 and the L2, and therefore, when an additional non-native language is learned, the L2 mechanism is activated.

Hammarberg (2001) also makes reference to recency as one factor that may affect the choice of the source language. Speakers are more likely to borrow from a language that they use actively than from a language that they know but do not use in an active way.

Other factors that need to be taken into account are those related to the specific context in which communication takes place. In this respect, Grosjean (1998) identifies the interlocutors, the setting and the topic as factors that need to be analysed in the study of interlanguage transfer.

CLI can occur in different linguistic sub-systems. Although phonological and lexical transfer are the most obvious displays of CLI, they are not the only ones. Thus, syntactic, morphological, orthographic and even pragmatic transfer can take place in L2 or L3 production.

Phonological transfer is the most noticeable type of CLI. Almost all learners, even at advanced levels, retain a foreign accent, which is typically L1-based. L2 transfer at this level is not so common, unless the learner has been recently exposed to an L2 environment. If this is the case, L2 features can occur for a time.

Syntactic transfer has been a controversial issue, and word order, alongside relative clauses, articles and verbal phrases (Kellerman, 1984), is one of the syntactic properties that has been most extensively studied (Odlin, 1990).

Grammatical transfer is nearly always L1-based. It can be L2-based if L2 proficiency is close to that of the L1. As Williams & Hammarberg (1998) have pointed out, the extent of L2 transfer in grammar varies according to both exposure to the L2 and L2 proficiency. It is thought that learners with extensive exposure and high proficiency are likely to transfer more from the L2 than those with low levels of exposure and proficiency. The extent of L2 transfer in grammar and phonology also depends on the typological distance between the L2 and the L3.

L2 transfer in L3 production is especially shown in lexis, which Ringbom (2001) puts down to the cross-linguistic identification of single word forms. This takes place when there is formal similarity between languages. On the other hand, as Ringbom (1986) has claimed, transfer of meaning does not occur so often between non-native languages; it might be restricted to L1 influence.

3. THE STUDY

The aim of the present study is to analyse the different factors that can contribute to the choice of one source language to the detriment of other languages known by learners in L2 and L3 production. It also intends to analyse lexical and grammatical transfer, and to identify the conditions under which these types of transfer appear in L2 and L3 production. In this paper, L3 acquisition and L3 production not only refer to the third language acquired by the learners, but also to all the other languages acquired after this one. Therefore, in this study, the participants' L1 is Spanish, the L2 is English, and the L3 corresponds to all the other non-native languages known by the learners (French, German and Catalan).²

This research study aims to find answers to the following research questions. (1) To what extent does the subjects' first language influence the acquisition of an L2 and an L3? (2) What are the main factors that can be associated with transfer? And finally, (3) Do lexical and syntactic transfer have the same source language? It is assumed that the L1 has an important role in L2 and L3 oral production and that it is therefore the main source of transfer. Transfer appears more extensively in low proficiency levels, and linguistic distance is a stronger predictor of CLI than L2 status. It is also presumed that influence from non-native languages is only present if the following conditions are met: the learner's proficiency is high, the languages are typologically close, and there has been recent exposure to the non-native language. Finally, the study aims to demonstrate that syntactic transfer is mainly L1-based, whereas lexical transfer can occur from non-native languages when the three conditions stated above are present.

2 It has been decided to include all the non-native languages acquired after the L2 under the heading L3 in order to avoid specifying each time if it is L3, L4 or L5 acquisition, since it varies from one participant to the other. The main point is to differentiate between L2 acquisition and multilingual acquisition (L3, L4...), as these two groups present different characteristics due to their specific experience of foreign language learning.

3.1. Subjects

The participants of this study are two multilingual adults, both living in Barcelona at the time of data collection. Both come from Colombia and studied at the same university in their country of origin. Thus, they have the same L1 (Spanish) and similar non-native languages (English, French, German and Catalan).

Subject 1 (S1) is a 27-year-old man with three different interlanguages: English, French and Catalan. This is the order in which S1 has acquired these languages. S1 is a fluent speaker of English and Catalan and has an intermediate level of French. He lived in the USA for two years, where he attended classes at postgraduate level, and has received formal instruction in English for thirteen years. He also attended French classes for five years at college but has never acquired the language in a naturalistic context. He is currently completing his studies in Barcelona, where he has spent one year. After his arrival, he attended a three-month Catalan course and some of his university modules were taught in this language; he is currently receiving formal instruction in Catalan. At present, French is not used in his daily life; he uses English most frequently with certain friends, with his English students and in an academic setting. Finally, S1 uses Catalan in the language classes that he is attending and with some of his friends.

