

L1 Use, Lexical Richness, Accuracy and Syntactic Complexity in the Oral Production of CLIL and NON-CLIL Learners of English

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As more focus on communication is promoted in Content and Language Integrated Learning (CLIL) classrooms and general proficiency is usually enhanced in these settings, this study aims to explore (i) whether a lower rate of L1 use, as regards interactional strategies and transfer lapses, is found in CLIL learners when compared to NON-CLIL learners; (ii) whether differences exist between both groups in lexical richness (type/token ratio and D), accuracy (word order and correct production of the definite and indefinite article) and syntactic complexity (production of simple and complex sentences and variety of tenses used); and (iii) whether L1 use correlates with lexical richness, accuracy and syntactic complexity. The analysis of an oral production task of two groups of fourteen year-old Basque/Spanish bilingual students learning L3 English indicates that the CLIL group made lower use of L1. The CLIL group also obtained better scores in lexical richness and general proficiency as well as in the correct production of definite and indefinite articles and in the use of complex clauses. No correlation was observed between L1 use and accuracy or syntactic complexity, suggesting that a decrease in L1 use is not always related to better performance in specific aspects of language or the use of more complex language.

Keywords: CLIL; L1 use; accuracy; syntactic complexity; lexical richness; general proficiency

Uso de la L1, riqueza léxica, precisión y complejidad sintáctica en la producción oral de aprendices de inglés en contextos AICLE y NO-AICLE

Este trabajo tiene como objetivo explorar las diferencias entre un grupo de aprendices en un contexto de Aprendizaje Integrado de Contenidos y Lenguas Extranjeras (AICLE) y uno en NO-AICLE con respecto a (i) si el grupo AICLE hace un menor uso de la L1 en contextos de estrategias de interacción y de errores de transferencia en comparación con el grupo NO-

AICLE; (ii) si existen diferencias entre ambos grupos en riqueza léxica (type/token ratio y D), precisión (orden de palabras y la producción de los artículos definido e indefinido) y complejidad sintáctica (producción de oraciones principales y subordinadas y variedad de tiempos verbales utilizados); y (iii) si el uso de la L1 se correlaciona con la riqueza léxica, la precisión y la complejidad sintáctica. El análisis de una tarea de producción oral llevada a cabo por dos grupos (AICLE y NO-AICLE) de bilingües vasco-castellano de catorce años, aprendices de inglés como L3 indica que el grupo AICLE hace un menor uso de la L1. También hemos observado que el grupo de AICLE obtiene mejores resultados en riqueza léxica y nivel general. Con respecto a las medidas de precisión y complejidad sintáctica, encontramos diferencias entre ambos grupos solamente en la producción correcta de los artículos definido e indefinido y en el uso de las oraciones subordinadas. No hemos observado ninguna correlación entre el uso de la L1 y la precisión y complejidad sintácticas, lo que sugiere que un menor uso de la L1 no está siempre relacionado con un mejor rendimiento en aspectos específicos del lenguaje ni con la complejidad del mismo.

Palabras clave: AICLE; uso de la L1; precisión; complejidad sintáctica; riqueza léxica; competencia general

1. INTRODUCTION

Cross-linguistic influence is one of the topics that pervades the third language (L3) acquisition literature written from a psycholinguistic perspective (García Mayo 2012b).¹ The study of cross-linguistic influence in L3 acquisition has focused on the identification of the specific conditions that may explain the use of one or more languages when speaking in the L3 and its implications for the organization of the multilingual lexicon (Cenoz 2001, 2003; Dewaele 2001; Hammarberg 2001). The conditions in which cross-linguistic influence takes place are determined by several factors (Cenoz 2001): (i) psychotypology or perception of the linguistic distance among the languages (Bild and Swain 1989), (ii) proficiency level in the languages involved (Ringbom 1987), (iii) age (Cenoz 2001), (iv) context (Dewaele 2001), (v) foreign language effect (De Angelis and Selinker 2001) and (vi) recency (Hammarberg 2001). More recently, Rothman and Cabrelli-Amaro (2010) have claimed that language level (phonetic/phonological, lexical and morphosyntactic levels) is another factor which may intervene in the selection of the source language (see Martínez Adrián, Gallardo del Puerto and Gutiérrez Mangado (2013) for a study conducted in the Basque context in this respect). Nevertheless, it is very difficult to identify one single factor which determines cross-linguistic influence in L3 acquisition (Cenoz 2001; Murphy 2005; García Mayo 2012b).

Cross-linguistic influence has also been related to several functions (Williams and Hammarberg 1997; Hammarberg 2001), different levels of intentionality and automaticity (Poulisse and Bongaerts 1994) and different language modes (Grosjean 1998). On the basis of the different dimensions of transfer, Cenoz proposes two “extreme positions”: interactional strategies and transfer lapses (2003, 3). As defined by Cenoz, “[i]nteractional strategies are intentional switches into languages other than the target language (TL). The multilingual speaker makes the decision to use a language other than the TL when s/he is asking for help from her/his interlocutor or making comments about her/his own production” (2003, 3). She describes transfer lapses as “[n]on-intentional switches which are not preceded by a pause or a false start and can be regarded as automatic (see Poulisse and Bongaerts 1994, 3).”

