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Compensatory Discourse Strategies in the Bilingual University Classroom

Short title for the running head: **Discourse Strategies in the Classroom**

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Contrastive Discourse Analysis operates in a boundary area where linguistics and psychology overlap. Systematic analysis of classroom academic discourse can enhance approaches to public discourse, including those dealing with the communicative content rather than the form of texts. Such is the context of the bilingual discourse in the university classroom. This study takes a sequenced and multi-methodological approach to analyse first, the errors in spoken performance in the bilingual classroom; second, the impact of these errors on overall intelligibility. The sample is taken from academic discourse and is comprised of 34 hours of spoken interaction with eight different Spanish speakers teaching through English. The findings show that compensatory discourse strategies, including listener comprehension, impacted communication much more than the errors detracted from it.

Key words: classroom academic discourse, intelligibility, multicompetence, contrastive discourse analysis, compensation strategies, bilingualism, English as a lingua franca

1. Introduction

This research is part of a sequenced process for a professional development project to promote multicompetence for Computer Science professors teaching through English as a foreign language. Cook and Wei (2016) refer to this multicompetence as two languages coinciding in one brain. In fact, it is when users can hold two patterns simultaneously in their minds, when multicompetence is achieved. Our study looks at professor performance in the context of classroom discourse, a discourse type that, broadly speaking, "refers to all of those forms of talk that one may find within a classroom or other educational setting" (Jocuns 2013:1).[1]

Classroom academic discourse is a place to discover solutions that all speakers and listeners use in complex contexts in public communication. Classroom discourse focuses on interaction, while academic discourse includes information transfer. Typically, instructors use discourse strategies by reformulating as they deliver their contents. Hyland (2007:266) comments: "A great deal of research has now established that (…) texts embody interactions (…), but few studies have examined the ways that small acts of reformulation and exemplification help contribute to this." Most often academic discourse refers to expansion or reduction as two key strategies. However, Lorenzo (2008) elaborates further

[1] It is worth noting that the scope of the field of classroom discourse is very wide. It does not only include classroom interactions, but also analysis of nonverbal conduct as well as issues of learning and identity, among others (see Sert 2015:14-15).

to include what he deems “rediscursification” whereby instructors are actively adjusting to compensate for effective message transfer in bilingual settings. These adjustments help to create a more coherent prose and convey the user’s “audience sensitivity and relationship to the message” (Hyland 2007:266). It is in this way that this research connects to public discourse.

The context of the academic public discourse is the ideal frame to explore how language and meaning work together in second language (L2) contexts. In fact, classroom discourse can describe how language interfaces with cognition adapting in the course of language usage. In educational settings, listeners may attend to the linguistic expression produced, to the conceptual content represented and to the context at hand. Classroom academic discourse is therefore clearly informed by both discourse analysis and cognitive psychology; indeed, cognitive structures deal simultaneously with formal patterns and communicative aspects of language in formal instructional settings (Langacker 1987).

More specifically, in the context of second language acquisition, cognitive discourse involves the study of cognitive representation together with the mechanisms of language processing. This is highly relevant to all instruction and absolutely crucial in the bilingual settings, where dual coding is commonplace (Lambrecht 1996; Skehan 1998; Doherty and Long 2003; Kroll and Sunderman 2003; Talmy 2003; Ellis and Larsen Freeman 2006; Ellis and Robinson 2008; Lorenzo 2008). Bilingual classroom contexts offer insightful perspectives in terms of dual coding (Skehan 1998) in discourse: users may clarify “on the fly” and can learn to compensate for a less than perfect public discourse.

Discourse is the study of languages in the context in which they are used and organised into meaningful units. Tanner (2012) commented that discourse analysts study larger chunks of language as they flow together. But what happens to this ‘flow’ when the rules of one

language get in the way of the message in the second language? Undoubtedly, diverse approaches to public discourse analysis can be enhanced through systematic analysis, such as the context of the bilingual classroom where content communication and discursive strategies outweigh precise form focus. Any communicative event encompasses a wide range of features; and at the university level, this academic context deals with the intelligible transmission of highly complex contents.

In their conceptualisation of English Medium Instruction (EMI) in the university, Dafouz and Smit (in press) suggest there is a need for a more holistic framework to allow for interdisciplinary, multi-sited analyses. In this regard, we would like to examine how discursive strategies are ongoing for both professors and students in bilingual instruction. In this manner, English as a lingua franca (ELF) is seen as '"fluid, flexible, contingent, hybrid and deeply intercultural" (Dewey 2007; Jenkins, Cogo, and Dewey 2011:284), and having far-reaching implications for education and pedagogy and its reliance on "nativised" varieties in many higher education institutions throughout the world.

So, we will examine the language the professors used, but also how the users react in context actively using encoding and decoding procedures to make sense of the intended message. Like all public discourse, classroom academic discourse is the interplay between what the speaker intends with what the speaker actually says, as well as, with what the listener ultimately understands. The communicative events occurring in the bilingual classroom are dynamic and interactive and, in many ways, particularistic to the context at hand. In spite of the limited focus of our study, we hope to shed some light on functional bilingualism in action and its relationship to public discourse.

This study takes a sequenced approach to analyse first, the errors in spoken performance in the context of the bilingual classroom. This first step takes a more structural frame to

classify mis-performances of highly proficient L2 users with regard to their first language to manifest how language is represented. The next step assesses the impact of these errors on intelligibility in a qualitative post coding analysis to show how language is processed in meaningful contexts. At this interim step, what the study challenges is to what degree 'imperfect' performance impacts intelligibility in a real communicative context. We seek not to elicit errors, but rather to understand the reasons why they occur.

For this study, the research questions are the following:

a. What are the frequent errors in spoken performance and how do these relate to transfer?

b. What is the impact of specific errors on the intelligibility of the message intended?

In fact, what is significant here is not the errors themselves, but rather what users can do to compensate for their mis-performances once these errors are found to be systematic. For the practical implications, these formal features are interrelated to functional features to explore how communicative compensation can work in the classroom academic discourse. So, we begin with how language is processed and represented and move towards practical implications in the classroom of how language is used intelligibly and purposefully to communicate.

The paper will be organised as follows: (i) first, we will present the theoretical framework and clarify terminology; (ii) next, we will present the action research method, sample, and procedure for the data collected; (iii) then, we will classify and analyse the linguistic errors in relation to cross linguistic transfer and intelligibility; (iv) in the discussion section, we will discuss the practical implications of the research; (v) and finally, we will conclude and point to future research.

2. Theoretical framework

In the implicit language teaching that is ongoing across Europe with non-natives teaching to non-natives in university classrooms, language proficiency seems to be at the forefront of the discussion, but 'perfect performance' is just a small aspect of the communicative effect of the messages produced in academic discourse. At one time "non-native like performance" might have meant the use of a pidgin or "broken" English. Now, however, English as a lingua franca has come to be seen as a term referring to a standard form of English that non-native speakers use when communicating with each other (Clement 2001:12).