Table 1. Participants in the study and total time of exposure to the languages (naturalistic plus formal instruction)

		Total time of exposure			
Participants	Age	English	French	Catalan	German
S1	27	13 years	5 years	1 year	-
S2	33	10 years	6 1/2 years	5 years	6 months

Subject 2 (S2) is a 33-year-old man with four interlanguages: English, French, German and Catalan. This is the order in which S2 has acquired these languages. S2 is a fluent speaker of English, French and Catalan, and a non-fluent speaker of German. He has received formal instruction in English for ten years and in German for six months. He has had natural exposure as well as formal instruction

in the other two languages (French and Catalan). He studied French for 6 years at secondary school and at university and recently spent four months in France. He has lived in Barcelona for the last five years. After his arrival to the city he attended a six-month Catalan course and some of his university modules were taught in this language. Currently, S2 does not use German and he uses French only by e-mail with some of his friends. English is the language that he uses with his students and in his academic field. Although Catalan is the language of his environment, he only uses this language in an academic setting and not in his daily life.

Table 2. Type of exposure: Classroom instruction and Natural exposure in each language

Participants	Type of Exposure			
	English	French	Catalan	German
S1	CI / NE	CI	CI / NE	-
S2	CI	CI / NE	CI / NE	CI

CI = Classroom instruction

NE = Natural exposure to the language

3.2. Tools

Both participants were interviewed individually on two separate occasions. The interviews were semi-structured and took place in an informal environment.

The subjects also completed a background questionnaire regarding their language learning history, which included questions regarding the knowledge and use of each of the languages known by the two participants, the onset age and the type of exposure to each language. It requested details concerning the number of years that they had been exposed to each language, both in formal and informal settings, as well as their current use of the languages. The questionnaires were completed some days before the interviews took place.

3.3 Procedure

The questionnaire was the first activity that the participants were involved in. It was written in Catalan so both participants decided to use this language

to answer the questions. There was no time limit for the completion of the questionnaire and they were asked to report on their experience of second and foreign language acquisition.

Some days later, the semi-structured interviews began. Participants were interviewed twice. The first interview was held in English and the subjects were asked to talk about the last film that they had seen, movies and cinema in general. One week later, they were interviewed again, but this time the interview was in Catalan and they were asked to explain what they had done during that day, leading to an explanation of their interests and current occupations. Therefore, both conversations dealt with everyday topics, enabling the comparison of the two productions.

The interlocutor was a native speaker of Catalan and Spanish and a fluent speaker of English. The interview was consciously designed to instigate spontaneous production from the subjects; thus, the conversations took different directions depending on the subjects' interests.

Each conversation lasted between 15 and 20 minutes. The interviews were audio-taped and transcribed and all instances of CLI at the lexical and syntactic level were identified and subsequently analysed.

3.4. Data analysis

Analysis consisted of identifying instances of transfer and determining their language of origin. In order to be able to compare the four transcriptions in a consistent way, the first 1100 words of each transcription were selected for analysis.

First of all, the total number of errors in the four transcriptions were identified and subsequently classified according to the type of error: transfer and developmental errors.³ The next step was to identify the source language of

3 In this study, errors should be understood as non-target-like forms. Transfer cannot always be considered an error because in many cases it is just a choice that the multilingual speaker makes in a conversation with another multilingual speaker.

the transferred forms. Not only the L1 (Spanish), but also the other foreign languages known by the learners were taken into account. The transferred forms were then further classified into instances of lexical transfer and syntactic transfer. Other types of CLI were identified, such as morphological or pragmatic transfer, but they were classified in the ‘other types of transfer’ category.

Lexical interlanguage transfer consists of the use of an entire non-target word in the production of the target language (borrowing), the adaptation of the morphology or phonology of an L1 word to the target language (coinage or lexical invention), the use of a target word with the L1 meaning (deceptive cognate or false friend) or the literal translation from one language to another of idiomatic phrases (calque) (Dewale, 1998; Celaya & Torras, 2001; Ringbom, 2001, 2006). Words intentionally and consciously borrowed from the L1 have also been included in this group. Some examples of what has been considered as lexical transfer can be observed in the following sentences, which are taken from the conversations with the two subjects:

- (1)[...] nosaltres li donem tota la informació i bon... hi ha molta feina.
[Target form (TF): bé]
[we give him all the information and well... there’s a lot of work].
- (2)[...] molta de la feina grossa termina sent responsabilitat meva. [TF: acaba]
[much of the difficult work ends up being my responsibility].
- (3)[...] this film is very particular. [TF: peculiar]
- (4)Normalment cada dia m’aixeco cap a les set i mitja. [TF: dos quarts de vuit]
[I usually get up at around half past seven]
- (5)He has problems making friends because he is very rude in his manners.
[TF: he has very rude manners]
- (6)Tinc dos capítols per reafèr. [TF: refer]
[I have two chapters that need to be rewritten]

Sentences (1) and (2) are examples of borrowing, taken from the oral production in Catalan of one of the subjects. In the former, the source language of the borrowing is French whereas in the latter it is Spanish. Example (3) is an instance of false friend in which the English word ‘particular’ is used with the Spanish meaning. Sentences (4) and (5) are examples of calque, since the expressions used both in Catalan and English are literal translations from the L1 (Spanish)⁴. Finally, (6) is an example of lexical invention, since the learner creates a non-existing word in the target language by adapting an L1 word (*rehacer*) to the conventions of the L3.

On the other hand, each entire syntactic structure or idiomatic expression that was literally translated into the target language was considered syntactic transfer. Syntax includes areas such as word order, relative clauses, subject elision or articles (Manchón, 2001). The following examples illustrate this type of transfer:

- (7)[...] lliuraran un treball acadèmic de una complexitat considerable. [TF: d’una]
[they will hand in an academic project of considerable complexity].
- (8)[...] is... is sort of like, like some mixture about drama and a comedy.
[TF: it is]
- (9)[...] comedies I like them a lot also. [TF: comedies, I also like them a lot]
- (10) I després va marxar cap a la seva casa [TF: casa seva]
[And then he went home]

Example (7) illustrates CLI from Spanish in Catalan production. In this example, the preposition ‘de’ and the article ‘una’ need to be contracted (‘d’una’). However, the learner prefers to use the form in his mother tongue. Sentences (8) and (9)

4 I have classified ‘set i mitja’ as a calque, but it is important to point out that this calque is not exclusive to the participants of the present study. Some Catalan native speakers also produce the same type of construction, especially in the area of Barcelona.

are taken from the subjects' oral production in English and are also examples of L1 transfer. The former is an instance of subject elision whereas the latter illustrates transfer of word order. Example (10) is also an instance of transfer of word order, but in this case, it is taken from the oral Catalan data.

4. RESULTS AND DISCUSSION

The results of the present case study provide tentative answers to the three research questions stated above.

Regarding the first hypothesis, that the L1 has an important role in L2 and L3 production and is the main source of transfer, the analysis revealed that Spanish, the participants' L1, is by far the main source of influence on English and Catalan oral production. As can be observed in the results in tables 3 and 4, both subjects mostly produce Spanish-based words and expressions when word transfer from one language to the other occurs.

Table 3. S1 errors

Target Language	Catalan	English
Total number of errors	54	26
Total number of transfer	45	10
Percentage of transfer	83,33%	38,46%
Transfer from L1 – Spanish	100%	100%
Transfer from other foreign languages	0	0

S1 transfer is 100 % Spanish-based in both Catalan and English production. The other languages known by the speaker do not have any influence in L2 and L3 production. The situation is the same for S2 when the target language is English. However, in Catalan oral production, Spanish-based transfer comprises 81% of the occurrences. The other 19% is made up of transferred forms from French (7 tokens) and English (1 token).

These results confirm those of prior studies that have focused on the importance of the mother tongue. However, it should also be noted that this high percentage

of L1 transfer may be due to language distance in the case of Catalan production. Some researchers (Cenoz, 2001; Odlin & Jarvis, 2004) have reported that learners prefer to borrow a form from the language that is closer to the L3. The participants may perceive Catalan as being typologically close to their L1, Spanish, and thus, transfer from this language in the majority of cases. It is reasonable to predict that if the two languages were not so close, the percentage of L1 transfer would considerably decrease.

The case of English is quite different. English is the only non-Romance language known by S1; thus, it is the only Germanic language from which he could transfer. Therefore, his L1 is chosen as the source language for transfer. S2, on the other hand, has some knowledge of another Germanic language. Nevertheless, his level of proficiency is not high enough to be able to transfer from this language.