Examples of interactional strategies from Basque and transfer lapses from Spanish are shown in (1) and (2), respectively:

(1) CHILD: *eb nola da oreina?* [“How do you say deer?”]

(2) CHILD: # *and* # *and the dog salt* /salt/ *the window* [saltar, “jump”] (Cenoz 2003, 5)

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This paper will follow the categorization of transfer in terms of interactional strategies and transfer lapses depicted in Cenoz (2003). As more focus on communication is promoted in Content and Language Integrated Learning (CLIL) classrooms and general proficiency is usually enhanced in these settings, we seek to explore whether a lower rate of first language (L1) use as regards interactional strategies and transfer lapses is found in CLIL learners when compared to NON-CLIL learners while they narrate a story in L3 English. In addition, another goal is to investigate whether differences exist between CLIL and NON-CLIL learners with respect to lexical richness, accuracy (word order and correct production of the definite and indefinite article), as well as syntactic complexity (production of simple and complex sentences and variety of tenses used) in the L3. A previous study carried out with the same sample group revealed no statistically significant differences when learners were tested on the use of null subjects, null objects and negation. However, the CLIL and the NON-CLIL groups analyzed did differ with respect to the use of placeholders.² This paper constitutes a follow-up to the previous paper and attempts to shed more light on the acquisition of formal aspects of language by CLIL and NON-CLIL learners. Finally, as previous studies carried out in CLIL and NON-CLIL settings have concluded that there is a decrease in L1 use as TL proficiency increases (Herwig 2001; Navés, Miralpeix and Celaya 2005; Serra 2007; Agustín Llach 2009; Lázaro Ibarrola and García Mayo 2012), our third goal will be to study whether L1 use correlates with lexical richness, accuracy and syntactic complexity.

This paper is organized as follows. It begins with an overview of studies dealing with the use of the L1 in interactional strategies and transfer lapses in CLIL and NON-CLIL learners in written and oral production. The next section describes empirical research studies comparing CLIL and NON-CLIL learners with respect to general proficiency as well as specific linguistic features. The main research questions of the study are subsequently addressed, and the methodology of the study then described. Next the results are presented and discussed and the paper finishes with the main conclusions to be drawn from the study.

2. L1 USE IN INTERACTIONAL STRATEGIES AND TRANSFER LAPSES IN NON-CLIL AND CLIL LEARNERS

Several NON-CLIL studies have focused on both the use of interactional strategies and transfer lapses (Cenoz 2003; Muñoz 2007). Cenoz (2003) examined the influence of two previously known languages (Basque and Spanish) on the acquisition of English as L3 by primary school children at two testing times in an oral narration task. She reported that learners made use of Basque as a source language in

² Placeholders in this sense refer to the insertion of *is* as an agreement morpheme, as in the following example: “the boy *is* come.”

interactional strategies. The use of Basque was influenced by its use as the school language, the interlocutor's knowledge of Basque or the level of informality in which the conversation took place. In contrast, use of Spanish was favoured in the case of transfer lapses (as in Cenoz 2001). Factors such as linguistic typology, general sociolinguistic context (Spanish as the majority language) or individual differences could be more important in this case.

Similarly, Muñoz (2007) examined lexical transfer (borrowings and foreignizings) and code-switching in the oral production of English by Catalan-Spanish bilingual learners who had learned French as the first foreign language at school. Spanish and Catalan were the only source languages for transfer. Catalan-dominant learners transferred from Catalan, Spanish-dominant from Spanish and family bilinguals from both languages. On the other hand, learners code-switched into Catalan with much higher frequency than they did into Spanish. This seemed to be motivated by contextual factors: the school setting and the interlocutor. Catalan was the language used in the school and the language used by the researchers who were probably considered by the students to be equivalent to teachers. Additionally, Muñoz (2007) concluded that the type of cross-linguistic influence found was more frequent among less proficient learners (see also Ringbom 1987; Möhle 1989; Poulisse 1990).

Other NON-CLIL studies have examined the use of borrowings and lexical inventions and proficiency as a predictor for transfer. Borrowings are more common in the early stages of acquisition when there is a need to communicate and a lack of lexical knowledge in the second language (L2). Learners resort to the L1 as a compensatory communication strategy (Celaya 1992; James 1998; Ecke 2001). Navés, Miralpeix and Celaya (2005) found a decrease in the use of borrowings and lexical inventions as learners progressed in school grade.

