

ON CONTENT AND LANGUAGE INTEGRATED LEARNING IN HIGHER EDUCATION: THE CASE OF UNIVERSITY LECTURES

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ABSTRACT. *This paper reports on the analysis of the spoken production of academic lecturers in a Spanish university context where teaching is conducted through a foreign language (English). Adopting a Systemic Functional Approach (Halliday 1994; 2004) as the theoretical framework, this study explores the discourse that non-native speakers use in their engineering lectures as well as the structure that they follow in the delivery of the subject content. The preliminary results show that university lectures are complex genres that do not only transmit factual information (i.e. Halliday's ideational function) but encode multifaceted interpersonal relations which play a vital part in the construction of knowledge and in the conceptualisation of lecturers' and students' roles. A persistent use of the personal pronoun we in conjunction with modal verbs of possibility, specifically can, help to establish common ground between participants while meeting the typical problem-solving structure of scientific discourse. Following previous research (Llinares, Dafouz and Whittaker 2007) this study also views Systemic Functional Grammar as a powerful tool in the analysis of university lectures in particular and CLIL classrooms in general.*

KEY WORDS: *Academic Lectures, Modality, Phases, Pronoun System, Systemic Functional Grammar, University Education.*

1. INTRODUCTION AND RESEARCH AIMS

For decades now, English has been used as the language of international professional life in virtually all the spheres; however, only recently has it become the most widespread instructional language in higher education (Wilkinson 2004; Seidlhofer 2004). The rapid implementation of content and language integrated learning (CLIL) classrooms across Europe responds to universities' pressing need to attract international students, promote teacher-student exchanges and ultimately adapt higher education institutions to the new demands of the job market (Graddol 2006). In the specific case of Spain, universities are

gradually incorporating English as the vehicular language mainly in postgraduate programmes (Master and Doctoral courses) as well as in some bilingual degrees in an attempt to face the challenges of today's rapidly changing globalized world. So far, initiatives to implement a CLIL approach at university level are rather dispersed and experimental with practically no empirical research being conducted to assess its efficacy.

It is in the new CLIL university context that the in-progress research¹ described here operates, pursuing various objectives which have been articulated at both macro- and micro-levels of analysis. At the macro-level, a needs analysis was carried out using a questionnaire in order to a) examine the attitudes that both content teachers and students in the *Universidad Complutense de Madrid* and the *Universidad Politécnica de Madrid* display towards the potential implementation of a CLIL approach, and, b) identify the major linguistic and methodological adjustments that these two populations believe they would need to make in order to succeed in this new context.

At the micro-level of analysis, the project has focused on the actual teaching of content subjects through English, by observation of content classes and concentrating on some of the most salient linguistic features of university instructors' discourse. Ultimately, this study aims to assist non-native lecturers (specifically Spanish) in their delivery of content classes through a foreign language (English), while, concurrently, facilitating the comprehension and processing of lectures to non-native students who wish to enrol in programmes where English is the language of instruction.

Given that the general findings regarding the macro-level of analysis can be found in Dafouz *et al.* (2007), here I will only summarise here the most revealing results.

Regarding teachers' responses (n=70) to methodological adjustments in a CLIL context, three main changes were considered essential: material adaptation, slow down of classroom rhythm and slight reduction of content. Interestingly, teachers did not feel that there should be prominent modifications in the evaluation style, a finding that undoubtedly needs further investigation. Concerning students (n=85), the responses reported substantial improvement in the areas of subject-specific vocabulary, pronunciation and listening, whilst grammatical development ranked the lowest. Finally, as regards attitudes to a more extensive implementation of CLIL in a university context, both teachers and students show a positive stance but differ in their level of willingness. Thus, while the former group demands more administrative recognition as well as financial and methodological support as indispensable conditions, the latter consider subject content complexity and foreign language competence (teachers' and students') as key factors for successful CLIL. By and large, this survey has served as a gateway into the university classrooms where more qualitative, ethnographic and micro-oriented analysis can be conducted, as the following section describes.