Table 4. S2 errors

Target Language	Catalan	English
Total number of errors	58	41
Total number of transfer	42	13
Percentage of transfer	77,58%	31,70%
Transfer from L1 – Spanish	81%	100%
Transfer from other foreign languages	19%	0

With respect to the second research question, which made reference to the main factors that can be associated with transfer, it has been demonstrated that transfer appears more extensively at lower levels. This finding confirms that of prior studies (Ringbom, 1987; William & Hammarberg, 1998). Given that in this research study transfer from the L1 is virtually the only transfer that takes place, it can also be stated that L1 influence has a tendency to decrease as target language proficiency increases.

Both subjects have a lower level in Catalan than in English. Thus, they transfer more when they speak in the former language. While S1 transferred 45 forms or expressions when speaking in Catalan (83% of the total number of errors), he only transferred 10 times in English production (38% of the total number of

errors). The same applies to S2, who transferred 42 times in Catalan production (77% of the total number of errors), and only 13 times in English production (31% of the total number of errors).

The results also suggest that in Catalan production the number of instances of CLI is always higher than the number of developmental errors. On the other hand, in English production this is reversed; that is to say, the number of developmental errors surpasses instances of CLI. This might be due to language distance. It is easier to transfer from a language that is typologically closer to the target language, and developmental errors are more likely to occur when the vocabulary and structures in the target language are very different from those in the L1. In this situation, positive transfer from the L1 Spanish to the L3 Catalan takes place.

As demonstrated in previous research (Cenoz, 2001), linguistic distance is a stronger predictor of CLI than L2 status. Thus, the language that most influenced Catalan production was the language that is typologically closer to it, corresponding to the L1 in this study. It should be noted that linguistic distance only plays an important role when the learner has a high proficiency in the source language. Thus, oral production in English was not influenced by German (the language most related to English), since proficiency in German was not high enough for transfer to occur. Some researchers such as Ringbom (1998) and Williams & Hammarberg (1998) have reported that no L3 forms are borrowed from non-native languages unless proficiency is high. It can be concluded that language distance goes hand in hand with source language proficiency in this study.

Although S1 knows another language closely related to Catalan, i.e. French, his knowledge in this language is not high enough. Furthermore, it could be the case that S1 perceived Spanish as being closer to Catalan than French. This might also explain why S2 transfers more extensively from Spanish than from French in Catalan production. It could also be explained in terms of frequency of use and recency, since French is not very often used by S1 and has not been used recently.

The role that other foreign languages have in CLI has already been discussed; the influence of these languages is not as significant as that of the L1 in this

study. However, since some French influence occurred in the Catalan oral production of one of the participants, it is worth mentioning. As hypothesized, influence from non-native languages only occurs when three conditions are present. Firstly, the learner's proficiency must be high; secondly, the languages need to be closely related; and finally, the subject needs to have been recently exposed to the non-native language.

This is the case of S2. He is competent in French, which like Catalan is a Romance language. Furthermore, S2 has been recently exposed to French in a naturalistic context, having spent four months in France. In contrast, since no instances of French influence have been found in the Catalan and English production of the learner with an intermediate level of French proficiency, and who has had no natural exposure to French, it is reasonable that this language had no significant influence on his other foreign languages. Tremblay (2006) has already pointed out that L2 exposure is fundamental for transfer from the L2 to occur.

The only instance of English influence in Catalan production has not been considered in this study as the data is insufficient to be taken into account.

The third hypothesis has also been proved: syntactic transfer is exclusively L1-based, and lexical transfer can occur from a non-native language only when proficiency in the non-native language is high, the languages are close and the subject has been recently exposed to the language. This result contradicts some prior findings (Williams and Hammarberg, 1998) which suggest that transfer in grammar from non-native languages can occur if exposure and proficiency are high.

As can be observed in tables 5 and 6, syntactic transfer is exclusively L1-based in both participants in Catalan and English production. On the other hand, some transfer from other languages known by the subjects can occur in instances of lexical transfer. S1 only transferred from his L1, but S2 transferred words from non-native languages, mainly from French, on 8 occasions. Moreover, the number of transfer instances from French surpasses transfer from Spanish. This does not occur in the production of S1 because the three necessary conditions allowing transfer from an L2 are not present.