In the case of studies conducted in CLIL contexts, some of the studies dealing with L1 use have been carried out with a single group of CLIL learners (Serra 2007; Lázaro Ibarrola and García Mayo 2012), while others have compared CLIL and NON-CLIL groups (Agustín Llach 2009; Celaya and Ruiz de Zarobe 2010). Lázaro Ibarrola and García Mayo (2012) examined the use of L1 in discourse markers and repair sequences as well as the morphosyntactic development of a group of fifteen-year-old students immersed in a CLIL context in the Basque Country. They concluded that L1 use significantly decreased throughout the two-year period studied and that morphosyntax developed significantly. Similarly, Serra (2007) also analyzed the use of repair sequences by German-speaking primary-school children learning Italian or Romansch in a CLIL context. L1 use in repair sequences also dropped as learners gradually gained a better command of the target language. In contrast, Agustín Llach (2009) compared a group of CLIL students to a group of NON-CLIL learners of L2 English in their sixth year of primary education. In general, more lexical transfer (borrowings, coinages and calques) was observed in the NON-CLIL group in a written production task. This author provides two explanations that could account

for this difference. First, CLIL learners displayed a higher command of English as confirmed by the cloze test and reading comprehension task administered. Second, CLIL learners may conceive English as a means of communication rather than a mere subject matter and their written compositions as a communication act, which leads them to a lower use of borrowings as this would hinder communication. Similar results are reported in Celaya and Ruiz de Zarobe (2010) in the case of secondary school adolescents.

However, in general, there is a scarcity of studies comparing CLIL and NON-CLIL approaches in terms of cross-linguistic influence. There is also a lack of studies comparing CLIL and NON-CLIL learners in which both interactional strategies and transfer lapses are examined. Additionally, most studies carried out in CLIL contexts have found a correlation between L1 use and general proficiency in the TL (Serra 2007; Agustín Llach 2009; Lázaro Ibarrola and García Mayo 2012). However, there is a need to examine whether there is also a correlation between L1 use and lexical richness, accuracy and syntactic complexity in the TL use. These questions will be addressed in this paper.

3. RESEARCH OUTCOMES IN CLIL

CLIL is an umbrella term that has been adopted by various European researchers and agencies as a generic term for programmes that use a language different from the L1 as a medium of instruction. CLIL implementations are heterogeneous with different contextual factors influencing both their aims and outcomes (Nikula, Dalton-Puffer and Llinares 2013), all of which makes it difficult to pin down the exact limits of the reality that this term refers to (Alejo and Piquer 2010). This diversity of CLIL implementations leads us to restrict the examination of research outcomes to the context in which the study was carried out instead of offering a more general analysis of research findings in CLIL contexts.

Recent investigations carried out in two bilingual communities in Spain (the Basque Country and Catalonia) in which two co-official languages are spoken (Basque and Spanish in the former and Catalan and Spanish in the latter) have revealed that CLIL instruction has clear benefits on the learners' general proficiency. In primary education, Jiménez Catalán, Ruiz de Zarobe and Cenoz (2006) analyzed the acquisition of English by CLIL and NON-CLIL learners and reported that the CLIL groups outperformed the NON-CLIL groups in tasks designed to measure general competence. In secondary education, Ruiz de Zarobe (2008, 2010b) compared the longitudinal oral and written competence of CLIL and NON-CLIL students in their third and fourth years of compulsory secondary education and in post-secondary education. The results from both tasks showed statistically significant differences in favour of CLIL, even when CLIL learners in lower grades were compared to older NON-CLIL students. Similarly, results reported by Lasagabaster (2008) show that a CLIL group in the fourth year of

secondary education significantly outstripped an age-matched NON-CLIL group in grammar, listening, speaking and writing, and even surpassed the results of a NON-CLIL group of older learners. In the Catalanian context, Navés and Victori (2010) carried out two different studies to investigate whether CLIL learners could catch up with older learners one, two or three grades ahead of them, and reported that the CLIL learners at lower grades were as good as or better than the older learners. A recent study that has compared a CLIL group to matching NON-CLIL groups while keeping constant the variable of age at testing and the number of hours of exposure to the TL (one of the main limitations of previous CLIL studies) has also revealed the superiority of CLIL learners when tested on general proficiency (Martínez Adrián and Gutiérrez Mangado 2015).

Nevertheless, the observed benefits of CLIL as regards general proficiency do not extend to all language specific areas. In a study conducted by Gallardo del Puerto, Gómez Lacabex and García Lecumberri (2009) learners' pronunciation was holistically assessed by five naïve English-native monolinguals on the basis of three different nine-point scales: degree of foreign accent (FA), FA comprehension and FA irritation. Differences between the mean scores obtained by the two groups favoured CLIL learners in the case of the communicative effects of FA (comprehension and irritation) but not when degree of FA was considered. Martínez Adrián and Gutiérrez Mangado (2009) examined data from Basque/Spanish bilingual learners of L3 English in CLIL and NON-CLIL contexts in order to test whether L1 transfer effects (the use of null subjects, null objects, insertion of placeholders and negation) would be minimized by participation in a CLIL programme. The results showed that CLIL learners significantly outperformed NON-CLIL learners only in the use of placeholders. The study carried out by García Mayo and Villarreal Olaizola (2010) on the acquisition of inflectional morphology by secondary school learners of L3 English in a CLIL and a NON-CLIL context reported no significant differences between the groups in the development of suppletive and affixal tense and agreement morphemes (third person singular *-s*, past tense *-ed* and auxiliary and copula *be*). Lázaro Ibarrola (2012) studied the morphosyntactic development of a CLIL and a NON-CLIL group of Basque-Spanish adolescents learning English in high-school over a two-year period. Despite the better results obtained by the CLIL group, the improvement was mainly due to higher production of irregular past forms, not inflectional morphemes.

