

# The Discourse Functions of Metadiscourse in Published Academic Writing: Issues of Culture and Language<sup>1</sup>

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## *Abstract*

Taking the non-integrative approach to metadiscourse (Ädel 2006; 2008), this paper carries out a cross-cultural and cross-linguistic analysis of text- and participant-oriented metadiscourse in two rhetorically forceful research article sections (Introductions and Discussions). Results show that, across cultures, the average frequencies of the two types of metadiscourse are relatively similar in the two article sections. Findings also show that the micro-level discourse functions of these metadiscourse types seem to concentrate in specific information moves in these sections, suggestive of shared uniform conventions for academic writing across cultures and languages. The exploration of metadiscourse further reveals several culture- and language-specific traits regarding preferred lexicogrammatical realisations of metadiscourse units, different preferences for personal/impersonal metadiscourse types as well as different textual developments for constructing arguments.

## *1. Introduction*

Echoing Bakhtin's contention on "the reader's apperceptive background and his degree of responsiveness" (1981: 346), genre-based approaches to academic prose have broadly argued that the research article genre (RA) is not only content-oriented but also dialogic and interactive in various different ways (cf. Berkenkotter and Huckin 1995; Swales 1990, 2004). In the current context of international scientific communication, where English has become the dominant *lingua franca* of all academic and research activities (cf. Ammon 2007; Dewey 2007), writer/reader interaction in non-native scholars' academic writing production has become a major focus of attention in the Contrastive Rhetoric (CR) field. Most CR studies have analysed linguistic features of stance, evaluation and metadiscourse and found preferred uses of personal/impersonal ways

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of expression in RAs written by scholars from Anglophone and non-Anglophone contexts—the latter as varied as Finnish, Norwegian, German, French, Russian, Bulgarian, Ukrainian, Russian, Spanish and Polish, among others (e.g. Mauranen, 1993a, 1993b; Vassileva 2000; Dahl, 2004; Blagojevic 2004; Yakhontova 2006; Moreno, 1997; Pérez-Llantada 2007, Duszak & Lewkowicz 2008).

Contributing to this line of investigation, this paper compares the use of metadiscourse in Introduction and Discussion sections—both sections described as rhetorically forceful and dialogic—in RAs written by scholars from two cultural contexts (North-American and Spanish) and in two languages (English and Spanish). The paper specifically borrows Ädel's (2006, 2008) non-integrative approach to metadiscourse and her taxonomy of text-oriented and participant-oriented functions.

The former type comprises all textual material that serves as signposts for readers through the text while the latter includes textual material that the writer uses to interact with the reader (Ädel 2006: 184), both types take place in the world of discourse, not in the real world. As opposed to the integrative approach to metadiscourse (cf. Vande Kopple 1985; Crismore 1989; Crismore et al. 1993; Hyland 1998), Ädel's non-integrative approach allows a precise identification of micro-level discourse functions and by this means provides a more accurate picture of the metadiscourse phenomenon than other broader, at times overlapping, theoretical frameworks such as stance or evaluation. The aim of this paper is twofold: i) to identify the micro-level discourse functions of metadiscourse in Introductions and Discussions across cultures and languages, and ii) to explore the correlation between these functions and the information-organising moves established for these sections (cf. Swales 1990; 2004). The paper also discusses some possible factors that may account for the similarities and differences found in the use of metadiscourse in the cultural contexts and languages selected for the study.

## *2. Methodology*

For the analysis, we selected 144 Introduction and 144 Discussion sections from the biomedical component of the *Spanish-English Research Article Corpus* (SERAC; see Pérez-Llantada 2008). These RA sections were taken from 48 articles written in English by North-

American based scholars (ENG subcorpus), 48 articles written in English by Spanish scholars (SPENG subcorpus) and 48 articles written in Spanish by Spanish scholars (SP subcorpus). The articles from ENG and SPENG were retrieved from a sample of high impact-factor international journals, while the articles from SP were taken from a sample of Spanish journals. Table 1 below provides details on the corpus.

Table 1. Number of words in corpus sample

	Introduction sections	Discussion sections	Total words
ENG	19,114	47,922	67,036
SPENG	19,611	46,023	65,634
SP	18,858	53,755	72,613
Total words	57,583	147,700	205,283

Unlike other academic divisions, the biomedical field has a well-defined set of conventions for manuscript writing, as described in the *Uniform Requirements for Manuscripts Submitted to Biomedical Journals* (<http://www.icmje.org/>). These requirements apply to both international and national publications and were thus thought to guarantee a suitable basis for detecting cross-cultural and cross-linguistic variation of metadiscourse. It is worth noting that both the ENG and SPENG subcorpora satisfy the comparability criteria proposed by Moreno (2008: 35) in that “the text exemplars are similar in all of the relevant contextual factors”.<sup>2</sup> An additional feature of the corpus is that, together with ENG and SPENG, it also includes a third set of data, the SP subcorpus, in order to allow the identification of L1 linguistic traits among the Spanish

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<sup>2</sup> This applies to text form (scientific exposition), genre (research article), mode (written language), participants (the writers are researchers/professors with a university affiliation and readers are international researchers and university professors), situational variety (formal language), dialectal variety (standard), tone (serious), global communicative purpose (sharing results from research), other communicative purposes (persuading the audience), language (English) and scope of the journal (international, impact-factor based).

scholars and its comparison with their L2 textual practices (cf. also Mauranen 1993b).