All language is acquired in meaningful contexts, and in cognitive grammar, this meaning is equated with conceptualisation. In first language, the construction of the concept of meaning must be contextually relevant both semantically and syntactically (Kintsch and Mangalath 2011:346). This construction is implicit as first language (L1) develops. Even though the conceptual underpinnings are present in L2 as well, they are competing with L1 patterns. Consequently, the processes involved in adult second language discourse differ greatly from first language discourse. Tarone, Bigelow, and Hansen (2013) have found that adult language-learners differ from children in terms of prior real-world knowledge. Such differences allow adults to project emerging L2 systems onto fully developed conceptual and linguistic representations, so many aspects of morpho-syntactic structure that are not present in their L1 are ignored. At the same time, structural patterns of the first language are present in second language performance. So, the processes and representations of L1 persist in L2 performance.

Functional bilinguals show varying degrees of difficulties when representing and processing their second languages largely due to the pre-existence of their first language (L1). This is commonly referred to as transfer. In many ways, cross-linguistic transfer embodies users' linguistic knowledge of their first language to represent a second language. Loebell and Bock (2003) have found that structural priming persists cross linguistically and leads to transfer at all linguistic levels. Structural priming refers to the tendency to repeat, or more easily process, an utterance that is similar in structure to one presented previously.

Contrastive error analysis allows us to postulate which errors are more systematic, why these difficulties occur and, more importantly, what users can do to compensate their academic public discourse. A cognitive approach to language points to what is actually happening in our minds when we are using language, studying how our minds understand, produce and, ultimately, learn a language. Skehan (1998) has offered an insightful perspective in terms of dual coding where both L1 and L2 are learnt using a processing model that is rule based as well as exemplary. Conceptually, language is a representation of deeper cognitive processes. These "information structures", as Lambrecht (1996) has called them, are intertwined with rules, conventions, and concepts. Learning of sequentially distributed patterns is implicit in first language, but this is less clear in second language usage. According to Brooks and Kempe (2018), more research is required to predict the adult learner's ability to extract patterns from sequential input and their awareness of the extracted patterns.

In consequence, we are discussing not only how the logical representation of L1 interferes with the language performance in L2, but also, which representations impact the message transfer. Although no clear conclusions have ever proven that all L2 errors are due to interference, no one who has ever taught would deny that students sharing a mother tongue

also share many of the most common errors that occur when using a new language. What has changed, however, is how these errors are perceived.

Qualitatively, what we challenge is how errors influence the message in public discourse in a real-world context, not their existence. Once users become "proficient enough" what really matters is their ability to transmit a message. In bilingual public discourse, linguistic performance must be assessed with the ability to overcome cross linguistic interference in conjunction with the issue of intelligibility.

Regarding second language performance and intelligibility, previous research has perceived intelligibility as a one-way process in which non-native speakers strive to make themselves understood by native speakers who decided what was intelligible and what was not. In Europe, with non-natives teaching to non-natives in university classrooms, intelligibility is a highly relevant concept for multilingual communication and, in particular, with users in lingua franca contexts. However, it has proven difficult to define and measure (see Nelson 2008; Yazan 2015).

It would seem that intelligibility means different things to different people and given the range of existing research, a clarification of terminology is in order. Earlier research has struggled to define the term and pointed to both formal as well as functional features. The definition of intelligibility ranges from a focus on target pronunciation, to lexical choices, to syntactic structures as well as to the overall communicative effect of the utterances.

Derwing and Munro (2005) and Munro (2008) distinguish "intelligibility" as being understood, "comprehensibility" as the listeners' capacity to understand, and "accentedness" as the divergence from an expected pattern. Focusing exclusively on pronunciation, production and comprehension are considered separately. However, production, comprehension, and divergences working together are precisely what makes a

communicative message *intelligible* in the first place, many times regardless of pronunciation. Clearly, intelligibility is more than phonological features.

Moreover, the key to public academic discourse is how users attribute meaning to the elements around them in a cooperative effort and how these same users overcome their mis-performances. For our construct, intelligibility, comprehensibility and divergences are uniquely interwoven into the communicative event in the public academic discourse. Ellis and Larsen Freeman (2006) refer to this as "Dynamic Systems Theory" where communicative behaviours emerge from interaction and co-regulations among users.

In spoken speech-acts, the dual role of speaker and listener are intertwined into a functional event. Our focus is the impact of imperfect performance on the overall transmission of the message. In this framework, we need to see how intelligibility and comprehensibility work together, we need to examine how "accentedness" or divergence from expected patterns impacts or does not the transmission of the intended message. Thus, this study inserts intelligibility into the larger communicative context. Effective communication "is not solely speaker- or listener-centred but is interactional between speaker and listener" (Smith and Nelson 2007:429). We must take a closer look at cooperation and listener comprehension if we are to truly discuss intelligibility in this public discourse setting.

In spoken speech-acts, the interactional roles of speaker and listener combine to create an intelligible, communicative event. The term "cooperation" has been used in conversational analysis to describe what users do to encode and decode the message, but the term is not clear. After taking a closer look at cooperation, Davies (2007:2038) has suggested that "the recurring issues are the distinction between sentence-meaning and speaker-meaning, the notion of systematicity in language, and the idea of rationality being central to human action." She is, in fact, highlighting the interplay between what the speaker intends, with

what the speaker actually says, as well as, with what the listener ultimately understands. So, by this definition, cooperation is part of a multifaceted, dynamic communication process that supports intelligibility.

These concepts of cooperation and listener accommodation will frame compensatory discourse strategies for the in-service training. In the context of discourse, compensation is anything a speaker does to be understood coupled together with anything the listener does to understand. In this way it reflects both cooperation as well as listener accommodation of the communicative event. A listener may focus on the precise language used, on the cognitive concepts presented or on the overall socio-linguistic context at any given time during the class.

3. Method and sample

We have chosen an action research approach because of the relevance to the participating professors. The primary reason for engaging in action research is for participants to improve their professional practice; and an experiential frame will allow us to put our research directly into action in the Computer Science classroom.

The idea of direct experience is crucial to our final assessment. We seek to make explicit the implicit strategies of effective academic public discourse for Computer Science professors teaching through English by involving them directly in the research process. Action research identifies a common problem for a group, designs an action plan to help address the concerns of the group, and collects data to explore possible solutions. Professors who are not foreign language specialists are highly concerned with their

linguistic performance when teaching through English (Rubio Alcalá and Hermonsin Mojeda 2010; Fortanet-Gomez 2012; Hynninen 2012). The research focus lies both on language as well as on the users; and, at the practical level, seeks to improve academic public discourse. In this respect, Bokor's (2011:209) findings confirmed that exposure to the World Englishes paradigm had a positive influence on the participants and enhanced their understanding of themselves and non-native English speakers.