2. THE MICRO-LEVEL: LINGUISTIC FEATURES OF UNIVERSITY LECTURES

The micro-level of analysis of this research has focused on the type of language lecturers use when teaching content through a foreign language. Of the different teaching

styles that university contexts offer, lecturing is still the predominant teaching mode, and both students and instructors report that over 3/4 of class time is usually taken by teacher talk (see Saroyan and Snell 1997; Morell 2004 *inter alia*). Several studies have analysed the language of lectures, focusing mostly on the comprehension process (Chaudron and Richards 1986; DeCarrico and Nattinger 1988; Benson 1989; Flowerdew 1994). More recently, Crawford Camiciotoli (2004; 2005) compared the different resources activated by an English native speaker in a lecture addressed to an international audience and discovered that, by and large, the speaker used a slower speech rate, was more redundant and incorporated a higher number of interpersonal features (i.e. elicitation, inclusive pronouns, etc) in his discourse. In line with this study, this work analyses the features that predominate in international lectures but, unlike Crawford Camiciotoli's work, it will focus on the language of non-native speakers of English.

3. MODEL OF ANALYSIS

For the analysis of the data, this study follows closely Young's (1994) model which, in turn, is based on Systemic Functional Grammar (Halliday 2004). Systemic Functional Grammar (hereafter SFG) has proved to be very useful in the analysis of language since it is oriented to the description of language as a *resource for meaning* rather than a system of rules (see Llinares and Whittaker this volume). Moreover, this model has been used extensively in classroom contexts and educational research since it "explicitly indicates the connection between situational factors, or contextual constructs, and language choices. (...) [and] allows a researcher not only to identify the macro-structure of a language variety, but also, to greater or lesser degrees of detail, to identify the micro-features that make up this structure" (1994: 161). The micro-features to be analysed are based on Halliday's (2004) view of the use of language to convey three main macro-functions, namely, the ideational function, which represents reality; the interpersonal function, which is used to enact social relationships through the text, and the textual function, which helps to connect the ideas in a text. In Halliday's model, different areas of the grammar of English are used to convey these three functions².

For the study of the ideational function (clause as representation), Halliday concentrates on the analysis of processes. A process is the verbal resource for sorting out our experience of all kinds of events into a small number of types. The system discriminates six different subtypes of process, namely: material, mental and relational (which are the three main types of process in the English transitivity system), and another three, that are behavioural, verbal and existential processes (Halliday 1994:107). Briefly, material processes are defined as processes of doing (e.g. *run, paint, construct, read...*), mental processes are processes of experiencing or sensing (e.g. *see, hear, know, feel, believe...*), and relational processes are processes of being or becoming, in which a participant is characterised or identified, or situated circumstantially (e.g. *be, seem, become, stand, get...*)³.

For the realisation of the interpersonal function (clause as exchange), SFG mainly focuses on mood and modality. While mood examines indicative, interrogative and imperative clauses (Martin, Mathiessen and Painter 1997:11), modality covers such notions as probability, usuality, obligation and readiness, notions which are realised by modal verbs (e.g. *must, should, can, may, might, could...*) as well as modality adjuncts (*probably, usually, absolutely, readily, certainly...*).

Finally, for the realisation of the textual function (clause as message) attention is paid to the different resources concerned “with the organization of information within individual clauses and, through this, with the organization of the larger text” (Martin, Mathiessen and Painter 1997: 21). Linguistically, this function is realised by connectors (*and, but, therefore...*) and other cohesive features such as collocation, reference, ellipsis, etc.

Concerning the internal organization of lectures, previous works have identified different models. For instance, the classical study by Goffman (1981) distinguished three modes of lectures: memorization, aloud reading and fresh talk. Dudley-Evans and Johns (1981), in turn, also identify three lecturing styles named: reading style, conversational style and rhetorical style, styles that gradually move from more formal and controlled discourse to more informal. A recent study by Sander, Stevenson, King and Coates (2000: 313) on students’ expectations of university teaching simply distinguishes between formal and interactive lectures. In formal lectures the teacher delivers a set presentation while students listen and take notes or are given a set of notes to follow, whereas in interactive lectures the teacher delivers the presentation but, at the same time, invites students to ask and respond to questions. Additionally, Sander *et al.* (2000) point out that in interactive lectures students may be required to undertake exercises to check their own progress. Although there is little evidence about the type of lecture that currently predominates in university contexts, (and admittedly, lectures and lecturers are rather idiosyncratic) there seems to be tacit agreement that a more interactive lecturing style is becoming the norm across universities (see Lynch 1994; Morell 2004; Fortanet and Bellés 2005; Dafouz, Núñez and Sancho in press)