In classifying the functional role of micro-level metadiscourse units we also sought to identify the correlation between these functions and the move-structure established for writing Introductions and Discussions (cf. Swales 1990, 2004). To do so, we used the ‘Create-a-Research-Space’ (CARS) model for writing Introductions, which consists of three main moves “[p]rimarily concerned with establishing the news value of the researchers’ work” (Swales 2004: 236): ‘Establishing the research territory’ (Move 1), ‘Establishing a research niche’ (Move 2) and ‘Occupying the niche’ (Move 3) (cf. Swales 2004: 227). The overall pattern for Discussion sections includes the following three moves: ‘Highlighting or consolidating overall research outcomes’ (Move 1), ‘Explaining specific research outcomes’ (Move 2), and ‘Stating research conclusions’ (Move 3). These move-patterns were used for identifying writers’ preferred linguistic realisations and discursal uses of metadiscourse.

### *3. Results*

Possibly because of the highly specialised knowledge background of the SERAC writers, the corpus displayed most but not all of the functions proposed by Ädel for argumentative student writing. Ädel’s proposed functions occurred in the Introductions of the three subcorpora except for ‘focusing’, ‘contextualising’, ‘concluding’ and ‘hypothesising about the reader’. Discussion sections in the three subcorpora contained the text-oriented functions of ‘focusing’ and ‘concluding’ but not ‘contextualising’ and ‘introducing the topic’. The ‘introducing the topic’ function was rather re-conceptualised in this RA section as ‘reminding’, that is, a restatement of introducing the topic. Ädel’s taxonomy of functions was adapted as follows (Table 2; ‘I’ refers to examples found in Introductions, ‘D’ Discussions).

Using corpus-driven procedures, a total of 1,498 discourse units were identified as explicit types of metadiscourse in the three subcorpora, an intra-rater reliability test was conducted by repeating the identification and categorisation of these units a month after the initial categorisation. This test showed 3.17% disagreement with the initial procedure. Contextual clues were used and colleagues in applied linguistics and

English-native scholars were consulted in an attempt to resolve cases of overlap between some micro-level discourse functions. A total of fifty-nine units were discarded since no agreement on their identification/categorisation was reached, which nonetheless corroborates the complexity of the metadiscourse framework.

Table 2. Ädel’s discourse functions of metadiscourse adapted to SERAC

	Discourse function	Examples from SERAC
CODE	<b>Defining</b> disciplinary terms and concepts	A PSM was defined as...(I) Haematuria is a known late complication (D)
TEXT –ORIENTED	<b>Introducing</b> the topic of the text, which facilitates readers’ processing of the subsequent text	The purpose of this study was...(I) In the present study we reviewed...(I) We report our success...(I)
	<b>Focusing</b> announces informational focus and narrows it down.	First,... second...(D)
	<b>Summarising</b> textual material which has been mentioned previously in the text	In summary, ...(I&D) X can be summarised...(D)
	<b>Exemplifying</b> introduces an example commenting on the foregoing text	... as an example, For example, ... such as..., e.g. (I&D)
	<b>Reminding</b> explicitly refers to textual material referred to before. In Discussions, it is usually a reminder of ‘introducing the topic’	the more recent work described above (I) Previously we have reported... (D) As we report here... (D)
	<b>Adding</b> explicitly indicates that new information is being provided	In addition, ... Additionally, ... Furthermore... Moreover (I&D)
	<b>Arguing</b> explicitly claims centrality of the information provided the text	We demonstrated that...(I) The results of this study indicate that...(D) Therefore, we propose that...(D)
	<b>Concluding</b> is used to conclude the text	To conclude, ...(D) In conclusion, ...(D)

PARTICIPANT-ORIENTED	<b>Anticipating readers' reactions</b> pays special attention to predicting the reader's disagreement to what is said	led us to speculate that it might be possible to induce (I) These results should be validated in ...(D)
	<b>Clarifying</b> specifies textual material in order to avoid misinterpretation	In other words, ... That is ... e.g. (I&D)
	<b>Aligning</b> with reader perspectives indicates that writers presuppose the reader's agreement	... in our knowledge of...(I) Our understanding of...(I) X can help us to understand...(D)
	<b>Appealing to readers</b> indicates writers' attitude with the aim of entreating readers and inviting them to share similar lines of thought	It is therefore important to understand ... (I) It should be noted that...(D)

In agreement with Ädel (2006: 195), the amount of data retrieved from the corpus indicated that metadiscourse material (i.e. textual material referring to the world of the text or to its participants) represented a very low proportion compared to the amount of textual material referring to the real world. Text-oriented metadiscourse was slightly more common in the Introductions than in the Discussions of the three subcorpora (Fig. 1 below), most likely because it is in Introductions that authors are expected to include signposts to guide readers through the evolving discourse. Participant-oriented metadiscourse was relatively scarce in Introductions but played a more prominent role in Discussions. The higher frequency of text-oriented metadiscourse in Introductions and a relatively even distribution of the two metadiscourse types in Discussions might be explained in the light of the rhetorical goals established for these sections: to tell the reader what the text is going to be about (Introductions) and to engage with the reader at the end of the research article for the sake of seeking acceptance of the new knowledge claims (Discussions). Thus, the presence of metadiscourse suggests that, although research article writing is predominantly informative, it also favours some space for dialogism in these two RA sections.