Action research differs from traditional research. While traditional research abstracts one or two factors for attention until the experiment is concluded, action research attempts to understand all the factors relevant to an immediate problem whose nature continually changes as events proceed (Cohen and Manion 1989). Consequently, traditional research tends to focus on the product and not the process itself. This more comprehensive approach will allow us to examine how form and function work together in bilingual discourse.

Following our action plan, this study takes a sequenced approach to analyse the errors in spoken performance. Next, the interim step assesses the impact of these errors on intelligibility in a qualitative post coding analysis to filter for the systematic patterns that created miscommunication. The final, more practical approach explores how professors can compensate with instructional discourse and will require further research and additional measures to reach more significant conclusions within the paradigm of "world Englishes."

The sample is a context model of nine Computer Science classrooms over a period of one academic year at the University of Malaga in Southern, Spain. Eight professors participated in a professional development project to orientate and assess their bilingual instruction. The data has been collected from university classroom discourse and is comprised of 34 hours of spoken discourse with eight different Spanish professors teaching Computer Science through English. This sample is considered uniform in that the eight participants were

highly functional users and stable in their linguistic competence. Proficiency ranged from C1 to C2 using the Common European Framework for languages (CEF). All speakers were male, Computer Science professors and highly experienced teachers. In every case, this was their first experience teaching through a second language; and in every case, Spanish was their first language. Aside from programming languages, the professor participants were decidedly not language specialists.

The modality is spoken classroom discourse and the errors have been post coded into linguistic levels, using substitution, omission, insertion as the main subcategories. For the phonological category, 207 errors were recorded, while the sample for usage was 202 errors across the eight different speakers.

All data has been collected through direct classroom observation. Extensive field notes as well as an audio recording of all sessions allowed for detailed contrastive analysis for each participant as well as systematic comparison across the eight different speakers. Follow-up interviews with each professor participant as well as student surveys provided the triangulation necessary to validate the findings (Griffith 2019).

However, the purpose of triangulation goes beyond validation to reveal different dimensions of the data collected. The in-service training provided for a more comprehensive framework for validation. The researcher's opinion combined with students' assessment; the professor participants offered their own assessment of public discourse performance; and both interaction data as well as students' results all provided different perspectives to further validate the findings of communicative intelligibility (Griffith 2017). The fact that the sessions were recorded allowed for a review of the utterances to further assess intelligibility.

Multi-directional contrastive analysis of public discourse encompasses both the form and function of language to illustrate the underlying "information structures" (Lambrecht 1996). So, in many ways, the form of language was used to underscore the communicative function of language. In turn, this was made explicit to the participating professors forcing them to re-examine their instructional discourse.

Before moving on to the analysis section, it is important to note that context plays a key role in understanding social discourse in language use (see Introduction, this volume). Public communication, as a contextually-bound phenomenon, depends on the particular characteristics of the discourse practice and discourse type in which the communicative event takes place, as Fairclough (2002) argued. Therefore, our data sample is taken from naturally occurring academic discourse where non-native professors were teaching through English to non-native students. Our context includes precision, underlying cognitive information structures, as well as the sociolinguistic aspects of intelligibility and negotiation of meaning.

4. Analysis and findings

The research questions have been presented in a purposeful sequence. Micro linguistic analysis must move into a macro linguistic frame in order to discuss intelligibility. Stage one will focus on the first research question to address the relationship to errors and cross linguistic transfer. Next, the data will be limited to the "mis-performances" in order to focus on their impact on intelligibility in stage two of the analysis. And finally, the professors' compensatory discourse strategies will be highlighted.

4.1 Stage one

Our findings corroborate a persistence of structural priming in cross linguistic transfer, making the underlying L1 pattern in the L2 performances evident. In this analysis, we move beyond description to use contrastive analyses to assess the causes for these utterances, to identify some common error types for Spanish 'thinkers' using English. In turn, these findings were shared with professor participants so that they could begin to examine, not only their mistakes, but the underlying reasons for these mis-performances.

Preliminary coding of the linguistic data includes a classification of all L2 errors according to linguistic levels, form, and cause. The data set was unwieldy and we devised a simple classification in order to examine the data. Figure 1 shows the total errors collected over 34 hours of academic classroom discourse. 207 related to mispronunciation; 154 are attributed to morpho-syntactic usages; 35 are due to semantics (lexical choice); and 19 were considered discursive errors. These will be expanded upon briefly in order to synthesise our findings.

a) Linguistic levels refer to the categories phonological, morpho-syntactic, semantic or related to instructional discourse. In the communicative context, it is difficult to separate the sounds of language, from the structure, from the semantics. Sounds are related to words, words to sentences, and sentences to overall meaning. Regarding intelligibility, these subcategories allowed us to target more problematic levels. For example, our findings point to more difficulties at the morpho-syntactic level and markedly fewer at the phonological level.
b) Form (e.g., omission, insertion, substitution.) At the phrase level, many of the errors co-occurred across linguistic levels and these combined form errors oftentimes defied

classification altogether. Nevertheless, we did find this simplified structure useful when explaining errors to these professors in that it allowed for a simple contrastive structure to relate form to speaker intention. It became a way to reflect on the two sets of structural rules between the two languages.

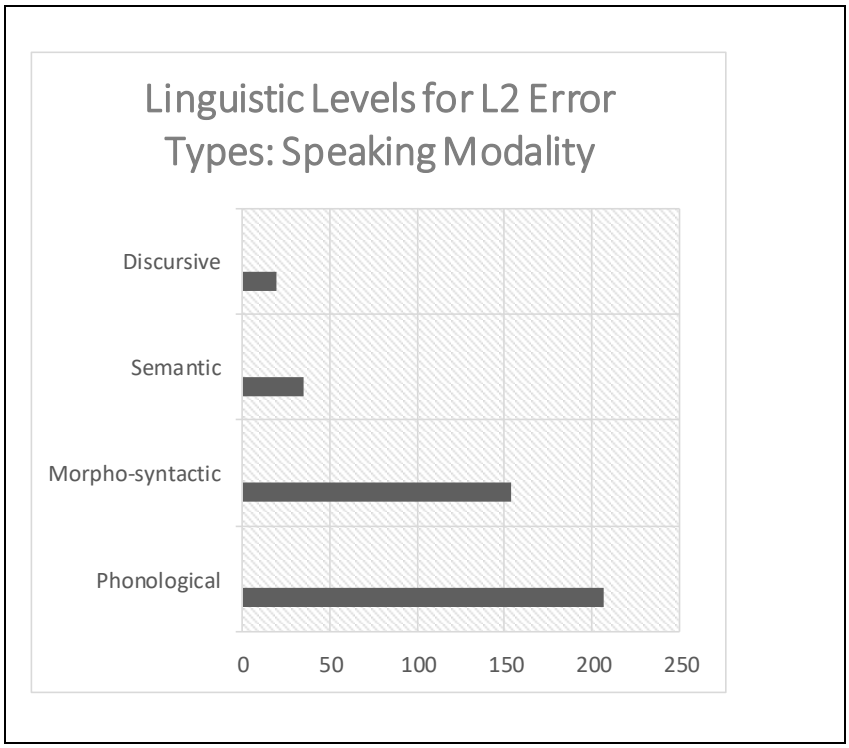

Figure 1. Errors observed in 34 hours' classroom instruction, 8 high proficiency speakers (Griffith 2015).

c) Cause refers to if the error can be traced to the L1 or not. Our findings have yielded all 207 pronunciation errors together with 174 usage errors as directly related to transfer and therefore classified as interference. The next two sections will point out some systematic performance errors both at the phonological as well as the usage level which resulted in listener accommodation.

