In the last ten years, Spanish universities have gradually started to incorporate English as a means of instruction. As a result, many lecturers — who regularly use their mother tongue for their teaching activity — have been compelled to adapt their syllabus contents into English, resulting in lectures that show evidence of cross-linguistic influence (Odlin, 1989). This is especially noticeable in the recurrent presence of calques, which emerge as a consequence of both the teachers’ insufficient proficiency in the foreign language and a lack of expertise in lecturing through a non-native medium of spoken communication. The goal of this paper is precisely to evaluate the extent to which this interference is made visible. To this aim, a corpus of three Engineering lectures delivered in English has been used as a means of exemplification, with results that prove the presence of syntactic, lexical and morphological calques in all cases. The ultimate end of this research is not only to raise teachers’ awareness of their own dependency on L1 as their main language resource, but also to eventually provide them with tools and strategies which might enhance their performance, hence improving teacher-student communication.
Key words: tertiary education, CLIL, cross-linguistic influence, source language interference, calque

En los últimos diez años, las universidades españolas han empezado a incorporar el inglés como lengua para la docencia. Como resultado, muchos profesores —acostumbrados a enseñar en su lengua materna— se han visto obligados a adaptar los contenidos de sus programas al inglés, con la consiguiente influencia cros-lingüística en el desarrollo de su actividad docente (Odlin, 1989). Esto se aprecia especialmente en la presencia recurrente de calcos, consecuencia tanto de la falta de conocimiento lingüístico de los profesores a la hora de transmitir conocimientos en una lengua extranjera como de su escasa experiencia en este sentido. El objetivo de este trabajo es precisamente analizar hasta qué punto esta interferencia se hace realmente patente en el aula. Con esta intención, y a modo de ejemplo, se ha utilizado un corpus formado por tres clases de Ingeniería impartidas en inglés. Los resultados del análisis revelan que todas ellas presentan calcos sintácticos, léxicos y morfológicos. El objetivo último de este trabajo no es sólo concienciar a los profesores de su dependencia de la lengua materna como primer recurso lingüístico, sino también dotarlos con herramientas y estrategias que les permitan mejorar su actividad, lo que sin duda repercutirá en una comunicación profesor-estudiante más óptima.

Palabras clave: educación superior, CLIL, influencia cros-lingüística, interferencia de la L1, calco

1. Introduction

In the last three decades, much has been written about the pervasive influence of English on other languages (Görlach, 2005). Spanish has not been an exception to this trend, and numerous studies on the topic have been carried out. These range from dictionaries (Rodríguez & Lillo, 1997; Prado, 2003, etc.) to manuals, theses, articles and books (Lorenzo, 1996). Obviously, the global dominance of English in the spheres of business and science accounts for much of this: it is a fact that many professionals have
been constrained to use English as a means for oral communication as well as a channel for publication, the academic world included. One outstanding example in this respect is content language integrated learning (CLIL): though traditionally absent from tertiary level educations (Coleman, 2006), CLIL has been gradually gaining ground in Spanish university contexts. Given this growing demand, some professors and lecturers have been compelled to use English as a means of instruction, that is, they need to teach in English the contents usually given in Spanish in their conventional classroom environment. One of the most striking consequences of this new context is precisely the constant interference of their L1 in the resulting lectures, which is revealed mainly through the presence of lexical, morphological and syntactic calques.

In general terms, cross-linguistic influence has been extensively dealt with by linguists; however, this is not the case in CLIL contexts (especially in oral production), probably due to the relative youth of the implementation of CLIL in our country. One of the aims of this analysis is precisely to add to the bulk of study which, regarding this particular sphere, has already seen the light (Jiménez, 2002; Bellés & Fortanet, 2005; Fortanet, 2008; Dafouz, 2007, 2009; Lasagabaster & Ruiz de Zarobe, 2010).