In order to overcome this idiosyncrasy regarding lecturing styles and lecture organisation, this study decided to follow as well a Systemic Functional approach for the analysis of the internal structure of university lectures. Based on Young’s work (1994: 164) the concept of *phase* was introduced, since, in her view, the notion of phase offers a more realistic account of the structure of the lecture than the traditional beginning, middle and end pattern. Phases, then, are defined as “strands of discourse that recur discontinuously throughout a particular language event and, taken together, structure that event. These strands recur and are interspersed with other resulting in an interweaving of threads as the discourse progresses” (1994: 165).

In the seven lectures Young analysed, she distinguished six strands or phases, three which she called metadiscoursal, that is “strands which comment on the discourse itself” (1994: 166) and three which she referred to as “the other three” and for research purposes will be identified here as non-metadiscoursal. The metadiscoursal phases are the 1) *Discourse Structuring phase*, in which the speaker announces the different parts

or directions of the lecture, 2) the *Conclusion phase*, in which the main points covered are summarised, and 3) the *Evaluation phase*, where “the lecturer reinforces each other of the strands by evaluating information which is about to be, or has already been transmitted” (1994: 167). According to Young, these metadiscourse phases occur across disciplines and levels, indicating that the relationship between addressors and addressees in this situation follows a particularly consistent macro-structure. The non-metadiscourse phases are 4) the *Interaction phase*, which refers to the interpersonal strategies that the lecturer implements to establish contact with the students and to ensure comprehensibility; 5) the *Theory or Content phase*, where the theories, models and definitions of the subject are presented; and 6) the *Examples phase*, where lecturers illustrate theoretical concepts through concrete examples so that students are able to follow the ideas successfully.

Once the general theoretical framework has been presented, the next sections will cover the teaching/learning context, the method of analysis and, finally, the major findings of this study.

4. THE DATA AND METHOD OF ANALYSIS

The data of this in-progress study currently contain the transcriptions of three university lectures given in English by non-native content teachers from the Universidad Politécnica de Madrid, as part of an engineering course entitled *What goes on behind Formula One Engines*⁴. These three lectures are a subset of a larger set of data that covers twelve hours and included a fourth lecturer⁵. The overall objective of the course, according to the organisers, was to combine theory and practice in an attractive setting (the city of Madrid) and supplement the academic formation with cultural activities. The topics of these three lectures included the technical constraints and regulations in Formula One cars, theories of composite materials and general principles of aerodynamics. The three lecturers recorded had volunteered to give the course and regarded the experience as a means to enhance the international profile of their faculty. As for the learners, a total of twenty-six students from fourteen different nationalities took part in the programme. By and large, students agreed that learning content through a foreign language generally entailed the need to have more visual aids (e.g. handouts, power point presentations, supplementary readings, etc), a clearer structure of the content covered in the lecture and more exemplification. Less uniformly, students reported to appreciate a slower pace on the teacher’s discourse, as well as more repetition and recapitulation of main ideas (for a more detailed account see Dafouz, Núñez and Sancho forthcoming).

In order to mitigate the problem of subjectivity in the analysis, a sample of one lecture was analysed by three different researchers, and where necessary changes were made until agreement between raters was achieved. For example, it was decided that when there was constant repetition of one item as a result of hesitation (as in *I...I...I think...*) this item would count as one single token. For analytical purposes, the lectures

have been coded EngL1 (Engineering Lecture 1), Eng L2, Eng L3 and will be referred to by these codes throughout the rest of the article.