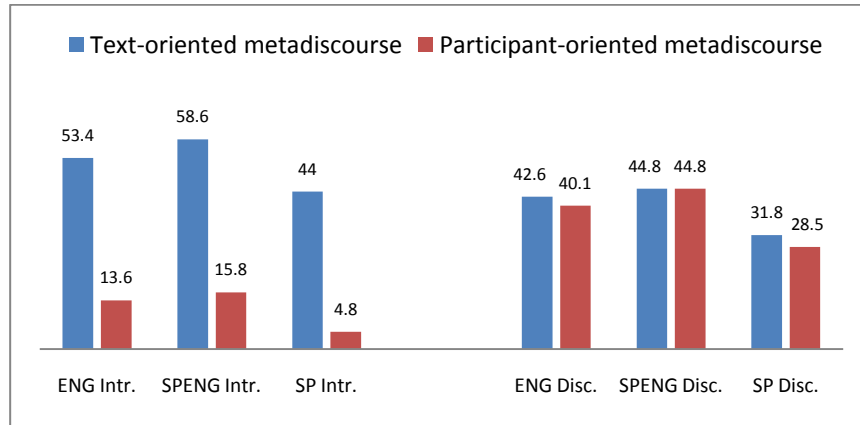


Figure 1. Average frequencies of metadiscourse types (F per 10,000 words)

Across cultural contexts (ENG and SPENG), text-oriented metadiscourse scored almost similar average frequencies in both sections. The same happened in Discussions, where participant-oriented metadiscourse, with a very timid presence in ENG and SPENG Introductions, is much more frequent in these two sets of texts. Across languages, both text- and participant-oriented metadiscourse scored slightly higher in SPENG than in SP Introductions and Discussions. The relatively close resemblance of the three sets of texts regarding the presence of metadiscourse may corroborate the notion that medical writers adhere to standardised conventions when writing these RA sections. As described below, the identification of micro-level discourse functions in each section revealed further similarities across the three subcorpora but also hinted at some culture- and language-specific preferences.

### 3.1 Metadiscourse in Introductions

As Fig. 2 below shows, the most salient text-oriented function in Introductions was ‘introducing the topic’—also glossed as “purposive announcements” (Swales 2004: 231). These units represented almost 40% of all the text-oriented units in ENG and SPENG and 50% in SP Introductions. Introductions also included ‘defining’, ‘adding’ and ‘arguing’ functions, although with lower average frequencies. The remaining functions—‘summarising’, ‘exemplifying’ and ‘reminding’—showed very low frequencies across the three subcorpora.

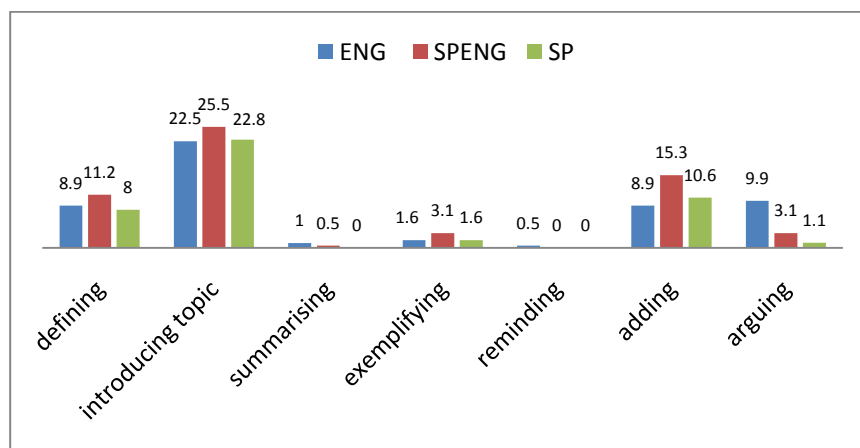


Figure 2. Text-oriented units in Introductions (F per 10,000 words)

Text-oriented functions tend to be distributed across the CARS model as follows. ‘Defining’ units initiate Move 1 and help writers explicitly characterise those key concepts that they are going to deal with in the forthcoming text (e.g. *AML is a heterogeneous collection; HL are clonal myeloproliferative disorders; la eritropoyetina es una hormona [x is a hormone]*). Having established their research territory, writers support arguments through ‘adding’ units that indicate a research gap, raise a research question or extend a previous finding, thereby constructing Move 2, ‘Creating the research niche’ (e.g. *In addition, protein S displays; In addition, recent data have demonstrated; Esta asociación es además [This association is also]*). Occasionally, authors claim centrality of new knowledge through ‘arguing’ units, which occur before (when authors refer to their own previous research) or after the ‘introducing the topic’ statement in Move 3 (e.g. *We demonstrated that; Because we reasoned that; Este estudio es la primera prueba que demuestra [This study is the first proof that demonstrates]*). In Move 3, writers occupy their research niche by ‘introducing the topic’ units, by this means complying with the Uniform Requirements specification that Introductions “should state clearly the objectives of the work” in the last paragraph of this section. Through purposive announcements (e.g. *[W]e report the characterisation of; [I]n the present report we sought to; [E]l objetivo de esta investigación consistió [The aim of this research was]*),



the three groups of writers show concern with the explicit signposting of research objectives for their readers.