2. Cross-linguistic influence

The present study stems from one basic assumption: CLIL lecturers, in their teaching activity, choose L2 words and structures which show a striking resemblance to others existing in their L1. For Odlin (1993, p. 27), source language interference, or transfer (Kellerman, 1995), is “the influence resulting from similarities and differences between the target language and any other language that has been previously (and perhaps imperfectly) acquired”. According to Odlin, although transfer is not simply interference (due to the negative connotations of the latter; hence the term ‘negative transfer’), the word ‘interference’ is still used in the literature (1993, p. 26). Equally, ‘cross-linguistic influence’ seems to be the terminology commonly
employed in current literature to refer to this linguistic phenomenon (Cenoz, Hufeisen & Jessner, 2001, p. 1). In our particular case, this influence makes itself present as a result of two different yet complementary circumstances.

The first of these factors is the insufficient knowledge of the foreign language on the part of the lecturers (who are also, or have been, learners of that language: as self-reported, they have an intermediate or high intermediate level of English, and their L1 acts as a direct cause of erroneous performance). As pointed out by Kellerman (1995, p. 129), L2 speakers use ‘compensatory strategies’ on which the effect of the L1 is frequently noted, that is, speakers resort to their L1 to solve linguistic problems, in an attempt to ‘compensate’ their lack of knowledge. Of course opportunities will be higher if the languages concerned are typologically similar, though not necessarily.

Cross-linguistic influence is also the result of a common practice carried out by lecturers who have Spanish as their mother tongue: the ‘self-translation’ of their own L1 materials (sometimes with the visual support of Powerpoint slides and handouts). During the process of rendering these materials into a different language, Chesterman’s ‘principle of perceived similarity’ may apply: “When looking for solutions, translators tend first to consider those resources in the TL that are perceived as being similar to the SL” (Chesterman, 1988, p. 69). The potential effect of translation on the resulting lectures will be extensively dealt with elsewhere (Braga & Maíz, 2011).

3. Method of Analysis: Aim and Corpus

The aim of this study is two-fold: on the one hand, to look into the types of calques and their recurrent frequency in the lecturers’ performance as a result of L1 interference. For this purpose, a corpus of English lectures has been selected as object of analysis, a typology has been designed and calques have been quantified. Also, and for analytical purposes, we have resorted to
a linguistic study carried out by Lynne Young in 1994, in which the macro-structure of university lectures and the most prominent features that contribute to this structure are described. According to Young, university lectures are configured into phases, or “strands of discourse that recur discontinuously through a particular language event and, taken together, structure the event” (1994, p. 165). The six phases which make up every university lecture are Discourse Structuring, Conclusion, Evaluation, Interaction, Theory/Content and Examples (ibid., pp. 166-168). Each of them plays a different role within the lecture. With Discourse Structuring, the addressors “indicate the direction that they will take in the lecture” (p. 166), whereas the Conclusion summarizes the points made throughout the discourse. Evaluation serves to assess the information. The contact with the audience is maintained through Interaction, while Theory or Content reflect the lecturer’s purpose, that is, “transmit theoretical information” (p. 167), which is in turn illustrated thanks to the Examples. Young’s division will be applied to the corpus selected in order to identify which phases are more prone to present higher numbers of calques (both in absolute terms and per number of words).

Any descriptive study must be based upon a closed corpus that allows coherent conclusions to be reached. As specified above, the data of this analysis comes from a corpus of three Engineering lectures (17,479 words approximately) given during a course on the topic of Formula 1 cars held at Universidad Politécnica de Madrid. Each lecture lasted approximately one hour and was attended by 26 students of nationalities other than Spanish who used English as their lingua franca. Of the three lecturers who voluntarily agreed to participate in the course, two had no previous experience in lecturing in a foreign language and all of them lacked translation training of any sort. As self reported, and as stated above, their level of English ranged from intermediate to high intermediate.7
4. Analysis and Results: Language Interference

According to Odlin, calques are “errors that reflect very closely a native language structure” (1993, p. 37). In this respect, it is important to point out that only calques which sound odd or erroneous in the L2 have been taken into account in this study. Errors of a different nature (due to overcorrection, for instance, as the examples below show) are not dealt with:

*It takes into account that the chemistry it is not perfect*

*Ballasts are an extra weight that you can place everywhere in your car, when do you want*

In order to carry out a systematic categorization of all the calques present in our corpus, the three-part grouping proposed by López & Minett (1999) and, partially, by Rodríguez (1999) has been adopted. It must be noticed, though, that this division was originally intended to classify the levels of English contact with Spanish, and not *vice versa*. Following this typology, Figure 1 (below) summaries the corpus findings with regards to calques and their distribution:

![Figure 1. Distribution of calques in the corpus](image)

As Figure 1 shows, morphological calques are most common (46.5% of the total number). Syntactic and lexical calques follow in frequency, representing 37.2% and 16.2% of the total number.
According to Lopez and Minett (1999), morphological calques cover categories such as articles \(<\text{MCa}\)>, adjectives \(<\text{MCad}\)>, adverbs \(<\text{MCadv}\)>, nouns \(<\text{MCn}\) (including the variation of plural), verbal tenses \(<\text{MCt}\)>, pronouns \(<\text{MCp}\) and prepositions \(<\text{MCpp}\). The following is a selection of some examples that attempt to illustrate morphological calques found in the corpus:

**Articles (<MCa>):**

The last year, the Renault have...

We have a loss of a 2% only

**Adjectives (<MCad>):**

In other situation we have...

A best material

**Adverbs (<MCadv>):**

The car weights really 600 kilos? Not

You can do the change easy

**Nouns (including the variation of plural) (<MCn>):**

... around 600 horse powers
It will be have a paper supporting it

Verbal tenses (<MCt>):

People who works in F1 usually refer to this...

Since 83, I think, I am here as permanent professor...

Pronouns (<MCp>):

...but with a special characteristic, what is...

It is better to use [inaudible] that carbon fibre composites...

Prepositions (<MCpp>):

...but is amorphous and they are just dropping by small holes in the vitreous stage

The effect of the vaporization depends of...

As shown in the graphic below (Figure 2), most of the morphological calques involve the (wrong) use of verbal tenses (35.5%), closely followed by that of articles (22.2%). Examples of the wrong use of tenses do mostly involve lack of coherence (i.e. “Two important things is”, “… there are another one”, “People who works”), use of the bare infinitive after a preposition (i.e. “By increase the mass of air”, “The same possibilities of win a race”) or use of Simple Present where Future tenses are expected (i.e. “We stop here and we continue in five, ten minutes”, “Take the break
you need, and I am waiting here”). Quite remarkably, articles tend to be either omitted (i.e. “I am here as Ø permanent professor”, “…as Ø binder element”, “Ø differential is another piece of transmission”) or overused, especially with definite article ‘the’ (i.e. “If we use fuel with a high value of the molecular weight”, “The last year, the Renault have…”, “Here we will be in the 2000”).

Though less numerous, adjective, pronoun and adverb calques are equally present in the corpus (17.7%). The wrong use of the adjectives ‘other’, ‘others’ and ‘another’ is particularly interesting in cases like ‘In other situation we have…’, ‘Ok, there are others elements that we can look at’, or ‘There are another steels with high hardness’, etc. Some problems concerning comparatives have been also detected in examples like ‘A best material’, ‘What is the better material for this use?’, or ‘It is not the more resistant steel’. Actually, one of the three lecturers recorded has caught our attention due to his apparent problems with adverbs in negative clauses (i.e. “This area shouldn’t be covered by nothing”, “So there is not problem, but the real limit is...”, “If there is a small crash, you cannot never repair it”, or “And if there is no enough oxygen, the thing than burns easily is...”). Curiously enough, calques concerning prepositions appear in a final position (13.3%) followed only by nouns (11.1%), which means that, contrary to expectations, their correct use is not really problematic for the lecturers, who do not seem to resort to their L1 for language compensatory purposes in this case.