Table 5. S1 Lexical and Syntactic transfer from the L1 and other foreign languages

Target Language	Catalan	English
Lexical Transfer from L1	24	3
Lexical Transfer from other foreign languages	0	0
Syntactic Transfer from L1	20	7
Syntactic Transfer from other foreign languages	0	0

Table 6. S2 Lexical and Syntactic transfer from the L1 and other foreign languages

Target Language	Catalan	English
Lexical Transfer from L1	6	0
Lexical Transfer from other foreign languages	8	0
Syntactic Transfer from L1	9	12
Syntactic Transfer from other foreign languages	0	0

Tables 7 and 8 show the percentages of lexical and syntactic transfer. As can be observed in these tables, lexical transfer is higher than syntactic transfer in Catalan oral production (the language that is typologically closer to Spanish) in both participants. In English, on the other hand, syntactic transfer is higher than lexical transfer.

It seems that it is easier to transfer words when the vocabulary in both the L1 and the target language is similar. If the vocabulary in the target language does not look like that of the L1, the speaker seems to be more reluctant to transfer from his mother tongue.

Regarding syntactic transfer, it appears that both participants transfer from their L1 in both Catalan and English oral production. However, since Catalan

is much closer to Spanish than English, positive transfer takes place in oral production in this language. In English oral production the type of transfer that takes place is negative, producing more non-target forms.

Table 7. S1 percentage of Lexical and Syntactic Transfer

Target Language	Catalan	English
Lexical Transfer	53,33%	30%
Syntactic Transfer	44,44%	70%
Other types of transfer	2,22%	0

Table 8. S2 percentage of Lexical and Syntactic Transfer

Target Language	Catalan	English
Lexical Transfer	33,33%	0%
Syntactic Transfer	21,42%	92%
Other types of transfer	45,23%	8%

5. CONCLUSION

Overall, this study confirms findings from previous L3 research. First, it has shown that the L1 plays an important role in CLI in multilingual learners. This importance could have been increased by the fact that the participants' L1 and one of the target languages analysed are typologically very close. Thus, it would be interesting to analyse subjects with other languages, especially languages which are typologically different, in order to measure the importance of the L1 in CLI.

Although most transfer in this study is L1-based, transfer from other foreign languages is also found. Researchers have already identified the factors that can contribute to the choice of the source language, but they do not agree on the importance that each factor holds in the acquisition of a new language. Thus, some highlight the importance of proficiency and exposure while others emphasise the significance of language distance. In this study it has been shown that each

of these three conditions must be present in order to transfer from a non-native language. If only one of these is missing, transfer from a non-native language does not occur. This has been found to be the case in lexical transfer. On the other hand, syntactical transfer appears to be exclusively L1-based in this study.

Follow-up studies involving more subjects are required in order to validate many of the hypotheses and findings from this study. Additionally, it is necessary to encompass other languages, including typologically different languages, as well as subjects with different degrees of language proficiency.

Finally, it would be interesting to collect and analyse French oral production since it is a Romance language and both participants in the study speak it. In this case, it would be worth analysing the influence of the two dominant languages (L1 Spanish and L2 English) on the less dominant languages (L3s French and Catalan), thus confirming or refuting the ‘foreign’ language effect.

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REFERENCES

- Bild, E.R. and Swain, M. (1989). Minority language students in a French immersion programme: their French proficiency. *Journal of Multilingual and Multicultural Development*, 10, 255-74.
- Celaya, M.L. and Torras, R. (2001). L1 influence and EFL vocabulary: Do children rely more on L1 than adult learners? *Proceedings of the 25 AEDEAN Conference*. Granada.
- Cenoz, J., Hufeisen, B. And Jessner, U. (2001). *Cross-linguistic Influence in Third Language Acquisition: Psycholinguistic Perspectives*. Clevedon: Multilingual Matters.
- Cenoz, J. (2001). The effect of linguistic distance, L2 status and age on cross-linguistic influence in third language acquisition. In J. Cenoz, B. Hufeisen & U. Jessner (eds.), *Cross-linguistic Influence in Third Language Acquisition: Psycholinguistic Perspectives* (pp. 8-20). Clevedon: Multilingual Matters.
- Chomsky, N. (1959). Review of Verbal Behaviour by B.K. Skinner. *Language*, 35, 26-58.