Across cultural contexts, similar lexicogrammatical patterns for ‘introducing the topic’ reveal a close resemblance between ENG and SPENG. These two groups of writers convey, at times, personal metadiscourse (through *we*-subject patterns) and, at other times, impersonal metadiscourse (through passives and inanimate subject constructions)—e.g. *here we report on; in the current study we show that; x are reported herein; [T]he purpose of the present study was*. In SP, however, more than 70% of the expressions in ‘introducing the topic’ are passive constructions and inanimate subject patterns (*En este trabajo se presentan los resultados [In this work results are presented]; el presente estudio pretende determinar [the present study seeks to determine]*). These impersonal realisations of metadiscourse in SP may instantiate the impersonal style characteristic of Spanish academic writing (cf. Montolío 1999; Cassany 2002).

Both ‘arguing’ and ‘adding’ functions also hint at culture- and language-specific preferences. Compared to the other functions, ‘arguing’ is far more frequent in ENG (almost 20% of the total text-oriented metadiscourse units) than in SPENG and SP (less than 5% in the two subcorpora). The ENG scholars occupy the research niche and claim centrality through both personal and impersonal ‘arguing’ units (e.g. *[W]e propose that; our data indicates*). Even if this function is scarce in SPENG, these writers seem to prefer personal rather than impersonal ‘arguing’ statements (the former representing more than 80% of the total number of ‘arguing’ units), possibly to achieve greater authorial visibility at this point in the text. Lack of arguing in the SP Introductions (only 2 instances) could result from the fact that writing locally obviously involves less competition and need for promotionism than writing internationally.

When creating a research space, SPENG and SP writers tend to be more ‘adders’ than ‘arguers’ than their ENG counterparts (almost 25% of the total participant occurrences in SPENG and SP vs. 15% in ENG). Further, as illustrated below, the ENG scholars show a very linear textual development. They first ‘argue’ in order to claim centrality of information; then, they explicitly refer to the research niche and finally occupy the niche by announcing the purpose of the paper. The SPENG scholars first create their research niche through restrictive markers

(*however, ...*); they then ‘digress’ and emphasise the existence of a research niche by adding reasons supporting the need for enquiring into this niche and finally occupy the niche. Similarly, Move 2 in the SP Introductions is abundant in concessive and reason/result clauses accompanied by ‘adding’ units through which writers make their arguments stronger when creating the niche. This convoluted textual development is also a typical feature of the Spanish intellectual style (cf. Montolío 1999, Cassany 2002):

(1) *We propose that MRI is an important adjunct in staging tumours prior to conservative surgery. However, there are few studies in the literature reporting the use of MRI in staging penile neoplasms [8-13]; the studies are limited by small patient numbers. The aims of this study were [...]* (ENG31)

(2) *However, most of the available data arise from patients who underwent an allo-SCT using BM as the source of hematopoietic stem cells, while information on patients receiving peripheral blood (PB) stem cell support or reduced intensity conditioning regimens (allo-RIC) is scanty. In addition, in previously published studies the control group was based on randomly selected healthy individuals, but to our knowledge there is no paired study that specifically compares [...]. To specifically address this issue, we analyzed [...]* (SPENG16)

(3) *Aunque [although] el hemocultivo se considera la base para el diagnóstico de la bacteriemia, el valor de los hemocultivos en pacientes en que se sospecha bacteriemia es cuestionable, debido a que [due to the fact that] [...]. Además [In addition], los resultados de los hemocultivos pueden no tener ningún impacto en el tratamiento o, incluso, llevar a un tratamiento inapropiado. A pesar de estas limitaciones, parece que el uso de hemocultivos puede llegar a ser excesivo [Regardless of these limitations, it appears that the use of hemocultures can become excessive] en los pacientes adultos hospitalizados. El objetivo de este estudio es determinar [the aim of this study is to determine] [...]* (SP17)

Compared to text-oriented metadiscourse, participant-oriented functions in Introductions were relatively scarce in the three subcorpora—none of them showing average frequencies above 10.0 (Figure 3). ‘Anticipating readers’ reactions’ and ‘aligning with readers’ were the most common functions, particularly in ENG and SPENG. The former function represents 50% of the total participant-oriented units in ENG and SPENG, and 30% in SP. ‘Aligning with readers’ amounted to 50% of the total participant-oriented occurrences in SP and almost 40% in ENG and SPENG. The highest frequencies of ‘aligning with readers’ and, above all, of ‘anticipating readers’ reactions’ units in SPENG might indicate

these writers' greater concern with interacting with the international audience than with the national readership.

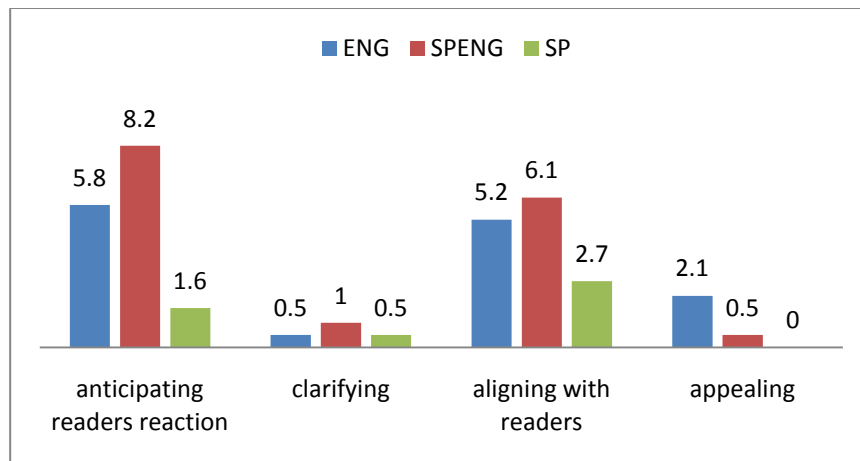


Figure 3. Participant-oriented units in Introductions (F per 10,000 words)