Figure 2. Types of morphological calques
If taking into account Young’s division of lectures, a double classification must be made. Firstly, focus will be paid to the number of morphological calques present in absolute terms and its distribution according to the different phases. As shown in Figure 3 (absolute numbers), this counting gathers an overall number of sixty calques, distributed as follows: Content, 31 cases (51.6%); Interaction, 11 cases (18.3%); Discourse Structuring, 6 cases (10%); Exemplification, 6 cases (10%); Evaluation, 5 cases (8.3%); Conclusion, 1 case (1.6%). Identical calques which recurred throughout the lectures are counted just as one. Morphological calques are mostly present in the Content phase followed, by far, by their presence in Interaction, Evaluation, Discourse Structuring and Exemplification. However, different results are revealed when it comes to the analysis of this same calque category according to phases but classified per number of words (Figure 4). In this case what is measured is not the global number of calques in the lectures but the presence of calques per phase in percentual terms (total number of calques in one given phase per number of words that phase is made up of). Hence, percentages show now that morphological calques are more numerous in the phases of Exemplification, Discourse Structuring, Evaluation and Interaction. Quite remarkably, Content appears in a final position. Given the mostly content-based orientation of the lectures, it seems as if Content had received closer linguistic attention on the part of the lecturers, with lower levels of attention paid to the effects of interference in the rest of the phases involved.
As already seen in Figure 1, syntactic or structural calques are second on the list in terms of frequency (37.2% of the total amount of calques quantified). This sort of calques usually respects the semantic content, but introduce a new structure into the language. Lopez and Minett (1999) include paragraphing, sentence link and word order as potential cases to be considered under this heading. Given the oral nature of our corpus, paragraphing has been excluded, with the focus being on sentence link (<SCsl>) and word order (<SCwo>). Word order refers to the adequate position of the different elements in the sentence, but also to the transformations brought about by the construction of passives, inversions or...
interrogative sentences, among others. Sentence link also includes the dropping of subjects in subordinate clauses. See below a list of examples extracted from the analyzed corpus:

Sentence linking (<SCsl>):

*For example, Ø is impossible or almost impossible to do a bicycle*

*It doesn’t mean that Ø is good, and what’s even worse…*

Word order (<SCwo>):

*One thing important to understand is…*

*You never are perfect*

*How many bars there are in each cylinder in a F1 car?*

*Why is forbidden?*

The graphic below (Figure 5) reveals how word order, with a rate of 45.8%, and question formation (16.6%) are the categories which concentrate the most common types of syntactic calques. Examples of word order are primarily conveyed by the wrong position of adverbials within the English clause (mode/place/time): ‘I stayed *for a year in Stanford*’, ‘*A patch just to reinforce locally this area*’, or by the Spanish-like post-modifying use of adjectives: ‘*Under that skin there are a lot of materials very very complex*’, ‘*And another problem… important… is*’. Furthermore, the inversion following ‘Wh-’ introducing non-interrogative clauses is almost never carried out by the lecturers in the corpus: ‘*I don’t know where is the control stick*’, ‘*I don’t know what was the velocity in the last year*’. This is no doubt related with the lecturers’ problems with inversion in question formation, with varied examples (i.e. “*Do you know what is engine cam case?*”, “*What it is? As you know…*”, or “*Then the situation is good or bad*”).
These calques are mostly present in the Content and Interaction phases followed, at quite a distance, by Evaluation, Discourse Structuring and Exemplification. The global number of syntactic calques found in the three lectures amounts to 48, which are distributed as follows: Content, 15 cases (31.25%); Interaction, 15 cases (31.25%); Evaluation, 7 cases (28%); Discourse Structuring, 5 cases (20%), Exemplification, 5 cases (20%); Conclusion, 1 case (4%), (see Figure 6).