- Cook, V. (1995). Multi-competence and the learning of many languages. *Language, Culture and curriculum*, 8, 93-8.
- De Angelis, G. and Selinker, L. (2001). Interlanguage transfer and competing linguistic systems in the multilingual mind. In J. Cenoz, B. Hufeisen & U. Jessner (eds.), *Cross-linguistic Influence in Third Language Acquisition: Psycholinguistic Perspectives* (pp. 42-58). Clevedon: Multilingual Matters.
- Dewaele, J-M. (1998). Lexical inventions: French interlanguage as L2 versus L3. *Applied Linguistics*, 19, 471-490.
- Dewaele, J-M. (2001). Activation or inhibition? The interaction of L1, L2 and L3 on the language mode continuum. In J. Cenoz, B. Hufeisen & U. Jessner (eds.), *Cross-linguistic Influence in Third Language Acquisition: Psycholinguistic Perspectives* (pp. 69-89). Clevedon: Multilingual Matters.
- Ellis, R. (1985). *Understanding Second Language Acquisition*. Oxford: Oxford University Press.
- Grosjean, F. (1992). Another view of bilingualism. In R.J. Harris (ed.), *Cognitive Processing in Bilinguals* (pp. 51-62). Amsterdam: North Holland.
- Grosjean, F. (1998). Studying bilinguals: Methodological and conceptual issues. *Bilingualism: Language and Cognition*, 1, 131-49.
- Hammarberg, B. (2001). Roles of L1 and L2 in L3 production and acquisition. In J. Cenoz, B. Hufeisen & U. Jessner (eds.), *Cross-linguistic Influence in Third Language Acquisition: Psycholinguistic Perspectives* (pp. 21-41). Clevedon: Multilingual Matters.
- Jessner, U. (1999). Metalinguistic awareness in multilinguals: Cognitive aspects of third language learning. *Language Awareness*, 8, 3&4: 201-9.
- Kellerman, E. (1983). Now you see it, now you don't. In S. Gass and L. Selinker (eds.), *Language Transfer in Language Learning* (pp. 112-34). Rowley, MA: Newbury House.
- Kellerman, E. (1984). The empirical evidence for the influence of the L1 in interlanguage. In A. Davies et al. (eds.), *Interlanguage*. Edinburgh: Edinburgh University Press.
- Manchón, R.M. (2001). Un acercamiento psicolingüístico al fenómeno de la transferencia en el aprendizaje y uso de segundas lenguas. In S. Pastor & V. Salazar (eds.), *Estudios de lingüística* (pp. 39-72). Alicante: Universidad de Alicante.
- Odlin, T. (1989). *Language Transfer. Cross-Linguistic Influence in Language Learning*. Cambridge: Cambridge University Press.
- Odlin, T. and Jarvis, S. (2004). Same source, different outcomes: A study of Swedish influence on the acquisition of English in Finland. *The International Journal of Multilingualism* 1, 2, 123-140.
- Ringbom, H. (1986). Crosslinguistic influence and the foreign language learning process. In E. Kellerman & Shardwood Smith (eds.), *Crosslinguistic Influence in Second Language Acquisition* (pp. 150-62). New York: Pergamon Press.
- Ringbom, H. (1987). *The Role of the First Language in Foreign Language Learning*. Clevedon: Multilingual Matters.

Ringbom, H. (2001). Lexical transfer in L3 production. In J. Cenoz, B. Hufeisen & U. Jessner (eds.), *Cross-linguistic Influence in Third Language Acquisition: Psycholinguistic Perspectives* (pp. 59-68). Clevedon: Multilingual Matters.

Ringbom, H. (2006). The importance of different types of similarity in transfer studies. In J. Arabski (eds.), *Cross-linguistic Influences in the Second Language Lexicon* (pp. 36-45). Clevedon: Multilingual Matters.

Navés, T., Miralpeix, I. and Celaya, M.L. (2005). Who transfers more... and what? Cross-linguistic influence in relation to school grade and language dominance in EFL. *International Journal of Multilingualism*, 2, 2, 1-22.

Thomas, J. (1992). Metalinguistic awareness in second – and third – language learning. In R.J. Harris (ed.), *Cognitive Processing in Bilinguals* (pp. 531 – 45). Amsterdam: North Holland.

Tremblay, M. (2006). Cross-linguistic influence in third language acquisition: The role of L2 proficiency and L2 exposure. *CLO/OPL*, 34, 109-119.

Williams, S and Hammarberg, B. (1998). Language switches in L3 production: Implications for a polyglot speaking model. *Applied Linguistics* 19, 295 – 333.

THE AUTHOR

**Mireia Ortega holds a Masters degree in Applied Linguistics from Universitat Pompeu Fabra. She is currently pursuing her Ph.D. in Applied Linguistics at the English and German Philology Department of the Universitat de Barcelona. E-mail: mireiaod@yahoo.es