The three groups of writers align with readers when establishing their research territory (Move 1), in other words, they presuppose the readers' agreement and appeal to their shared background knowledge. They align with readers through either inclusive-*we* pronouns or oblique *we*-forms (e.g. *Our knowledge of their specific effect in ALL has been; [...] recently been made in our knowledge of; De todos son conocidas/[We all know that]*). Despite these shared linguistic forms, this function amounts to 20% of the total participant-oriented units in ENG and SPENG, while in SP they represent more than 50%, suggesting that the Spanish writers establish a more collegial relationship with a national-based audience of practitioners than with the international audience.

'Anticipating readers' reaction' units tend to occur in the 'creating their research niche' (Move 2) of the three sets of Introductions. Writers seem to prefer anticipatory *it*-patterns to express limitations or shortcomings of previous work or to establish initial hypotheses in a cautious way. Comparative percentages across functions indicate that SPENG writers use 'anticipating readers' reactions' units more often than the ENG and SP writers do (50% vs. 40% and 30% in ENG and SP respectively), suggesting a more deferential positioning towards the

international community of experts when seeking acceptance of new knowledge claims. Further, as exemplified below, these discourse units combine with probability modals, probability adverbs, shields and epistemic lexical verbs that help writers mitigate their discourse before occupying their research niche:

(4) The successful application of the novel nonmyeloablative bone marrow transplantation scheme for establishing stable mixed chimerism in normal dogs and correcting clinical symptoms of PK deficiency, leukocyte adhesion deficiency, and GT led us to speculate that it might be possible to induce donor-specific tolerance. (ENG18)

(5) It was also reported that some men with hypogonadism and ED who do not respond to PDE-5 inhibitors might respond to an androgenic supplement [7]. Therefore, although many points need to be clarified, *it seems clear that testosterone is important* in the erection mechanism. In the present study we analysed the total and free testosterone levels in a group of men with ED (SPENG34)

(6) *Parece razonable realizar estudios [it seems reasonable to carry out studies]* de evaluación económica en problemas de salud que supongan costes importantes y tengan diferentes alternativas de tratamiento. (SP21)

The cross-cultural comparison also showed that, at the very end of Move 2, ENG writers appeal to readers in an impersonal way with the aim of entreating them to share similar lines of thought (e.g. *it is therefore important to understand the mechanisms; it will be important to definitively identify*). ‘Appealing to readers’ was very rare in SPENG (3% of the total participant-oriented units) and showed no occurrences in the SP Introductions, which might represent a culture-specific strategy of the Anglophone-based writers before they occupy the research niche at the end of the Introduction.

No participant-oriented metadiscourse was found in Move 3 of Introductions, which indicates that the role of metadiscourse in this particular move is entirely text-oriented.

### 3.2 Metadiscourse in Discussions

Discussions showed a broader range of text-oriented metadiscourse functions than Introductions, although their average frequencies were relatively low (Fig. 4). ‘Arguing’ and ‘adding’ were the two most common functions in ENG and SPENG, while ‘focusing’, ‘arguing’ and ‘concluding’ scored the highest average frequencies of the SP subcorpus.

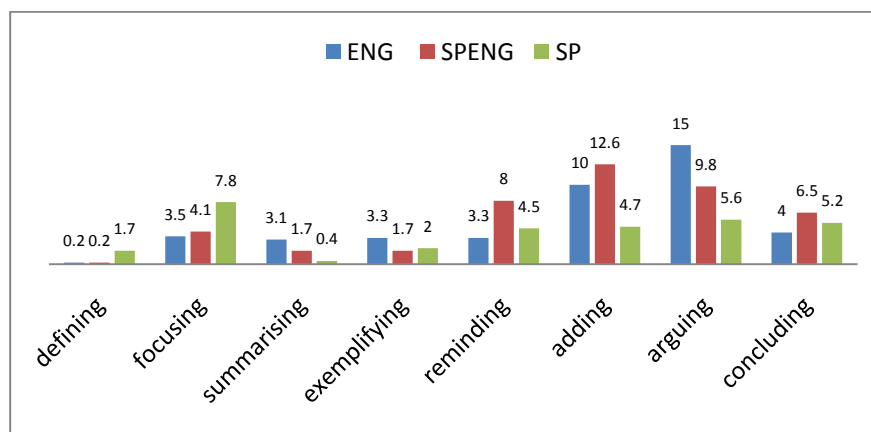


Figure 4. Text-oriented units in Discussions (F per 10,000 words)