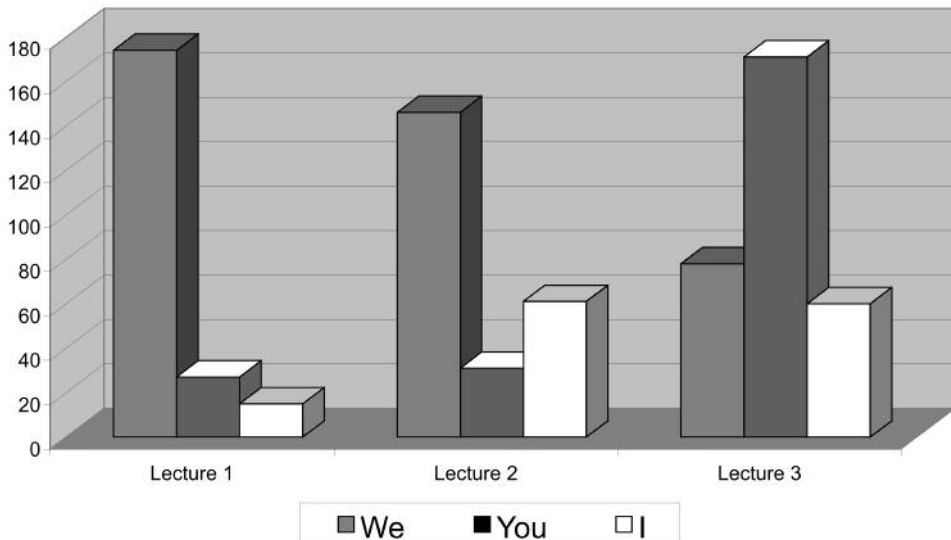
The project is at present collecting other lectures from the disciplines of Physics, Economics and Literature. It is our intention to investigate whether lecturing styles correlate with different disciplines, as some authors advocate (Dudley-Evans 1994; Saroyan and Snell 1997), or whether there may be a macro-model that is able to encompass both technical and non-technical fields (Young 1994).

5. RESULTS AND DISCUSSION

Given the broad scope that the SFG adopts, a limited account of the most significant findings will be presented here. Focusing on the different phases presented above, this study will highlight those aspects, which quantitatively speaking have more prominence⁶.

In the first stage of the analysis, what was noticed was the high proportion of personal pronouns used by the three lecturers, in detriment of other impersonal forms. Specifically, the pronoun *we* was the most common personal pronoun used, with 398 occurrences; pronoun *you* was used in 229 occasions, and pronoun *I* was found in 136 instances, as figure 1 displays.

FIGURE 1. *Pronoun use by lecture*



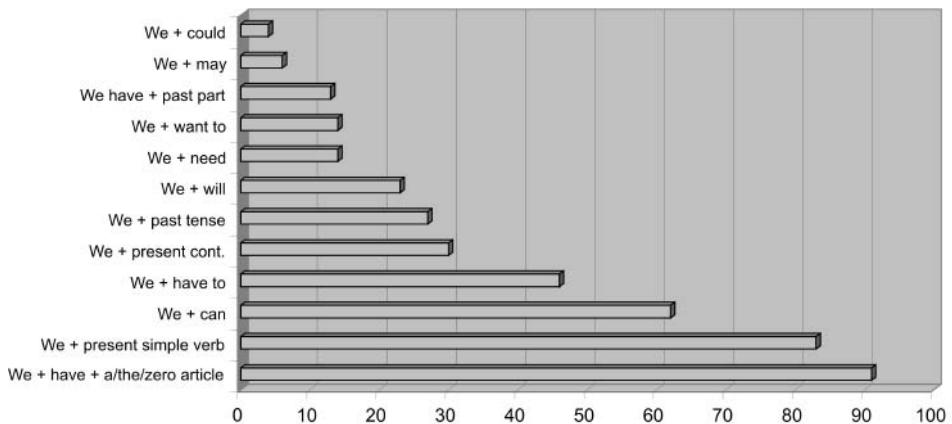
By sections all pronouns appear discontinuously in the six phases identified by Young with different discursive functions. In the case of *we*, the lecturers in this study use it as a common resource in the *Discourse Structuring* phase to anticipate the different stages in their talk, to guide the listeners through them and to set the objectives. More precisely, both lecturers 1 and 2 employ *we* as an opening device as if they were about to initiate a journey with their students into the various sections of their talk:

EngL1: Do you think Formula One engines are complex? (...) Today *we will* talk about Formula One engines, (...) *we will* offer some definitions about the geometry and volumetric efficiency (...) and *we will* see some examples.