The graphic below (Figure 7) proves how this distribution dramatically changes as soon as the analysis concentrates on the presence of syntactic calques in the different phases in terms of number of words. Now, Evaluation gathers most of the syntactic calques, followed only by Exemplification and Discourse Structuring. Content, again, is the phase
which is less open to improvisation, being this the reason why it ranks a final position in this category:

![Bar chart showing the number of words per phase]

Figure 7. Syntactic calques according to phases per number of words

Regarding lexis, it must be pointed out that the concept of lexical calque has been the object of study by several authors in the last decades. One of the first attempts to define it was that of Haugen (1953/1969), who makes a distinction between lexical calques which are extensions (<LCe>, also called semantic loans, whose meaning is an amplification of the original one), and those which are creations (<LCc>, loan translations), that is, new acquisitions which can appear in the form of derivations, compounds or even phrases. Hence, and following Heugen’s terminology, here is a sample of the sort of lexical calques that are present in the corpus:

Extensions (<LCe>):

_Then the engine is very hot_ [‘so’ expected]

_We look what... which are the plastic that were..._ [‘see’ expected]
Creations (<LCc>):

*It just transmit by *pression* the load to the others* [*‘pressure’ expected]*

*Engines which contains more than 50 per cent of *vidrium* [*‘glass’ expected]*

In global terms, the number of lexical calques found is 21 (the least frequent in our corpus), with a rate of 16.2 % (see Figure 1) and distributed as follows:

Figure 8. Distribution of lexical calques in the corpus

As shown in Figure 8, extensions (61.9 %) are more common than creations (38 %). As for extensions, the use of the temporal linker ‘then’ instead of ‘so’ is the most recurrent calque in the three lecturers concerned, as Spanish *luego* can semantically refer to both the time reference and to the particle introducing a clause of result. Curiously enough, ‘so’ is also employed as a substitution for ‘therefore’ or ‘hence’ in other cases:

*So, this selection is what today we have to study*

Other examples include the use of ‘do’ for ‘make’, or *vive versa* (in Spanish *hacer* for both verbs), as in *‘to do a bicycle’ or ‘to make a job’*. Also
worth mentioning are the use of ‘till’ to mark physical distances, as occurs with Spanish hasta ("To move up till here"), and the employment of ‘this is’ (instead of ‘that is’) for explanatory purposes, which clearly shows the interference of the Spanish phrase esto es.


In absolute terms, both extensions and creations tend to appear in phases such as Exemplification, Discourse Structuring, Interaction, and Content, with the latter showing the highest rates of calques:

![Figure 9. Lexical calques according to phases (absolute numbers)](image)

Nonetheless, and if considering the recurrence of lexical calques per number of words, percentages show that Exemplification surpasses the rest of the phases, while no examples are present neither in Conclusion nor in Evaluation.

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5. Conclusions

In the last ten years, CLIL has gradually made itself present at Spanish universities, with more and more English-taught graduate and (especially) postgraduate programmes being implemented. As a result, the number of lectures delivered in English by non-native speakers of the language has been on the increase, too. This situation has led to the presence of lectures that show relevant levels of cross-linguistic influence, which makes its appearance in the shape of syntactic, lexical and morphological calques. This is evident in the three-lecture corpus chosen for the analysis presented here. In absolute numbers, morphological calques clearly prevail in the corpus, followed by syntactic calques and, finally, lexical calques.

Regarding morphological calques, the most recurrent cases have to do with the wrong use of tenses, followed by that of articles. Unexpectedly, calques involving prepositions present very low rates. Given the content-based nature of the lectures, it is only natural that the Content phase draws together most of these calques. However, when the parameters are changed to phase distribution per number of words, the majority of them occur in
Evaluation, Exemplification and Discourse Structuring, with Content containing the lowest rates, closely followed by Conclusion (though the number of words in this phase is so low as to make it hardly representative). Data seems to indicate that, statistically, lecturers show lower levels of interference when explaining the contents of their subjects rather than in other situations typical of classroom environments.

As far as syntactic calques are concerned, word order and the formation of questions are responsible for the majority of cases. Less frequent is subject dropping, both in main and subordinate clauses. Again, statistically Content gathers the lowest number of structural calques.