As also happened in Introductions, text-oriented functions were distributed very similarly in the three subcorpora. In Move 1, ‘Highlighting research outcomes’, ‘defining’ units were scarce and functioned as opening sentences reminding readers of the main topic of the text (*Haematuria is a known late complication; occlusion of the postcavernous subalbugineal veins is; Se define como categoría de [x is defined as a category of]*). Other functions occurring in this move were ‘reminding’, ‘summarising’ significant findings and, very occasionally, ‘arguing’ in favour of them. By ‘reminding’—more common in SPENG (almost 20%) than in SP and ENG (14% and 7% respectively)—the three groups of writers re-describe central findings. In ENG, reminders are expressed by inanimate subjects and are often accompanied by evaluation (e.g. *The PIA assay described here [...] offers a unique advantage; Data presented in this article provide the first analysis*). In SPENG, reminders contain exclusive *we*-pronouns collocating with research process verbs referring back to information already stated in the RA; evaluation rarely occurs (e.g. *In this report, we have studied; As shown here, we detected the presence of; we showed here that Bcl- xL is up-regulated*). The SP writers use ‘reminders’ not only to restate the purpose of the paper but also to refer to information that has been previously mentioned in the RA. When SP writers remind readers of previous textual material, they opt for impersonal metadiscourse expressions, namely, passive constructions (e.g. *Como se ha comentado*

*anteriormente, también se ha descrito* [As previously reported, x has also been described]). Following ‘reminding’ units, the SP writers often introduce ‘arguing’ statements containing exclusive *we*-pronoun patterns and authorial evaluation (e.g. *De todo lo expuesto en Resultados* [from everything reported in the Results], *deducimos que existe una influencia evidente* [we deduce that there is a clear influence]). Along with ‘reminding’, ‘summarising’ units are frequently followed by evaluative statements in ENG (e.g. *In summary, the assay that we present here is of clinical significance*) and sporadically in SPENG (e.g. *In summary, in the present study we show the presence; In summary, our findings have provided substantial assurance*). No summarising units appeared in Move 1 of the SP Discussions.

In Move 2, where specific research outcomes are explained and justified, the three groups of writers show very similar textual developments as they construct their discourse by exemplifying, focusing, adding and, above all, arguing. ‘Exemplifying’ units (e.g. *as an example, for example, such as*) help writers make information more specific when explaining outcomes. Through ‘focusing’ (e.g. *first, second, finally*), most common in SP (25% of the total participant-oriented units), writers guide readers through the explanation of research outcomes and provide reasons for justifying specific outcomes. As for ‘adding’ and ‘arguing’, the three groups of writers use similar additive markers (*moreover, additionally, furthermore, in addition, also* and the Spanish equivalents *además* and *también*) to justify the validity of findings (e.g. *Furthermore, we showed that; Moreover, no differences were found; Asimismo, merece destacar* [Moreover, it should be noted]). As happened in Introductions, the ENG writers tend to be ‘arguers’ (35% of the total participant-oriented units vs. approximately 20% in SPENG and SP), while SPENG writers seem to be ‘adders’ (almost 30% vs. 20% and 15% in ENG and SP respectively). Both ‘adding’ and ‘arguing’ help writers consolidate their research space, particularly in the texts published in international journals. In these two sets of Discussions, ‘arguing’ is mainly conveyed by impersonal metadiscourse expressions, namely inanimate subject constructions (e.g. *experiments presented here demonstrate; [T]he present study confirms*); the use of personal metadiscourse expressions such as exclusive *we*-pronoun patterns is very scarce (e.g. *We think that; We now advocate*). In both subcorpora, arguing units are unmodalised and at times accompanied by evaluation

(e.g. *Nonetheless, our data argue that some threshold amount of cAMP formation is necessary; Our results not only provide further support for this hypothesis but also establish a potential mechanism*). In SP Discussions, ‘arguing’ units are expressed by inanimate subject patterns—as in ENG and SPENG—but there is also a noticeable preference for anticipatory *it*-patterns (e.g. *Se puede afirmar que [it can be affirmed that]*). As opposed to ENG and SPENG, these preferred ‘arguing’ patterns in SP are accompanied by modal markers and abundant subordination, again instantiating the impersonal and digressive style characteristic of Spanish academic prose (e.g. *Se podría argüir que el mayor porcentaje de ADVP en el primer período podría estar sesgado [it might be argued that the highest ADVP percentage in the first period might be limited to]*).

In Move 3, writers summarise their main research outcome(s) and provide conclusions. ‘Summarising’ units in ENG introduce writers’ evaluative statements on the new knowledge claims (e.g. *In summary, the PIA assay is a useful surrogate; In summary, the assay that we present here is of clinical importance*). In SPENG, this function often introduces authorial evaluation (e.g. *In summary, our findings have provided substantial assurance; In summary, PET/CT is an accurate imaging tool*). Noticeably, whereas summarising units in Move 1 of ENG and SPENG lacked evaluation, authors frequently boost their research findings through these units in Move 3. Only one ‘summarising’ unit followed by a modalised clause occurred in SP (*Podemos terminar resumiendo que x puede curar [We can end by summarising that x can cure]*).

‘Concluding’ units in ENG are expressed by exclusive *we*-pronoun references and inanimate subject constructions. At times, they strictly refer to propositional material while at other times they introduce authors’ evaluative remarks (e.g. *Therefore, we conclude that NIC does not enhance; In conclusion, this nonviral method ... is clearly capable of*). In concluding, SPENG writers also align with readers through impersonal metadiscourse expressions (e.g. *In conclusion, the results presented here suggest; In conclusion, our findings suggest that*). ‘Concluding’ units in SP help writers explicitly acknowledge limitations of research findings and convey deferential attitudes by hedging the discourse (e.g. *En conclusión, a pesar de que nuestra tasa de extracción se ha situado en niveles ligeramente mejores, todavía parece que puede*

*haber margen para mejorar nuestros resultados [In conclusion, although our extraction rates are slightly better there still seems to be some margin for improving our results]).* Overall, the textual development in Move 3 is personal in ENG, tentative in SPENG and very impersonal in SP.