In light of the results observed as regards specific language areas, several researchers have made a call for more focus-on-form in CLIL classrooms (García Mayo 2009, 2012a; Ruiz de Zarobe and Lasagabaster 2010; Basterrechea Lozano and García Mayo 2013; Martínez Adrián, Gallardo del Puerto and Gutiérrez Mangado 2013) in order to promote the better development of particular aspects of language. Content-based and form-focused instructional options need to be counterbalanced so as to provide L2 learners with a range of opportunities to process and negotiate language through content across the curriculum (Lyster 2007, 134).

4. RESEARCH QUESTIONS

Based on previous findings on the use of the L1 in interactional strategies and transfer lapses (Cenoz 2001, 2003; Muñoz 2007; Lázaro Ibarrola and García Mayo 2012, among others) as well as the lack of differences between CLIL and NON-CLIL learners found with respect to formal aspects of language (Ruiz de Zarobe 2010a), this study addresses the following research questions:

Question one: Are there any differences between CLIL and NON-CLIL learners with respect to L1 use in terms of interactional strategies and transfer lapses?

Question two: Are there any differences between CLIL and NON-CLIL learners as regards lexical richness, accuracy measures (word order and production of the definite and indefinite article) and syntactic complexity measures (production of simple and complex sentences and variety of tenses used)?

Question three: Does L1 use correlate with lexical richness?

Question four: Does L1 use correlate with both accuracy and syntactic complexity?

5. METHODOLOGY

5.1. Participants

The participants were nineteen Basque/Spanish bilingual learners of L3 English in two schools in the Basque Country where Basque is the language of instruction for all subjects except for Spanish and English language courses. The context in which the subjects are immersed has been defined as additive trilingualism (Cenoz and Valencia 1994), where Basque, the language of instruction, is a minority language of Spain. Spanish is the majority language, and English is taught as a foreign language. It is the case that some learners have Basque and Spanish as their L1s, others have Basque as L1 and Spanish as L2, while a third set of learners has Spanish as their L1 and Basque as their L2. In all cases, the additive context in which these learners live leads to balanced bilingualism.

As we can observe in Table 1, the participants were divided into two different groups: a CLIL group (n = 9) and a NON-CLIL group (n = 10). Learners in both groups started learning English at the age of eight and had been learning English for seven years at the time data were collected. Thus both groups share a common age of first exposure and the same number of years of study. However, learners from the CLIL group had received 118 hours of additional exposure to the English language as they were receiving four hours a week of Social Sciences taught in English in addition to the three hours a week of English as a Foreign Language (EFL) lessons which their NON-CLIL counterparts were also receiving.³ At the moment of testing, CLIL learners had

³ We are aware of the fact that there is a mismatch in hours of exposure between the groups as the CLIL group had received a higher amount of hours of exposure to English. This is a shortcoming that many studies comparing CLIL and NON-CLIL groups face. For further discussion, see Martínez Adrián and Gutiérrez Mangado (2015).

been exposed to a total of 910 hours of English instruction and NON-CLIL learners to 792 hours. Note that none of these participants had had additional exposure to English through extra-curricular classes, stays abroad, etc.

Table 1. The participants

| | Age at testing | Age of first exp. | Length of exp. in years | Total no. hours |
|---------------------|-------------------|----------------------|----------------------------|--------------------|
| CLIL Group (n = 9) | 14 | 8 | 7 | 910 |
| NON-CLIL I (n = 10) | 14 | 8 | 7 | 792 |

5.2. Instruments

The data reported in this paper were part of a project where a wide battery of tests was used to collect data from different schools. Among the tests were oral and written production tests as well as a general proficiency test, various questionnaires and grammaticality judgement tests. All students were informed about the nature of the tasks emphasizing that none of the results would have any effect on their marks at school. The data reported here include, firstly, the test on general proficiency—by means of a standardized Oxford Placement Test for listening and grammar (Allan 1992). This task was completed by all students at the same time in their respective classrooms. And secondly, the oral production task, where the students were asked to individually narrate the well-known story “Frog, where are you?” (Bernan and Slobin 1994) with visual support provided by a series of vignettes. The productions lasted an average of sixteen minutes fifty-nine seconds for the NON-CLIL group and thirteen minutes eleven seconds for the CLIL group. All oral production was orthographically transcribed and codified in CHILDES format (McWhinney 2000), a tool widely used for analyzing oral and written speech. They were assessed on L1 use by identifying cases where learners used Basque and/or Spanish in (i) interactional strategies and (ii) transfer lapses. The narrations were also analyzed for lexical richness—using type/token ratio (TTR) and D—⁴ accuracy (word order and production of the definite/indefinite article) and syntactic complexity (production of simple and complex sentences and variety of tenses used).