4.1.1 *Phonological mis-performances*

One of the main causes of foreign accents is that once learners have established the L1 sounds, they tend to perceive all new sounds in terms of those categories. Consequently, L1 perceptions leak into L2 production and both encoding and decoding might be affected.

However, accent and mispronunciation are two very distinct features of L2 production. The author notes that this selection is based on the interpretation of the speaking criteria established by the CEF (Common European Framework) and her own experience as a native speaker language assessor. What is acceptable as far as accent is concerned is oftentimes subjective. We have taken the samples of mispronounced terms and excluded those which would be considered acceptable according to the CEF for languages for the C1-C2 levels.

The most common errors occurred with vowel quality in that English vocalic patterns contain more sounds (14) than Spanish (5) or with the consonant sounds that exist in English, but not in Spanish. In Figure 2 we see a classification of all the mispronounced terms produced in 18 class sessions together with the usage errors.

Given that the total data is approximately thirty-four hours of recording, the numbers are surprisingly low. Phonological data yielded only 8 incomprehensible terms, 106 substitutions, 46 omissions, 29 intonation errors, and 26 insertions. For example, professors would say “lunch” for launch, “impotent” for important, “estore” for store, to name a few.

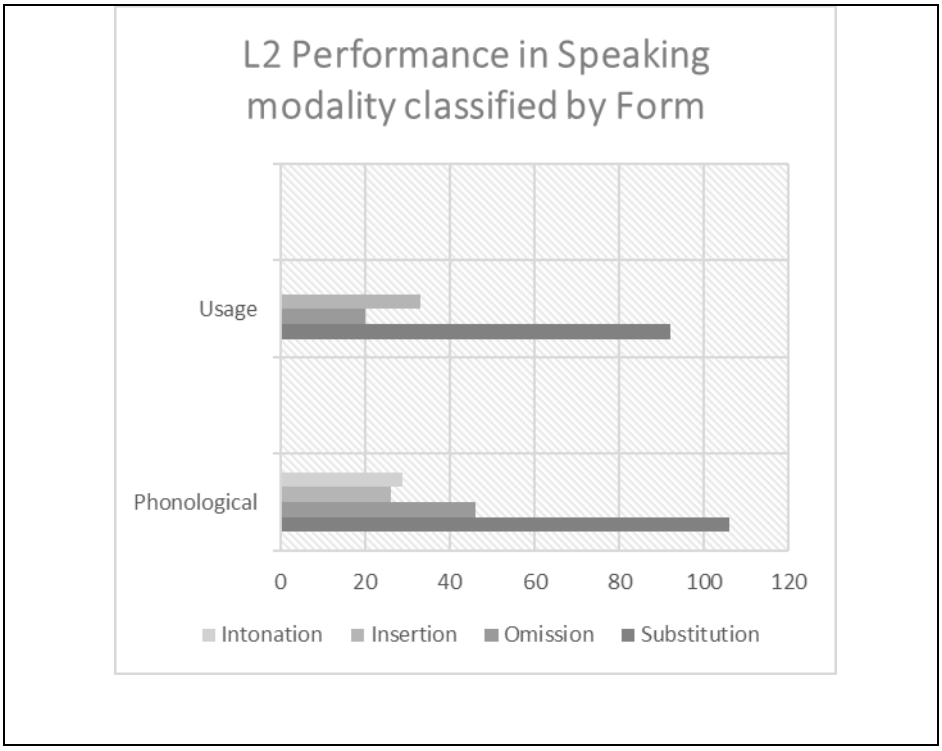

Figure 2. Form classification for errors observed in 34 hours of classroom instruction of 8 different highly proficient speakers (Griffith 2015).

Any comparison between languages will most likely highlight that the second language has strange sounds for the first language ear. Regarding intelligibility, we do note that improper intonation or a misuse of the tonic stress patterns seemed to create more confusion than the phonemic discrimination. While at the same time, compensation features, such as listener accommodation, usually overcame simple mis-performances. Communication was never impaired due to accent and the student feedback collected corroborated this giving new weight to the concept of English as a lingua franca *not* being tied to native like performance in public discourse.

The systematic errors were shared with the professors' group to make them aware of their specific mis-performances. By making the specific errors explicit in relation to their

underlying L1 patterns, professors could reflect on their performance. L1 interference was revealed to these participants through this contrastive approach. This is true for phonetics and phonology, as we have just seen; and it is equally true for usage.

4.1.2 *Interrogation and listener accommodation*

In reference to usage, the error analysis of thirty-four hours of recorded data show substitution to be the most common form of error with 92 examples, followed by insertion with 33, and finally by omission with 20 (see Figure 2). Overall, Spanish has a more flexible syntactic order as compared to the more syntactically constrained English.

When examining these usages in the academic discursive context, the formal contrastive aspects are easy to pick out. Some utterances might be considered grammatical, but not necessarily appropriate given the context. Simple mis-performances resulted in listener accommodation.

In context, simple mis-performances showed little or no impact on intelligibility, while they did show a close relationship to cross linguistic transfer. For instance, example (1a) shows the actual utterance compared to Spanish version. Example (1a) is clearly an error in word order; in fact, the structure seen in corresponds to the target L2 pattern. This error in the syntax of the indirect question was one of the most frequent across all participants.

(1) a. **This is why appears this message*[2]

Esto es porqué aparece este mensaje

'This is why this message appears'

[2] All utterances marked with * refer to the data collected and classified as errors.

b. **Do you remind parallelism the last day?*

¿Os acordáis (del) paralelismo (d)el último día?

'Do you remember parallelism from the last class?'

When approaching this analysis thinking in Spanish, one can clearly see the underlying pattern from the L1. But if you take both languages together, you will realise that the syntactic inversion created in English as uniquely tied to interrogation, while in Spanish it is not significant at all. A multicompetent user can hold two patterns and tie these patterns to the interrogative function. An English "thinker" using Spanish has more syntactic options, while the Spanish "thinker" using English must learn the constraints.

Example (1b) shows a combined mis-performance, where there is both a lexical substitution of *remind* for "remember" as well as a lexical choice of *day* instead of "class". Functionally, the cohesive intention is clear: the professor is pointing back to previous knowledge in order to build upon it. Even though the utterances illustrate both a lexical challenge as well as a structural challenge, the pragmatic speaker intention was never lost.