Participant-oriented metadiscourse takes a more prominent role in Discussions than in Introductions. Compared to the other functions, ‘anticipating the reader’s reaction’ is the most frequent function in this section (Figure 5). Across subcorpora, SPENG writers seem to be most aware of possible readers’ counterargumentation when seeking acceptance, followed by ENG. Scoring a lower average frequency in this function, the SP Discussions seem to involve less of a threat towards readers’ disagreement on the part of the writers. The remaining functions—‘clarifying’, ‘aligning with readers’ and ‘appealing to readers’—scored very low frequencies (below 10.0) in the three subcorpora.

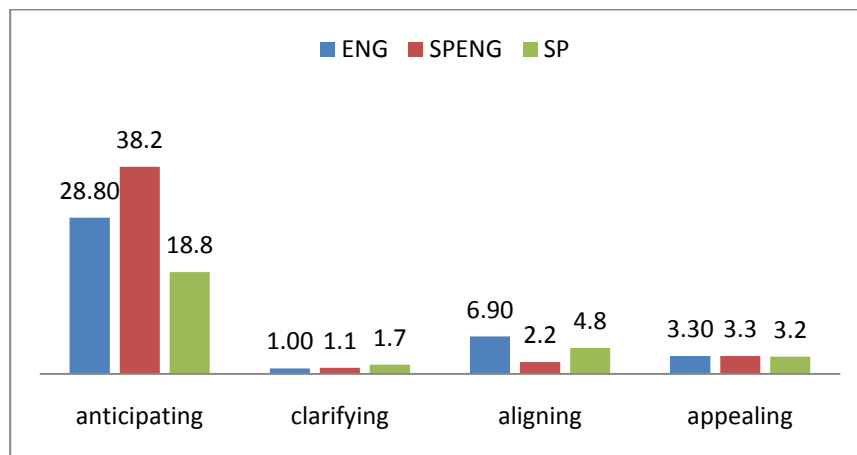


Figure 5. Participant-oriented units in Discussions (F per 10,000 words)

In the three sets of Discussions, ‘anticipating readers’ reactions’ units occur towards the end of Move 1 and in Move 2, when writers highlight the new or important aspects of the study and interpret them in detail in order to advocate the “noteworthiness of the research” (Berkenkotter & Huckin 1995: 43). As stated above, this function is much more recurrent



in the two sets of Discussions written in English, particularly those written by the Spanish scholars (representing 85% and 70% of the total occurrences of participant-oriented units in SPENG and ENG respectively). Impersonal inanimate subject patterns represent 90-95% of the total instances in the three subcorpora and help writers introduce interpretation of findings.

'Appealing to readers' units, very scarce in this section, are found towards the end of the first move, when authors make judgements about the most significant findings. Writers' positioning when appealing to readers is again very impersonal in the three subcorpora (e.g. *One could also question whether a patient with microscopic hematuria should never undergo cystography; facts that should be discussed; La primera de las consideraciones debería hacerse respecto [The first consideration should be made regarding]*).

Despite these similarities, some culture- and language-specific preferences with regard to text development can be noted regarding 'anticipating the reader's reaction'. On the one hand, it is only in ENG that these findings are positively evaluated (e.g. *Collectively, these studies suggest that CDDO may have significant clinical activity; this new method should prove useful*), while in SPENG and ENG interpretation strictly refers to research outcomes (e.g. *these observations suggest that; parecería lógico que [It would be logical that]*). This cross-cultural variation might mean that Spanish writers take more guarded stances when selling the value of their research to the international readership.

On the other hand, this function involves different textual developments across subcorpora. As seen in the examples below, ENG writers evaluate research findings at the beginning of Move 1 (e.g. *provide additional evidence; thereby supporting*). Then, they anticipate readers' reactions when recommending how to proceed with limitations (e.g. *[A]lthough additional confirmation of this finding is necessary, it might be reasonable to*). Finally, they boost their findings through overt evaluation (*data provide compelling evidence supporting; particularly useful*). The SPENG scholars consistently become impersonal and use 'anticipating readers' reactions' (e.g. *Therefore, our findings should be confirmed prospectively*) in highly modalised statements through which writers explicitly acknowledge limitations in a very detailed way. Similarly, the SP scholars cautiously anticipate readers' reactions when

referring to limitations and construct their discourse upon cause/effect interpropositional relationships (e.g. *hay que tener en cuenta que los resultados se limitan a [it should be noted that the results are limited to] ... por tanto, deben extrapolarse con cautela [therefore they should be extrapolated with cautiousness]*).