EngL2: What *we will* do during this day is concentrate on composite materials. Then *we* look into for about twenty minutes, *we will* look at the basic knowledge of composite materials (. . .) *we will* see an example of composite material and *we will* follow the whole process.

Interestingly, in addition to the presence of *we* all three lectures coincide in the use of modality in the *Discourse Structuring* phase. The second step in this analysis was to identify the presence of clusters associated with the pervasive *we*. Figure 2 shows the 12 clusters found in the data:

FIGURE 2. *Distribution by clusters of we in lectures*



Specifically, the form *will* to announce future directions in the talk seems to predominate since the speaker is helping the audience to set up a lecture framework by “making predictions about where the lecture is going, seeing where one component fits with another and within the whole lecture, and assessing the relative significance of each

aspect of the lecture” (Thompson 1994: 176). It is worth noting, that other studies which analysed L1 lecturers (Thompson 1994; Fortanet 2004) found the use of *I* pronoun dominating in this phase since the rhetorical function of this section is to focus on the lecturer’s role as actor. These findings do not match entirely our data where pronoun *we* is preferred by lecturers 1 and 2 as a means to include both speaker and listener through the lecture. Obviously, this preliminary analysis needs to be subjected to further investigation in a larger-scale study before more definite conclusions could be safely drawn regarding lecturing styles in CLIL contexts.

Examples of pronoun *we* are also found in the *Conclusion* phase, when the lecturer summarises the main topic or idea to be extracted from the talk and, sometimes, announces the content of a prospective lecture:

EngL2: *I will finish* with this. If *we* put in three directions *we* get something very different in stiffness to the standard. This is what *we* all have to remember.

EngL1: Tomorrow *we are going to* talk about the history of Formula One.

In this *Conclusion phase* it seems that modals do not usually play an important role since there is little evaluation. It is rather a factual strand which focuses on key aspects of the lecture and favours repetition and recapitulation.

In the *Evaluation* phase, lecturers also employ the pronoun *we* as a way to accompany students in the discovery of the key terms and ideas. The instructor presents himself as part of the class when he underlines what he considers to be the main concepts, and makes explicit judgements regarding the validity, appropriateness or relevance of the theories presented. By and large, attributive relations are the ones dominating this phase, rather than modals or other attitudinal devices, with lecturers revisiting the main points touched upon in the *Conclusion phase* but evaluating them openly so that students will know how to weigh each of them.

EngL2: Now, this is what *we need to remember*. *This is fundamental* in composite materials.

EngL3: *We know* that this *was a very interesting finding*, a very interesting one for the students that participated in it.

Alternatively, lecturers also use pronoun *you* to evaluate lecture content along with imperative forms as a direct address to the audience emphasising the importance of the message, as in:

EngL1: *Try, try, you* have to remember how *important this aspect is*.

EngL3: Satellite development. *This is very interesting*. I think *you-you-you* will interest in this project.

Regarding the three non-metadiscoursal phases (i.e. *Interpersonal*, *Exemplification* and *Theory* phase) and the distribution of personal pronouns within those phases, the

analysis tentatively suggests that the presence of *we* may respond to lecturers' tendency (conscious or not) to establish a bond with the learner while concurrently, using *we* as a coherence strategy to organise internally the speech event (see Fortanet 2004 for a detailed account of this function of *we*).

In the *Exemplification* phase, pronoun *we* is used together with some modals such as *can/could*, and semi-modals such as *have to*, in an attempt to help the listener follow the typical scientific reasoning style:

EngL1: Then if **we** want to increase the speed of the sound, *we have to* increase the temperature (...) It's problematic. *We have to* heat the air and perhaps we have other problems. *We could have* a loss of volumetric efficiency if we increase the temperature of the air, then the volumetric efficiency could go down.