⁴ Even though several measures of lexical diversity (D) have been proposed, the best known measure is the type-token ratio (TTR), where the number of different words a learner writes in a text is divided by the total number of words in order to determine the degree of variation. However, one of the limitations is that it is sensitive to the length of the text analyzed. Other measures such as the Guiraud index (Guiraud 1960), D (Malvern et al. 2004), and the measure of textual lexical diversity (MTLD) (McCarthy and Jarvis, 2010), among others, have been developed to solve this limitation. When analyzing texts of one-hundred tokens or more, D and MTLD should be used (McCarthy and Jarvis 2007, 2010). At present, the trend in research is to use different measures to obtain more information. Thus, in the present study, we have chosen TTR as well as D, taking into account that the length of the type of texts analyzed ranges from 135 to 393 tokens.

6. RESULTS

6.1. Oxford Placement Test

Table 2 presents the results of the Oxford Placement Test. As can be observed, the CLIL and the NON-CLIL groups differed in terms of general proficiency. The CLIL group was in a lower intermediate level and the NON-CLIL group was categorized as a “basic-extremely limited user” (Allan 1992).

Table 2. Oxford Placement Test

| | Mean | SD |
|----------|-------|-------|
| CLIL | 99.33 | 15.81 |
| NON-CLIL | 94.00 | 13.94 |

6.2. The oral production task

6.2.1. L1 use in interactional strategies and transfer lapses

Table 3 presents the mean number of L1 uses in both groups:

Table 3. Total L1 use

| | Mean | SD | T-test | p-value ⁵ |
|----------|-------|-------|--------|----------------------|
| CLIL | 4.33 | 3.50 | -3.441 | 0.007* |
| NON-CLIL | 32.50 | 25.62 | | |

The results of the T-test revealed statistically significant differences in favour of the CLIL group who had a lower use of the L1 when interactional strategies and transfer lapses were taken together.

On the basis of these overall results, we decided to break down total L1 use into interactional strategies and transfer lapses. As for interactional strategies (Table 4), the CLIL group used the L1 less than the NON-CLIL group.

Table 4. Total L1 use in interaction

| | Mean | SD | T-test | p-value ⁶ |
|----------|-------|-------|--------|----------------------|
| CLIL | 3.67 | 3.32 | -3.333 | 0.008* |
| NON-CLIL | 23.20 | 18.20 | | |

⁵ Statistical significance is indicated at < .05 (*) level.

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When transfer lapses were examined (Table 5), we observed that, again, the CLIL group made lower use of the L1 although the difference did not reach statistical significance.

Table 5. Total L1 use in transfer lapses

| | Mean | SD | T-test | p-value ⁷ |
|----------|------|-------|--------|----------------------|
| CLIL | 0.67 | 0.71 | | |
| NON-CLIL | 9.30 | 12.73 | -2.141 | 0.061# |

It is also worth noting that standard deviation figures were considerably high in the NON-CLIL group (both in interaction and transfer lapses), which indicates that individual learners behave differently with respect to the use of the first languages in L3 oral production. This seems to confirm the importance of individual differences in the use of transfer (Odlin 1989; Cenoz 2001; Muñoz 2007; Martínez Adrián, Gallardo del Puerto and Gutiérrez Mangado 2013).

As participants lived in a context of additive bilingualism where two official languages coexist, we decided to carry out a detailed analysis of the source languages used both in interactional strategies and transfer lapses for the CLIL and the NON-CLIL groups. When learners asked for help, some of the utterances produced were exclusively in Spanish as in (3), others only in Basque as in (4), some of them displayed a mixture of Spanish and Basque as in (5), and there were even some utterances in which the first part of the utterance was produced in English and the second part in Spanish or Basque (as in 6 and 7 respectively):

(3) *¿Qué es esto?* (NON-CLIL subject 05)

what is this

“What is this?”

(4) *Aurkitu ba nola da?* (CLIL subject 18)

find then how is

“So, how do you say find?”

(5) *bote nola da?* (NON-CLIL subject 05)

jar (Spanish) / how is it? (Basque)

“how do you say pot?”

(6) *How do you say caerse* [“fall”]? (CLIL subject 01)

(7) *How do you say in English bilatu* [“look for”]? (CLIL subject 18)

⁷ Statistical tendency is indicated at < .09 (#) level.

The results of the analysis regarding the source languages in interactional strategies are displayed in Table 6:

Table 6. Source languages in interactional strategies

| Language(s) | Example # | CLIL | | NON-CLIL | |
|---------------------|-----------|------|------|----------|-------|
| | | Mean | SD | Mean | SD |
| Only Spanish | (3) | 1.44 | 1.67 | 9.30 | 14.24 |
| Only Basque | (4) | 0.44 | 0.73 | 12.30 | 13.71 |
| Basque and Spanish | | 0 | 0 | 0 | 0 |
| Spanish and Basque | (5) | 0 | 0 | 1.10 | 1.97 |
| English and Spanish | (6) | 1.56 | 2.19 | 0.50 | 1.58 |
| English and Basque | (7) | 0.22 | 0.67 | 0 | 0 |

As shown in Table 6, the qualitative analysis of the source languages used in interactional strategies revealed that learners in the CLIL group preferred to use Spanish (1.44) rather than Basque (0.44). Moreover, they did not mix both Spanish and Basque or Basque and Spanish, but rather made use of English plus Spanish (1.56) and to a lesser extent English and Basque (0.22). This contrasts with the use of source languages made by the NON-CLIL group, who used the Basque language (12.30) to a higher extent than Spanish (9.30) when the complete utterance was produced in one of those two languages. On some occasions (1.10) they used Basque in the first part of the utterance—*nola da* [“How do you say”]—and Spanish in the second part. The use of English in the first part of the utterance was uncommon and when it was used, it was only used with Spanish (0.50).