The multi-competent user of both English and Spanish can hold these two patterns in their minds, often creating grammatical, but inappropriate phrases. If you construct this sentence from a Spanish point of view, you will seek out the elements that have been structurally primed in your L1 brain and, in turn, recreate these patterns in L2.

espite mis-performances, students were accommodating and actively decoding the messages in context. The native speaker observer found some syntactic structures confusing as she struggled with the complex content and its "less than perfect" usage. Undoubtedly, the complexity of the context pushed form issues into the background. More research is warranted to fully explore the integration of content and language in higher education to

reveal how language and content work together during the decoding of academic public discourse.

In simple constructs, there is little to discuss, but with the complex sentences, the patterns become more difficult to anticipate for the L2 user, both the speaker as well as the listeners. Even though no clear conclusions have ever proven that all L2 errors are due to interference, the errors observed show clear underlying conceptual constructs using L1 patterns. We can conclude that structural priming in L1 led to this usage, but did these errors always create miscommunication?

4.2 Stage two

The next research question targets specific mis-performances and inserts them into the public discourse model of intelligibility. Transitivity, agency, verb patterns, reflexive usages, and reduced clauses are some features that do not always transfer in complex utterances. Moving beyond the form focus to the underlying message and information structures will be key to determining intelligibility in classroom discourse in bilingual settings.

The analysis will begin with the utterances considered mis-performances and will assess their impact on intelligibility, first with pronunciation and next with usage. With more and more non-native speakers using English across the world, Jenkins (2000) has called attention to the “non importance” of pronunciation. This is corroborated by our findings which identifies mis-performances and filters the few that truly impact interpretation of the message.

4.2.1 *Phonological intelligibility and negative structures*

At the phonological level, the findings show that phonemic discrimination played a lesser role in miscommunication than tonic stress or intonation. With regard to phonological intelligibility, the most significant occurrence observed that improper intonation lead to misinterpretations of the negation. The frequent omission of the final /t/ combined with a lack of tonic stress on the negative auxiliary often left the listener wondering if the sentence was an affirmation or a negation. Spanish does not have many consonant clusters and most words end in vowels making the final sound in /nt/ unnatural. At the same time, prosodic linking patterns are sometimes avoided by L2 users in their goal to pronounce every element, so the affirmative intonation and the negative intonation tended to overlap. Speakers were found to have a systematic phonological mis-performance in the tonic stress patterns of the negation and the affirmation.

(2)	a.	*You can do that*	*/ˈjuːkən ˈduː ˈðæt/*
	b.	*You can't do that*	*/ˈjuː ˈkaːnt ˈduː ˈðæt/*

Sometimes there was an avoidance of linking patterns and other times there was a lack of tonic stress on the negative auxiliary. Examples (2a) and (2b) show a phonetic representation of target usage but the actual utterances were systematically somewhere 'in between' the target patterns.

Other mis-performances of the negative function include the omission of the negative auxiliary (3a) or other misuses of negative or emphatic structures as seen in examples (3b)

and (3c). All resulted in lower intelligibility suggesting that the negative function needs more attention during classroom discourse.

(3) a. **She not see*

b. **They are not very used*

c. **It does make no sense*

4.2.2 Combined errors and interrogative function

Overall, combined errors played an important role in intelligibility at the functional level. Interrogative syntax was frequently violated with both questions and indirect questions. The utterances that combined a lack of intonation together with a mis-ordering of interrogative syntax had lower intelligibility, while utterances with improper syntax, but proper intonation resulted in listener accommodation. Example (4a) shows how intonation seems to play a bigger role than syntax with regard to intelligibility.

(4) a. **'How we could put a Boolean here?* ↗

¿Cómo podemos poner un Booleano aquí?

'How could we put a Boolean here?'

b. **'In which course are enrolled these students?'* ↘

¿En qué curso están matriculados estos alumnos?

'In which course are these students enrolled?'

When the intonation was rising, listeners accommodated for the mis-performance. However, in example (4b) the speaker failed to create the target inverted interrogative

structure coupled with his lack of rising intonation. Listeners failed to recognise the utterance as a question and could not discern the speaker's intention. In (4b) we see not only the lack of interrogative inversion, but also one of the most pervasive of errors across the eight speakers combined with intonation. The target English structure is in direct violation of standard Spanish, which would never separate the verbal unit as English does in interrogative inversion [auxiliary + Subject + main verb]. This contemplation leads us to the conclusion that in order to speak a second language, the rules we have always taken for granted somehow must be re-established (i.e., accommodation). Two languages in one brain must hold two sets of structural rules (i.e., multicompetence).

4.2.3 *Complex constructs: verbal patterns and adjunctive syntax*

To reiterate, it is the phrases that combine errors that negatively impact intelligibility. One systematic mis-performance involved verb patterns and adjunctive placement. For instance, example (5a) shows misplaced adjunct combined with indirect question. When this less constrained syntax violates natural patterns of transitivity, utterances like the examples (5a), (5c), and (5d) occur.

(5) a. * *I want you to at least find which are the remaining constraints*

'I want you to find at least which the remaining constraints are'

b. [Quiero **que** al menos encontréis cuáles son las limitaciones restantes]

'($^{(I)}$ want) *that* at least ($^{(you)}$ find) which are the constraints remaining'

c. **I want **that** you bring **to the class** the printed worksheet*

‘I want you to bring the printed worksheet **to (the) class**

d. **Pick **for each of the cities** the two edges used*

‘Pick the two edges used **for each of the cities**’

e. **Well, I have prepared **for this class** several problems*

‘Well, I have prepared several problems **for this class**’

The back translation shown in (5b) illustrates how the cross-linguistic patterns varies greatly. The control verb[3] *want* would generate a full subordinate clause in target Spanish, while the adjunct ‘at least’ has a more flexible syntactic position. In (5c) the user inserts the clausal marker *that* to create a grammatically acceptable utterance and thus avoids the more common usage of the reduced clause [to want someone to do something]. This pattern reflects the L1 construct seen in (5b).

How verbs work in each language is a question of how these information structures are stored in our memory in L1. For instance, in (5c), the verb *bring* is highly transitive in English; so *what* you bring is more important than *where*, *when*, *how*, or to *what degree* you bring it. This could be a question of emphasis or perhaps could be tied to the role of transitivity but, in general, target Spanish structure places the adverbial adjunct in a different position than target English structure. Each language has a pattern that a native listener is anticipating. However, a multicompetent listener can accommodate both patterns

[3] In linguistics, “control” is a construction in which the understood subject of a given predicate is determined by some expression in context. In English, these verbs create reduced clauses. A superordinate verb "controls" the arguments of a subordinate, nonfinite verb: i.e., want, judge, believe, etc.

and understand that a change in syntax could mark the sentence emphatically in one language and remain neutral in the other.