In the case of lecturer 2, it is interesting to notice his continuous shift from pronoun *we* to *you* when he moves from the general explanatory level to the exemplification level, where he draws students' attention by providing practical and clear examples:

EngL2: If *we* try to recover the strength of the structure this is very difficult because joints are very difficult in composite structure. *You* have the normal experience with a car bumper. If *you* had a small crash it was easy to repair.

EngL2: Currently *we have* carbon fibre but in the future *we will keep* having the same? (...) *Imagine* that you have a bicycle of carbon fibre, every time that *you do* that *you may* produce small cracks that will damage the structure.

EngL3: This is only an aspect of the question *we have to* handle (...) And I don't know if *you* will follow it all.

Curiously, in these lectures, as in Young's (1994) findings, *Exemplification* strands are more numerous than theoretical strands, suggesting how important the role of illustrating and offering examples is in academic discourse, and even more specifically in scientific disciplines such as engineering where there is an unavoidable connection between experimentation and theory (Halliday 1996; Saroyan and Snell 1997).

As regards the use of personal pronoun *I*, the analysis reveals that lecturers 2 (60 instances) and 3 (61 instances) employ it more frequently than lecturer 1 (15 instances), but in all three cases, pronoun *I* plays the same discursive functions. In other words, this form is largely used by the lecturers to signal a shift from their academic or social persona (i.e. engineering university instructors) to their individual self. Self-reference uses cover functions that range from the indication of personal experience or academic background, to individual interpretations or evaluations of content, as well as including explicit apologies for the lack of linguistic skills or computer skills, as the following examples reflect:

EngL1: *We want to increase this (...) We want to increase this... Why this? Perhaps, I don't know where is the control stick. I don't have any key here. Sorry, I don't know what happens.*

EngL2: *I'm professor of Material Science (...) I have been teaching composites for over 20 years (...) I arrived here as permanent professor (...) I really thank the organization for this opportunity and, although I am no expert in Formula One engines I will do my best.*

EngL3: *I'm full professor of Aerodynamics here in this Faculty and I'm responsible for...My English is very limited (...) I hope you can understand what I want to tell you.*

From the examples above, what could be highlighted as specific to non-native lecturers in comparison to native ones is a self-deprecation strategy. In other words, the three non-native lecturers all apologised for their limited linguistic skills in the foreign language at the beginning of the lecture probably as a way to win the audience and establish a solidarity bond.

Comparing some of these findings on pronoun use with others of university discourse, Hyland (2001) observed that in Research Articles the growing tendency for scholars was to replace pronoun *we* for *I*, a tendency that Fortanet and Bellés (2005) suggest may also be extending to academic speech and that Thompson (1994) also found in her data. These results, however, do not match the results of our study, although more data is definitely needed to draw firm conclusions.

In the *Theoretical Phase* the lecturers present the concepts and definitions to be covered. Thus, this phase fulfils Halliday's ideational macro-function. The analysis of the ideational function, that is, the function responsible for the expression of content, is crucial in CLIL contexts, especially since most reservations regarding the implementation of this approach are related to a possible loss or reduction of subject content (Creese 2005). In tertiary education such concern is even more present as students have to meet the academic expectations of their universities and be prepared for a highly competitive professional market.

Within the *Theoretical* phase, the most frequent cluster was the one formed by *we + lexical verb* (91 instances) as figure 2 displays, where the verbs mostly refer to material processes. In the case of these material processes, that is, verbal forms that either entail actions (i.e. doing something) or events (i.e. something is happening) a tentative analysis revealed that the material processes that predominate in the data refer to actions (verbs such as *increase, decrease, change, put, fill, produce...*) rather than to events; a finding that is connected with the pervasive presence of personal pronouns, since it is normally animate participants the ones that carry out material processes. In addition to these, some examples of *we + lexical verb* involving mental processes were also found, most of them dealing with the subtype verbs of cognition (*think, believe*) and perception (*see*), rather

than of affection (*like*). The excerpt below offers an example of the various material and mental processes enacted by the speaker in his explanation of Formula One engines:

EngL1: If the temperature *increases* then *we have to lower* the density, then *we have to reduce* this term and *change* the formula (...) And *we have to avoid* this temperature that *we are going to introduce* into the engine (...) *We have calculated* the thermal efficiency (...) and *we have to calculate* now the volumetric efficiency (...) *we have to think* how to *reduce* (...) and *introduce* the value that *we know*.