Results regarding the source languages used in transfer lapses are shown in Table 7:

Table 7. Source languages in transfer lapses

| | CLIL | | NON-CLIL | |
|---------|------|------|----------|-------|
| | Mean | SD | Mean | SD |
| Spanish | 0.44 | 0.73 | 3.10 | 2.61 |
| Basque | 0.22 | 0.44 | 6.20 | 11.32 |

As observed in Table 7, the CLIL group showed a preference for Spanish in transfer lapses (example 8), whereas the NON-CLIL group tended to opt for Basque (example 9).

(8) And *bueno* [“well”] is night and the boy go to sleep (CLIL subject 09)

(9) *Bada* [“then”] boy sees hole (NON-CLIL subject 06)

6.2.2. Lexical richness

The oral narration task was also analyzed in terms of lexical richness by means of TTR and D. As illustrated in Table 8, the CLIL group showed both a higher TTR and D than the NON-CLIL group, indicating that the CLIL group used a larger amount of lexical variation (statistically significant). Not only did the CLIL group have a richer vocabulary but they also obtained a higher score in the Oxford Placement Test (see Table 2).

Table 8. TTR and D

| | CLIL | | NON-CLIL | | T-test | p-value ⁸ |
|-----|-------|------|----------|------|--------|----------------------|
| | Mean | SD | Mean | SD | | |
| TTR | 0.36 | 0.05 | 0.25 | 0.04 | 4.892 | 0.000** |
| D | 23.04 | 8.4 | 11.59 | 4.72 | 3.722 | 0.002** |

6.2.3. Accuracy and syntactic complexity

The oral narration task was also analyzed in terms of accuracy (word order and production of the definite/indefinite article) as well as syntactic complexity (production of simple and complex sentences and variety of tenses used). When the production of wrong word order was considered (Table 9), no statistically significant differences were observed between the CLIL and the NON-CLIL group:

Table 9. Wrong word order

| | CLIL | | NON-CLIL | | T-test | p-value |
|--|------|------|----------|------|--------|---------|
| | Mean | SD | Mean | SD | | |
| | 0.22 | 0.44 | 1.80 | 2.61 | -1.878 | 0.091 |

However, the CLIL group significantly outperformed the NON-CLIL group when they were tested on the correct production of the definite and the indefinite article, as can be observed in Table 10:

Table 10. Correct production of the definite and the indefinite articles

| | CLIL | | NON-CLIL | | T-test | p-value ⁹ |
|------------|-------|-------|----------|-------|--------|----------------------|
| | Mean | SD | Mean | SD | | |
| Definite | 98.24 | 2.77 | 71.94 | 26.02 | 3.177 | 0.011* |
| Indefinite | 73.72 | 19.40 | 26.74 | 26.70 | 4.029 | 0.001** |

⁸ Statistical significance is indicated at < .01 (**) level.

⁹ Statistical significance is indicated at < .05 (*) and < .01 (**) levels.

As for syntactic complexity measures, we examined the production of simple and complex sentences as well as the variety of tenses used. As displayed in Table 11, the CLIL group produced a significantly lower amount of simple sentences than the NON-CLIL group but a higher rate of complex sentences. In the case of complex clauses (Table 12), statistically significant differences were observed for infinitival clauses and a statistical tendency was found for the production of relative clauses in favour of the CLIL group:

Table 11. Production of simple and complex sentences

| | CLIL | | NON-CLIL | | T-test | p-value ¹⁰ |
|-------------------|-------|------|----------|------|--------|-----------------------|
| | Mean | SD | Mean | SD | | |
| Simple sentences | 23.33 | 6.36 | 29.70 | 5.36 | -2.368 | 0.030* |
| Complex sentences | 4.22 | 3.15 | 1.00 | 1.05 | 2.922 | 0.016* |

Table 12. Type of complex clauses

| | CLIL | | NON-CLIL | | T-test | p-value ¹¹ |
|--------------|------|------|----------|------|--------|-----------------------|
| | Mean | SD | Mean | SD | | |
| Infinitivals | 1.22 | 0.83 | 0.50 | 0.52 | 2.283 | 0.036* |
| Gerundials | 1.11 | 1.67 | 0.10 | 0.31 | 1.766 | 0.113 |
| Time clauses | 0.56 | 0.73 | 0.40 | 0.70 | 0.475 | 0.641 |
| That-clauses | 0.89 | 1.17 | 0.50 | 0.97 | 0.793 | 0.439 |
| Relatives | 0.56 | 0.73 | 0 | 0 | 2.294 | 0.051# |

As for the variety of tenses used in both groups (Table 13), learners mainly used the present tense and to a lesser extent progressive forms and the past tense. When both groups were compared, no statistically significant differences were observed:

Table 13. Production of progressive forms, past tense and present tense

| | CLIL | | NON-CLIL | | T-test | p-value |
|---------------|-------|------|----------|------|--------|---------|
| | Mean | SD | Mean | SD | | |
| Progressive | 2.67 | 1.94 | 5.70 | 4.88 | -1.814 | 0.095 |
| Past tense | 2.67 | 3.21 | 0.70 | 0.82 | 1.790 | 0.107 |
| Present tense | 19.44 | 6.11 | 22.00 | 5.12 | -0.992 | 0.335 |

¹⁰Statistical significance is indicated at < .05 (*) level.