As for lexical calques, extensions overcome creations in the three lectures. Concerning their distribution per phases and per number of words, the big majority of them concentrate in Exemplification, followed by Discourse Structure and Interaction which, at the same time, shares numbers with Exemplification and Discourse Structure. Content in this case comes in the fourth position. Again, being the most strictly planned phase of the lecture, this contains statistically few calques, but not as strikingly low rates as in the other two categories. Finally, the poor number of words in the Conclusion phase does not make it representative enough for conclusive remarks to be made.

According to Dafouz & Núñez (2009, p. 109), one of the three major needs teachers in CLIL contexts at tertiary levels have is to prevent pragmatic inadequacies and simplified grammars. This paper precisely intends to be a starting point to test the presence of calques in content lectures. Despite the fact the size of the corpus is not consistent enough to draw definite conclusions, future studies on wider corpora and varied disciplines may well support the need to assist CLIL lecturers with tools and resources which might facilitate their production with lower doses of L1 interference. No doubt, this would enhance lecturer-student communication in CLIL contexts at Spanish universities in the future.

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Notes

1 The current study is embedded within the framework of the CLUE Research Project (Complutense University of Madrid), which has been running for four years now. The ultimate aims of this project are: the development of a contrastive corpus of academic language (English/Spanish) in Spanish university contexts; the characterization of the pragmatic and organizational features of teacher spoken discourse across disciplines; and the development of a functional-metalinguistic repertoire to assist non-native university teachers in delivery of content through a FL.

2 In the particular case of the Comunidad de Madrid, this trend was initiated by technical degrees (Universidad Politécnica de Madrid and Universidad Carlos III are pioneering in this respect), but has now spread to other specialties and universities (Economics and Psychology at Universidad Complutense de Madrid; Business Administration and Tourism at Universidad Rey Juan Carlos, among others). The University of Oviedo, for instance, is planning to offer 100 subjects taught in English in the near future, which will be distributed between the 50 degrees this institution offers. This amounts to nearly 5% of all its courses.

3 Compensatory strategies have been the object of considerable study by several authors over the years. See Kellerman (1995) for information about this aspect.

4 This is especially true in the case of scientific English, above all in lexis. Kellerman also put forward the principle of ‘transfer to nowhere’, which states that “there can be transfer which is not licensed by similarity to the L2, and where the way the L2 works may be largely go unheeded” (1995, p. 137).

5 The adaptation of teaching materials is precisely one of the three main changes considered essential to methodological adjustments in a CLIL context, as pointed out by Dafouz & Núñez (2009, p. 103).
Of the six phases a lecture is composed of (see Young, 1995), there are three in which a translation process L1-L2 is particularly visible. These phases, which are Structuring, Content and Exemplification, can thus be labelled ‘Self-translation phases’, as opposed to the other three, or ‘Non-translation phases’ (Evaluation, Interaction and Conclusion).

For further information about this particular corpus see Dafouz, Nuñez & Sancho (2007a, pp. 651-652). See also Braga-Riera & Maíz (forthcoming) for more detail about the lecturers’ training in translation practice.

Definitions of calques diverge depending on the different authors. According to the Dictionary of Translation Studies by M. Shuttleworth and M. Cowie, a calque is “a term used to denote the process whereby the individual elements of an SL item [...] are translated literally to produce a TL equivalent” (2007, pp. 17-18). Peter Newmark’s view of calques as “the literal translation of common collocations, names of organizations, the components of compounds [...] and perhaps phrases” (1988, p. 84), for instance, must be extended so that it can allow for syntactic structures more complex than a phrase. Other definitions are wider in scope, as that provided by Vinay and Darbelnet: “A special kind of borrowing whereby a language borrows and expression form of another, but then translates literally each of the elements” (1995, p. 32).

The other two being “expand the range of stylistic choices available in the foreign language” and “maximize content teachers’ access to the generic tools for more ‘explicit’ signaling of metadiscursive devices” (ibid., p.109).

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