The second most frequent cluster found in the *Theory* phase was *we+ have+ a/the/no article* (83 instances). This cluster acts as a presentational device whereby lecturers introduce new topics or subtopics, without having to increase their linguistic repertoire with other alternative topicalisers, such as *regarding, concerning, as for, as regards, turning to*, etc.

EngL1: *We have this*: the air of the density and normally...normally...we use the density of the air pressure.

EngL2: *What we have here*, as we will see later, is two special fibres. *Here we have* again the criteria for....

EngL3: *We have three possibilities* for the study of the aerodynamics...

Another interesting device which frequently appeared in the *Theory* phase as well as in the *Exemplification* phase of the lecture was the cluster *we + have to* (46 tokens). After analysing the data, it seems that this structure is mainly used by lecturers to present the steps to follow in the scientific line of reasoning, appearing at first glance to free itself from the prototypical meaning of external “obligation”. This use may also be interpreted as an attempt to redefine the authoritative role of the teacher in his/her role of content presenter, so that he/she is to be perceived as a guide showing a solution path with certainty and authority. On closer analysis, however, it was noticed that this cluster is not evenly distributed among the data and that lecturer 1 hoards most of its uses (42 instances), in comparison to the 2 instances in lecturer 2 and lecturer 3. This result turns *have to* into a feature of personal lecturing style rather than a general lecturing strategy of non-native speakers.

EngL1: If we have more fuel than air *we have to* introduce the function (...) then *we have to* put here the thermal efficiency. *We have to* multiply by the mechanical efficiency and diagram efficiency.

The fourth most frequent cluster in this analysis was *we + can* (62 tokens); a combination shared by the three lecturers, although with differences in the number of tokens. In terms of lecture distribution, the findings suggest that this structure is mostly present in the *Exemplification* and the *Theory* phase when the lecturer is illustrating the different steps that can be followed to solve a problem. By using *can*, he is suggesting a

number of possible options and, at the same time, in combination with *we*, he is encouraging the students to follow the same line of reasoning.

EngL1: And *we can* now for petrol or for gasoline ...*we can* introduce here the value 300. If we are the engineers that we are thinking about this...*we can* choose to increase (...) and then if *we can* increase the efficiency, imagine that we obtain a best material.

EngL2: *We can increase* the thickness of the skin very progressively but there are some rules about that.

In interpersonal terms, another interpretation for the high use of *can* (as in the case of *we*) could be connected with the construction of a solidarity context for learners where the unequal status between participants is somewhat balanced. Dalton-Puffer and Nikula (2006: 258) in their analysis of classroom directives in secondary education claim that “the more equal interlocutors are, the more the power difference will be evened out so that requests from the more powerful [teachers] to the less powerful [student] participant will be progressively more indirect”. In consonance with these authors, it could also be argued that, in the particular case of many CLIL teachers, their non-native status and their specialisation in non-linguistic disciplines may drive them to adopt a more egalitarian tone than in normal teaching situations.