Talmy (2003) has referred to space, time, and causation (among others) as a basic conceptual structuring. When out of place, the adverbial reference loses or employs the emphatic intention. On occasions, this usage violates transitivity or creates confusion in the listener, particularly the native speaker listener who is anticipating target structures. Target Spanish places the adjunctive phrases in medial position, while target English tends to place adjuncts at absolute beginning or end. In examples (5c), (5d), and (5e) the syntactic positioning of the highlighted phrase corresponds to the Spanish pattern.

4.2.4 *Complex constructs: causation*

The final systematic mis-performance involves both interrogative function as well as causation. Each example is from a different speaker. Example (6a) shows the most common misuse of the 'causal to' pattern tending to follow the L1 pattern together with a tense choice that is inappropriate and the awkward lexical choice of 'which' for how.

(6) a. **Which way are we asking for doing this?*

'How should we ask ----- to do this?'

b. [¿Cómo debemos pedir para hacer esto?]

c. **If you are asked* ***for*** *solving this…*

'to solve'

d. **A path* ***for*** *going to this node…*

'to go'

In example (6a), the user hyper-regularises an English rule whereby the prepositional phrase *for doing* [prep + V +ing] is grammatically correct. However, the functional usage of causation in standard English would not create a prepositional structure, while in Spanish it does. Every professor but one yielded examples of this causal error. All pervasive errors were made explicit to the professors' group and the underlying function revealed.

The real challenge in the case of this in-service training was that the professors were not linguists and their goal was not to teach English, but to teach Computer Science. We needed a way to make these structural discrepancies explicit. L2 users process information in both languages differently from that of monolingual native speakers. The resulting linguistic competence of a bilingual L2 learner is therefore qualitatively different from the one possessed by monolingual minds.

The real limitation of error analysis is that it makes no effort to identify what users do right. A more formal approach to linguistic structures can lead to a distorted view of language performance, while a public discourse approach looks to function. Functional performance deals with discursive features such as speaker intention, communicative intelligibility and listener accommodation. To close this section on intelligibility, we must filter the systematic errors. This post coding has yielded four categories highlighting the mis-performances that had a negative impact on intelligibility as shown in Figure 3.

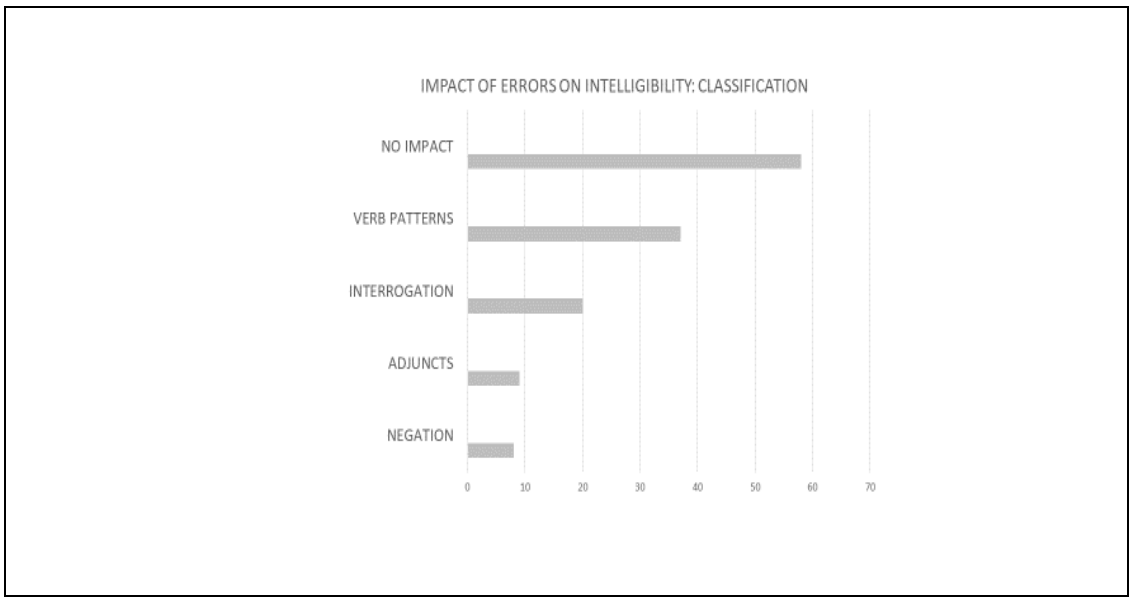

Figure 3. Post coding for L2 performance errors affecting intelligibility.

After controlling for intelligibility, the findings show that the systematic usages that had a negative impact include:

1. Improper interrogative syntax combined with lack of intonation, i.e., rhetoric and indirect questions.
2. Mis-performances tied to negation, i.e., omission of auxiliary verbs, lack of intonation, among others.
3. Misplaced adjuncts or adverbial markers (usually tied to temporal cohesion).
4. Complex verbal patterns i.e., causation, avoidance of reduced clauses, prepositional collocation, etc.

All other errors, though systematic, proved to have only a limited impact on intelligibility. In highly proficient users, lexical errors seemed to be the easiest for listeners to accommodate for, while the phonological and structural patterns showed higher fossilisation. For example, at the lexical level, instructional words, such as *remind*, *suggest*,

advise, *warn*, *remember*, etc., were systematically misused while at the same time, they were systematically understood. The sample is small and more research is warranted to reveal specific problematic patterns for Spanish thinkers using English as a L2. The most significant finding lies not in the description, but rather with the compensation strategies observed and the practical implications for bilingual public discourse.

5. Discussion

Classroom academic discourse can be politically charged or not, but as a key transmitter of culture, it does indeed play a role in this volume. The article takes both a descriptive as well as a cognitive perspective in describing what is occurring as non-natives interpret the message transfer. English as a lingua franca distinguishes itself from English as a foreign language within a Global Englishes paradigm in which "non-native speakers […] and all English varieties, native or non-native, are accepted in their own right rather than evaluated against a NSE [Native Speaker English] benchmark" (Jenkins, Cogo, and Dewey 2011:283–284). They are assessed by their ability to transfer knowledge, or as we have emphasised, a co-created intelligibility. What is salient is when less than perfect utterances are inserted into their public discursive context, intelligibility was rarely lost. Both speakers as well as listeners accommodated for many of the mis-performances. Cooperation and listener accommodation both are activated in classroom discourse. The most practical implication was seen with the purposeful compensation that ensued.

Once mis-performances were made evident, and miscommunication revealed, professors began to use specific compensation strategies in subsequent classroom observations.

“These small acts of elaboration thus convey clear disciplinary meanings where what counts as convincing (…) and appropriate (…) is carefully managed for a particular audience” (Hyland 2007:284). We found that in bilingual public discourse the ‘careful management’ is tied to compensation strategies and cooperation and what is convincing is the intelligibility of the intended message.

In the bilingual classroom, multicompetent users must make the distinction between sentence meaning and speaker intention; they must consider notions of conceptual patterns underlying language; and their performance must be tied to rational, cooperative underpinnings for both speakers as well as listeners.