¹¹Statistical significance is indicated at < .05 (*) level and statistical tendency is indicated at < .09 (#) level.

6.2.4. L1 use, lexical richness, accuracy and syntactic complexity measures

As observed in Table 14, the correlation analyses conducted did not reveal significant correlations between the use of the first languages and lexical richness in the case of those learners in the CLIL group. No significant correlations were found between L1 use and the accuracy or syntactic complexity measures either.

Table 14. Correlation analyses

| CLIL | Total L1 use | |
|----------------------|--------------|---------|
| | Pearson | p-value |
| Wrong word order | 0.189 | 0.626 |
| Correct indefinite | -0.217 | 0.575 |
| Correct definite | 0.336 | 0.376 |
| Complex clauses | -0.506 | 0.165 |
| Use of progressive | -0.277 | 0.471 |
| Use of past tense | -0.569 | 0.110 |
| Use of present tense | -0.019 | 0.960 |
| Type/token ratio | -0.267 | 0.488 |
| D | -0.291 | 0.447 |

In contrast, a significant negative correlation was found between L1 use and lexical richness in the NON-CLIL group. However, no significant correlations were established between L1 use, accuracy and syntactic complexity measures in this group, as displayed in Table 15:

Table 15. Correlation analyses

| NON-CLIL | Total L1 use | |
|----------------------|--------------|----------------------------|
| | Pearson | significance ¹² |
| Wrong word order | -0.048 | 0.895 |
| Correct indefinite | 0.052 | 0.886 |
| Correct definite | -0.277 | 0.438 |
| Complex clauses | -0.292 | 0.413 |
| Use of progressive | -0.032 | 0.931 |
| Use of past tense | 0.103 | 0.778 |
| Use of present tense | 0.613 | 0.059 |
| Type/token ratio | -0.701 | 0.024* |
| D | -0.579 | 0.079# |

¹²Statistical significance is indicated at < .05 (*) level and statistical tendency is indicated at < .09 (#) level.

7. DISCUSSION

In this section we will answer the four research questions posed for the present study. As for the first research question, the results confirm a lower use of the L1 in the CLIL group both in terms of interactional strategies and transfer lapses. This is consistent with previous research in CLIL contexts (Serra 2007; Lázaro Ibarrola and García Mayo 2012) as well as investigations that have compared CLIL and NON-CLIL contexts (Agustín Llach 2009; Celaya and Ruiz de Zarobe 2010). This result could be explained by the focus on fluency and communication of meaning which are usually promoted in CLIL classrooms (Martínez Adrián and Gutiérrez Mangado 2015). In fact, learners in the CLIL group used the TL to interact with the researcher. The different instructional approaches the learners receive lead to differences in the way they perceive and understand the foreign language (Agustín Llach 2009, 123). Thus, learners in the CLIL group may perceive English as a language they can use to interact with the teacher, unlike NON-CLIL learners for whom English may simply be perceived as the object of study. In addition, the lower rates of L1 use found in the CLIL group may also be triggered by the higher general level attained by CLIL learners when compared to NON-CLIL learners. In the same vein, research has found that cross-linguistic influence is more frequent among less proficient learners (Ringbom 1987; Möhle 1989; Poulisse 1990; Navés, Miralpeix and Celaya 2005; Agustín Llach 2009, among others). Our data also seem to indicate that interactional strategies and transfer lapses are affected by the contextual language as in the CLIL group there is a higher preference for Spanish, the majority language in the small town where the subjects live, and in the NON-CLIL group for Basque, the language used for everyday communication in their area. Apart from that, the fact that the use of Spanish is more common in the NON-CLIL group when learners produced the first part of the utterance in Basque or English suggests that linguistic awareness (Kellerman 1983, 1984; Odlin 1989) is also operative at the level of interactional strategies, as these learners are able to perceive a greater distance between Basque and English. So both factors, the sociolinguistic context and linguistic awareness seem to affect cross-linguistic influence in L3 acquisition, supporting the observation that cross-linguistic influence is not determined by a single factor (Cenoz 2001; Murphy 2005; García Mayo 2012b). In this respect, researchers have also drawn attention to the importance of individual differences in the use of transfer (Odlin 1989; Cenoz 2001; Muñoz 2007; Martínez Adrián, Gallardo del Puerto and Gutiérrez Mangado 2013). The results we have obtained indicate that learners within the NON-CLIL group show a greater variation in the use of the L1/s when compared to the CLIL group.