Apart from *can*, *have to*, and to a lesser degree *will*, there are very few instances of any other modal verbs in these lecturers. While lecturer 1, agglutinates most of his modality under the forms *can* and *have to*; lecturers 2 and 3 make a limited use of other forms, namely *need* (used 7 times both by lecturer 2 and 3), *may* and *could* (used 6 times but only by lecturer 2). This overrepresentation of *can* reveals that these lecturers do not exploit the full range of linguistic devices available for the expression of modality in English. Furthermore, some examples even reveal that certain uses of *can* and *have to* presented here are used inadequately; a finding that calls for more research in the area of modality. This result matches the one by Crawford Camiciottoli (2004) where, comparing native and non-native lecturers’ use of modality, she discovered that *can* and *will* are the most frequent verbs employed by the non-native group with all other modals underrepresented. Likewise, studies on EFL learners’ use of modals (see Neff *et al.* 2004) coincide that epistemic meanings pose particular problems for non-native speakers. In the specific case of CLIL contexts, Llinares, Dafouz and Whittaker (2007) also found that students in secondary education make a very limited use of modality and, again, that *can* is almost their only choice for the expression of ability, probability and permission. Paradoxically, modality is one of the key dimensions in academic language, both spoken and written, and interpreting and using adequately the semantic and pragmatic meaning of modal verbs is essential for both students and lecturers.

To conclude this analysis of the macro-functions and micro-features (borrowing Young’s 1994 terminology) found in academic lectures, it is essential to underline that the study of the textual macro-function, that is, the one responsible for constructing cohesive

and coherent texts has not been initiated yet. It is our intention to focus on these textual resources (e.g. connectors, reference, reiteration, collocations, topical elements...) in further research in order to identify any preferences in the discourse of university lectures.

6. CONCLUDING REMARKS

This study has attempted to identify, using a Systemic Functional approach, some of the most significant linguistic devices that appear in university lectures by non-native speakers. In doing so, it has shown that academic lectures are a complex genre that not only present factual information but also evaluate the subject matter, interpret reality and reflect the speaker's tenor with the audience. Secondly, it has suggested that Systemic Functional Grammar can be a powerful theoretical model for the analysis of lectures, since it enables researchers to obtain descriptions which cover both the macro-structure (i.e. organisation) and the micro-features of language varieties, as well as the situations which engender them. On a more detailed level, this preliminary study has revealed that lecturers' high use of pronoun *we* grants an accessible tone to the discourse and may favour student intervention. By extensively using this pronoun, avoiding modal forms with meanings of obligation and involving students in reasoning and problem-solving processes, it is believed that lecturers seek to promote an egalitarian atmosphere. Possibly, such solidarity may be due to the fact that teachers themselves are not language experts and so display a logical over-mindfulness of content verbalization. In this sense, the new teaching situation that CLIL is creating may act as a catalyst to balance the highly asymmetrical roles performed by instructors and students in some conservative university communities (Musumeci 1996; Nikula 2005; Dafouz and Sancho 2006).

Admittedly, the small-scale of this study calls for caution in the interpretation of the findings. Variables such as different personalities, teaching goals, and styles, the instructors' competence in the foreign language, as well as the role of the students, or the discipline analysed, need to be factored in and controlled for. Thus, further research in this line should contemplate these aspects.

As a final remark, and regarding CLIL considerations, it is essential that in addition to methodological concerns and questions of syllabus design and language planning, CLIL stakeholders include in their agenda the conducting of empirical research across the different education levels. Research, in addition to the different institutional decisions mentioned above, will undoubtedly help to make the CLIL approach more robust and reliable.

NOTES

1. The present study is part of a large scale project on Content and Language Integrated Learning in Higher Education, supported by a Complutense University Research Grant in the year 2006 (PR1/06-14457-B) and currently co-financed by the UCM and Comunidad de Madrid as a Research Group (CCG06-UCM/ENE-

- 1061). The remaining members of the research group are (in alphabetical order): Diana Foran (UCM), Eusebio de Lorenzo (UCM), Ana Llinares (UAM), Begoña Núñez (UCM) and Carmen Sancho (UPF).
2. See Halliday (2004) for an updated introduction to the model.
 3. Since this is an exploratory study, a comprehensive account of behavioural, verbal and existential processes is not included here.
 4. Further information regarding the characteristics of the course, underlying principles and contents developed can be found in the official website address: www.BEST.eu.org (accessed 12 July 2006).
 5. The data videorecorded from the other lectures and the fourth lecturer are currently in the process of transcription and analysis.
 6. The work presented here is based on a quantitative analysis of the two major linguistic devices found in the corpus (namely, personal pronouns and modal and semi-modal verbs) in terms of number of occurrences and frequency count per 1000 words.

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