Comprehension then becomes intriguing because the non-linguistic as well as the linguistic features come into play. We may find an argument intelligible, but not comprehensible, because of the way it was structured, or even grammatical, but not natural or even inappropriate. In the classroom, we may find a miscommunication clarified by an image or a student’s question or by many other aspects of instructional discourse. Any utterance most assuredly must be inserted into a whole context to truly measure intelligibility.

How to transmit a complex message requires a multimodality that goes beyond the language emitted, to the scaffolding of the idea, to visual support, and, ultimately, to the decoding of the message by the receiver. These skills come to the forefront in all instruction, but are absolutely crucial in bilingual public discourse. We refer to these as compensation strategies; and through the in-service training, we were able to illustrate them to the professors.

In the introduction, we proposed to explore how professors could compensate for performance errors with instructional classroom discourse. Once the communicative intelligibility had been assessed and made explicit, professors began to use different

strategies. Table 1 shows a few examples that can be classified as linguistic, interactional, visual or structural.

Table 1. Sample compensation strategies.

Example	**Compensatory phrase**	**Compensatory image**	**Compensatory interaction to clarify**
Professor asks, **"So how we do this?"* *(phonologically ambiguous)*	*....I'm asking*		Reinforces the interrogative function
Student asks, *'What's a Chomsky?'***		Professor inserts image in presentation	Reinforces the lexical challenge for Students
Professor says, *"you can't do that"* *(phonologically ambiguous)*	*....I mean you can NOT.* x	Professor inserts iconic image	Reinforces the negative function both with extra phrase and visual support
Professor creates classroom log, summary questions, text become simplified, etc.		Increased use of visual and schematic materials	Improved structural and conceptual support
**As the professor was discussing Chomsky, the student assumed it was just 'another word he did not know' in English.			

These were used systematically in the sessions observed. In consequence, the practical implications highlight the professors' compensatory behaviour and illustrate a highly relevant result of metalinguistic reflection.

Preliminary findings point that the communicative context of the classroom itself makes form focus an imperfect measure of the communicative value of the classroom. Aspects such as clarification strategies, summarisation and negotiation of meaning proved to impact intelligibility much more than the errors detracted from it. In fact, the instructor with the

most formal errors, also had the highest rates of student interaction, tended to modulate his voice more, used more clarification strategies, employed summarisation systematically, among many other features of simply good public discourse strategies. In fact, as Johnstone (2018:8) argues, context and discourse are mutually shaped: discourse is shaped by its context and discourse shapes context. In fact, the justification for the inclusion of this example of academic discourse in this volume points to the larger frame of the communicative where messages are encoded and decoded and ultimately transferred in all aspects of public communication. As Seidlhofer (2004:211) puts it, "a lingua franca has no native speakers."

We have taken an experiential approach to communicative strategies which allows us to tackle this issue from both a formal as well as a functional point of view. Muñoz Luna and Taillefer (2014:470) call this "aiming to discover reasons for learners' lack of proficiency beyond evident linguistic inaccuracies." We suggest that formal aspects must be matched with functional features to better understand the complex processes involved when people verbalise their thoughts.

6. Concluding remarks

The way we interpret or react to someone speaking with an accent with a less than perfect performance has been changed forever by the speaker and listener's co-creation of the message and a growing acceptance of less perfect performance in the Lingua Franca paradigm. By focusing the discussion with intelligibility, our aim has been to address both speaker and listener's awareness of this public discourse in bilingual settings.

Undoubtedly, a bilingual processes and represents L2 using the existing patterns from L1. The peculiarly of message transfer and message reception in bilingual contexts is of particular interest in the European higher educational context but could lend itself to any information transfer made between individuals using a second language. Clearly, there are a great deal of language users in the world that would fall into this category of academic public discourse.

Public communication like all discourse can be described in terms of structure, manner of speaking, complexity, intelligibility, or audience. The concept of "public sphere" is not easy to define and delimit in a clear-cut way. Following Wright (2008: 21) "there is no such thing as "the" public sphere. Rather, there are public spheres. Any definition must take account of this distinction, and this (…) necessitates a multi-definitional, transdisciplinary approach" (cited in the introduction to this volume).

What is unique about this study is that these instructors were examining their own usage in the context of academic discourse in computer science. As Rymes (2008:5) argues, "when teachers analyze discourse in their own classrooms, academic achievement improves." When the professor is at the same time expert of a field and non-expert in English a measurable co creating of meaning occurs between speakers and audience.

Language can be measured as precision, associated with cognitive functions or inserted into a sociolinguistic frame. The sociolinguistic significance does remain in that now academic discourse includes non-native users in academic settings. CODA raises new questions about the importance (or not) mis performances, while highlighting the significance of intelligibility and co creating of meaning. Therefore, successful interaction may depend on the extent to which users and learners are prepared to listen to and understand varieties of L2 speech and to maintain a positive and receptive attitude towards doing so (Munro 2008:

211). Indeed, the true shift is the declining dominance of the role of native speaker or native like performance targets. It is through multicompetence that users must reflect on the formal aspects of language in use with regard to effective communication in bilingual public discourse.

The study collected data on linguistic performance to later associate this performance with intelligibility. Cross linguistic comparison explores the dynamic interplay between speakers and hearers, and research suggests that L2 users strategically adjust their encoding and decoding behaviours. While we continue to explore precision, English as a lingua franca in academic settings is changing the way we perceive mis-performances. CODA allows us a rationalisation of errors and a deeper understanding of bilingual discourse in use.

In sum, this research underscores the importance of language issues in higher education at a time of internationalisation and applies linguistic research to teacher education programs. Multicompetence is not only desirable, it is realistic. At the cognitive level, by taking a closer look at how people verbalise their thoughts, we can continue to gain insights about the concepts and complex processes involved when users hold two different language patterns in their minds.

References

Bokor, Michael. 2011. “Connecting with the ‘Other’ in Technical Communication: World Englishes and Ethos Transformation of U.S. Native English-Speaking Students.” *Technical Communication Quarterly* 20 (2): 208–237. doi:10.1080/10572252.2011.551503.

Brooks, Patricia, and Vera Kempe. 2018. “Linking Adult Second Language Learning and Diachronic Change: A Cautionary Note.” *Frontiers in Psychology* 9: 480. doi: 10.3389/fpsyg.2018.00480.

Chomsky, Noam. 2006. *Language and Mind* (3rd ed). New York: Cambridge University Press. doi: 10.1017/CBO9780511791222.

Clement, Karen A. 2011. “The World Englishes Paradigm and its Implications for International Students' Acquisition of Standard American English for University-Level Studies in the United States.” Theses, Dissertations, and Other Capstone Projects. Paper 272.

Cohen, Louis, and Lawrence Manion. 1989. *Research Methods in Education* (3rd ed). London: Routledge.

Cook, Vivian, and Li Wei (eds). 2016. *The Cambridge Handbook of Linguistic Multicompetence*. Cambridge: Cambridge University Press.