Regarding the second research question, CLIL learners obtained a higher score in lexical richness (TTR and D) than their NON-CLIL counterparts. Additionally, the CLIL group also performed significantly better when they were administered a test of general proficiency (OPT). This supports previous research that has shown the better performance of CLIL learners when tested on general proficiency (Jiménez Catalán, Ruiz de Zarobe and Cenoz 2006; Lasagabaster 2008; Navés and Victori 2010; Ruiz de

Zarobe 2008, 2010b; Martínez Adrián and Gutiérrez Mangado 2015). With respect to accuracy measures, differences were found for the correct production of the definite and the indefinite article, whereas no differences emerged as regards the production of wrong word order, which supports previous research on the syntax-before-morphology position. Abstract syntax as reflected in word order seems to be in place prior to the acquisition of surface morphology evidenced by the errors observed in the production of the definite and the indefinite article (White 2003). In terms of syntactic complexity, the CLIL group significantly produced a lower amount of simple sentences than the NON-CLIL group but a higher rate of complex clauses, in line with the better fluency observed in immersion students (Harley et al. 1990). However, no differences were observed when they were tested on the variety of tenses used.

The lack of differences between CLIL and NON-CLIL learners with respect to word order and variety of tenses used provides further information about the aspects of language that are not enhanced by CLIL (Ruiz de Zarobe 2010a). Previous research has shown that CLIL learners do not improve in the use of certain morphosyntactic aspects such as inflectional morphology as much as they do in measures of general competence (Martínez Adrián and Gutiérrez Mangado 2015). Word order and variety of tenses used belong to those areas of language that do not benefit from CLIL instruction. Note that different measures of accuracy and syntactic complexity may provide further information on aspects different from those tested in this paper which can be more positively affected by CLIL. A call for more focus-on-form in CLIL classrooms has been made in order to improve those areas of language (García Mayo 2009, 2012a; Ruiz de Zarobe and Lasagabaster 2010; Basterrechea Lozano and García Mayo 2013; Martínez Adrián, Gallardo del Puerto and Gutiérrez Mangado 2013). More explicit instruction (see Harley 1989, 1998; Lyster 1994, 2004; Wright 1996, among others) as well as more overt and explicit corrective feedback (see Ortega 2009; Spada and Tomita 2010; Ellis 2012; Lyster, Saito and Sato 2013) are needed in meaning-oriented approaches. In addition, in view of the lack of connection between the EFL class and the CLIL class that is sometimes reported in some CLIL studies carried out in the same context as this one (see Martínez Adrián and Gutiérrez Mangado 2015) a closer collaborative link between CLIL and EFL classes is needed (Lyster 2013). Content-based and form-focused instructional options need to be counterbalanced so as to provide L2 learners with a range of opportunities to process and negotiate language across the curriculum (Lyster 2007).

With respect to the third research question, the correlation analyses conducted did not reveal significant correlations between the use of the L1 and lexical richness in the case of the CLIL group. This finding could be explained by the marginal use of the L1 in this group, which suggests that this group has already surpassed the stage where there is greater use of the L1. Note also that the range values of the category “Total L1 use” were lower in the case of the CLIL group (CLIL: 12 vs. NON-CLIL: 80). In contrast, as in previous research that has considered proficiency as a predictor for transfer (Ringbom 1987; Möhle 1989; Poulisse 1990; Navés, Miralpeix and Celaya

2005; Agustín Llach 2009, among others), a negative correlation was found between L1 use and lexical richness in the NON-CLIL group, that is, the greater use of the L1, the lower the level of lexical diversity. This seems to suggest that as a consequence of CLIL promoting the use of the TL as a language for communication, the use of the L1 decreases, leading to higher levels of lexical richness.

As regards the fourth research question, no significant correlations were established between L1 use, accuracy and syntactic complexity measures in either group. This suggests that a decrease in L1 use did not lead automatically to better performance in specific aspects of language or to the use of more complex language, either in the CLIL or in the NON-CLIL group.

8. CONCLUSION

This investigation has emphasized the complexity of the study of cross-linguistic influence in third language acquisition. Apart from the factors that normally determine this phenomenon such as psychotypology, age and proficiency, among others, type of language teaching, in this case CLIL, may also have an effect.

Despite the small number of participants and the different amount of exposure to the L3 between the two groups, the latter also being a confounding factor in much CLIL research, our findings seem to suggest that the CLIL group makes lower use of the L1, which could be explained by the communicative nature of the CLIL classroom. In fact, the CLIL group displays a greater use of the target language in interactional strategies. In line with previous research, we have also observed the better performance of the CLIL group in terms of lexical richness and general proficiency. Specific aspects of language are nevertheless not so favourably affected by CLIL, which could be addressed by means of more explicit corrective feedback and more explicit instruction. Finally, the negative correlation found between L1 use and lexical richness in the NON-CLIL group suggests that L1 use seems to affect lexical richness. Nevertheless, we have not found a correlation between L1 use, accuracy and syntactic complexity measures, which seems to indicate that L1 use is more closely related to vocabulary. In sum, CLIL learners display a higher rate of lexical diversity in their oral narration tasks, less use of the L1 and a greater use of the target language for interaction, all of which can be explained by the focus on meaning and more intense and natural exposure existing in CLIL classrooms. Further research using different types of data would be desirable in order to confirm these results and make them generalizable to a wider context.

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