Dafouz, Emma, and Ute Smit. In press. *Road-Mapping English Medium Education in the Internationalised University*. London: Palgrave MacMillan. doi: 10.1007/978-3-030-23463-8.

Derwing, Tracey, and Murrey Munro. 2005. “Second Language Accent and Pronunciation Teaching: A Research-based Approach.” *TESOL Quarterly* 39 (3): 379–397. doi: 10.2307/3588486.

Dewey, Martin. 2007. “English as a Lingua Franca: An Interconnected Perspective.” *International Journal of Applied Linguistics* 17 (3): 332–354.

Ellis, Nick, and Diane Larsen-Freeman. 2006. “Language Emergence: Implications for Applied Linguistics-Introduction to the Special Issue.” *Applied Linguistics* 27 (4): 558–589. doi: 10.1093/applin/aml028.

Ellis, Nick, and Peter Robinson. 2008. “An Introduction to Cognitive Linguistics, Second Language Acquisition and Language Instruction.” In *Handbook of Cognitive Linguistics and Second Language Acquisition*, ed. by Peter Robinson, and Nick Ellis, 3-24. New York: Routledge.

Fairclough, Norman. 2002. *Media Discourse*. London: Arnold.

Fortanet-Gomez, Inmaculada. 2012. “Academics' Beliefs about Language Use and Proficiency in Spanish Multilingual Higher Education.” *AILA Review* 25: 48–63. doi: 10.1075/aila.25.04for.

Griffith, Mary. 2015. “Integrating Content and Language in Higher Education: Professor Support Network.” Unpublished PhD dissertation, University of Málaga. https://riuma.uma.es/xmlui/handle/10630/9718.

Griffith, Mary. 2017. “Tapping into the Intellectual Capital at the University.” *Universal Journal of Educational Research* 5 (12A): 134–143. doi: 10.13189/ujer.2017.051320.

Griffith, Mary. 2019. “In-service Training for Bilingual Implementation at the University.” *International Journal of Interdisciplinary Educational Studies* 14 (1): 61–77. doi: 10.18848/2327-011X/CGP/v14i01/61-77.

Hyland, Ken 2007. “Applying a Gloss: Exemplifying and Reformulating in Academic Discourse” *Applied Linguistics* 28 (2): 266–285. Oxford: Oxford University Press. doi:10.1093/applin/amm011.

Hynninen, Niina. 2012. “ICL at the Micro Level: L2 Speakers Taking on the Role of Language Experts.” *AILA Review* 25: 13–29. doi: 10.1075/aila.25.02hyn.

Jenkins, Jennifer. 2007. *English as a Lingua Franca: Attitude and Identity*. Oxford: Oxford University Press.

Jenkins, Jennifer, Alessia Cogo, and Martin Dewey. 2011. "Review of Developments into Research into English as a Lingua Franca." *Language Teaching* 44 (3): 281–315.

Jocuns, Andrew. 2012. "Classroom Discourse." In *The Encyclopedia of Applied Linguistics*, ed. by Carol A. Chapelle, 620–625. London: Blackwell.

Johnstone, Barbara. 2018 (2007). *Discourse Analysis* (3rd ed). Hoboken, NJ: John Wiley & Sons.

Kroll, Judith, and Gretchen Sunderman. 2003. "Cognitive Processes in Second Language Learners and Bilinguals: The Development of Lexical and Conceptual Representations." In *The Handbook of Second Language Acquisition*, ed. by Catherine Doughty, and Michael H. Long, 104-129. Cambridge, MA: Blackwell.

Lambrecht, Knud. 1996. *Information Structure and Sentence Form: Topic, Focus and the Mental Representation of Discourse Referents.* New York: Cambridge University Press.

Langacker, Ronald. 1987. *Foundations of Cognitive Grammar*. Stanford, CA: Stanford University Press.

Loebell, Helga, and Kathyrn Bock. 2003. "Structural Priming across Languages." *Linguistics* 41 (5): 791–824. doi:10.1515/ling.2003.026.

Lorenzo, Francisco A. 2008. "Instructional Discourse in Bilingual Settings. An Empirical Study of Linguistic Adjustments in Content and Language Integrated Learning." *Language Learning Journal* 36 (1): 21–33.

Munro, Murrey J. 2008. “Foreign Accent and Speech Intelligibility.” In *Phonology and Second Language Acquisition*, ed. by Jette Hanson Edwards, and Mary Zampini, 193–218. Amsterdam: John Benjamins.

Muñoz Luna, Rosa, and Lidia Taillefer. 2014. “A Mathematical Model for Academic Genre Awareness: Writer’s Metalinguistic Knowledge in English L2 Writing.” *Revista Española de Lingüística Aplicada* 27 (2): 469–449. doi:10.1075/resla.27.2.11mun.

Nelson, Cecil L. 2008. “Intelligibility since 1969.” *World Englishes* 27: 297–308. doi:10.1111/j.1467-971X.2008.00568.x.

Rubio Alcalá, Fernando, and Manuel Hermosin Mojeda. 2010. “Implantación de un programa de plurilingüismo en el Espacio Europeo de Educación Superior: análisis de contexto y detección de necesidades” [Implementation of a plurilingual program in the European Higher Education Area: Context analysis and needs assessment]. *XXI Revista de Educación* 12: 107–128.

Rymes, Betsy. 2008. *Classroom Discourse Analysis: A Tool for Critical Reflection*. Cresskill, NJ: Hampton Press.

Seidlhofer, Barbara. 2004. “Research Perspectives on Teaching English as a Lingua Franca.” *Annual Review of Applied Linguistics* 24: 209–239.

Sert, Olcay. 2015. Social *Interaction and L2 Classroom Discourse*. Edinburgh: Edinburgh University Press.

Skehan, Peter. 1998. *A Cognitive Approach to Language Learning*. Oxford: Oxford University Press.

Smith, Larry E., and Cecil Nelson. 2007. “International Intelligibility of English.” *World Englishes* 4 (3): 333–342. doi: 10.1111/j.1467-971X.1985.tb00423.x.

Talmy, Leonard. 2003. *Language, Speech, and Communication. Toward a Cognitive Semantics, Vol. II: Typology and Process in Concept Structuring.* Cambridge, MA: The MIT Press.

Tanner, Kimberly D. 2012. "Promoting Student Metacognition." *CBE—Life Sciences Education* 11: 113–120. doi: 10.1187/cbe.12-03-0033.

Tarone, Elaine, Martha Bigelow, and Kit Hansen. 2013. *Literacy and Second Language Oracy*. Oxford: Oxford University Press.

Wright, Scott. 2008. "Language, Communication and the Public Sphere." In *The Handbook of Communication in the Public Sphere*, ed. by Ruth Wodak, and Veronika Koller, 21–44. Berlin: Mouton de Gruyter.

Yazan, Bedrettin. 2015. "Intelligibility." *ELT Journal* (69) 2: 202–204. doi:10.1093/elt/ccu073.