(7) Our results have broad and patient-specific implications. The discriminative abilities [...] provide additional evidence of their validity, thereby supporting their use in this patient population. [...]. *Although additional confirmation of this finding is necessary, it might be reasonable to eliminate this line of questioning as a part of the postoperative assessment. Nonetheless, in aggregate, these data provide compelling evidence supporting [...]* These measures could be particularly useful [...] (ENG41)

(8) Probably the main contribution of our report is that we have described the evolution of bone loss and the osteoporosis rate throughout a long period of ADT in a large number of patients. However our study was limited by being cross-sectional, retrospective, and nonrandomized. *Therefore, our findings should be confirmed prospectively.* As we noted, patient age was significantly different across the treatment subgroups. This brings up a significant point regarding the difficulty of interpreting our results. Moreover, correcting for age or other variables known to affect BMD, such as body mass index, nutritional status, race, alcohol intake, and smoking, *should be done in a prospective study.* (SPENG41)

(9) *Nuestros resultados indican [our results indicate]* también la existencia de una relación entre anemia e insuficiencia renal en pacientes con ICC. En el grupo de pacientes con anemia los valores plasmáticos de creatinina fueron mayores, aunque sin alcanzar la significación estadística, mientras que la TFG fue significativamente menor. Respecto a las limitaciones de nuestro estudio, *hay que tener en cuenta que los resultados se limitan a [it should be noted that the results are limited to]* una serie de pacientes hospitalizados con ICC en un servicio de cardiología; *por tanto, deben extrapolarse con cautela [therefore they should be extrapolated with cautiousness]* al grupo global de pacientes con este síndrome. (SP15)

As mentioned above, ‘anticipating readers’ reactions’ also appears in Move 2 together with other functions such as ‘clarifying’ and ‘appealing to readers’. In the extracts below, clarifying again accompanies evaluation in ENG (e.g. *In other words, lack of selectivity (or “multitargeting”) may be important in...*), but not in SPENG and SP, where these units strictly perform a paraphrasing function (e.g. *In other words, opportunistic screening with PSA is performed; es decir, la carga genética se expresa [In other words, the genetic load is expressed]*).

As in Introductions, Move 3 is scarce in terms of participant-oriented metadiscourse, and is mostly occupied by text-oriented ‘concluding’ and ‘arguing’. Following ‘concluding’ units, ‘appealing to readers’ units might tentatively suggest similar discursual maneuvers across cultures and languages. In Move 3, after concluding and arguing, ENG writers align with readers through impersonal expressions (*it is clear that*) to refer to implications of research outcomes. Then, they appeal to readers by suggesting future lines of action that indirectly boost their own research results. In contrast, the SPENG writers provide arguments supporting their research but tend to hedge their discourse considerably. They also appeal to readers through oblique *we*-pronoun forms but refer to the implications of the new research in a vague manner. The SP writers appeal to readers when providing ways of advancing research and when involving themselves critically as regards how to further such research.

(10) *It is clear that* cyclic nucleotides are a commonality in the mechanism by which HbF is induced by three very diverse agents, HU, AZA, and SB. *Understanding the role of cAMP and cGMP may help elucidate* the mechanisms of pharmacologic induction of HbF, leading to more-efficacious and less-toxic alternatives for treating hemoglobinopathies. (ENG23)

(11) On the other hand, it has been shown that [...]. However, our data indicate that this pathway does not seem to predominate in the control of Bim expression in these cells, although it could undoubtedly contribute to the fine-tuning of the system. The present results have pathological implications that *can help us to understand* the different phenotypes of ALPS or of other autoimmune diseases. (SPENG6)

(12) *Los próximos años nos permitirán sopesar* [The next years will allow us to assess] los beneficios económicos y de reducción de toxicidad con los riesgos apuntados y establecer estrategias de tratamiento que pueden modificar la carga económica de la TARGA. [...] *En cualquier caso ninguna estrategia teórica de ahorro de costos será útil sin la dotación de medios* [In any case no theoretical strategy of cost saving will be useful without the necessary means]. (SP5)

#### 4. Discussion

The exploration of metadiscourse in Introduction and Discussion sections of research articles seems to confirm that academic prose is not simply information-oriented but also dialogic and interactive—in Swales’s (2004: 218) words, “richly persuasive rather than flatly expository”. Quantitative data has none the less shown that the amount of

metadiscourse material is very limited compared to the amount of propositional, expository material. The greater presence of text-oriented metadiscourse in Introductions and the balanced merging of text- and participant-oriented metadiscourse in Discussions have shown to be justified by the specific rhetorical purposes of these RA sections. Text-oriented metadiscourse in Introductions helps writers provide readers with textual signposts anticipating information organisation. Intertwining with text-oriented metadiscourse, participant-oriented metadiscourse in Discussion sections reveals writers' aim at highlighting the newsworthiness of new research in order to seek readers' acceptance of the new knowledge claims.

The three sets of texts have displayed relatively similar uses of micro-level discourse functions in each rhetorical section. While the text-oriented functions of 'introducing the topic', 'adding', and 'defining' were the most common functions in Introductions, 'arguing' and 'adding' were most prominent in Discussions. All participant-oriented functions found in Introductions scored average frequencies lower than 10.0 except for 'anticipating readers' reactions', which was consistently higher in the three subcorpora. Discussions showed a broader range of participant-oriented functions than Introductions, with 'arguing' and 'adding' again scoring highest—these two functions serving writers to emphasise the new and important aspects of the study and strengthen their claims. This common use of metadiscourse in the three subcorpora may corroborate the existence of well-established rhetorical goals for these RA sections—hence, Introductions involve great persuasive efforts to get readers interested in the paper and Discussions involve greater persuasive efforts to get readers' acceptance of the new knowledge claims.

Taking the non-integrative approach to metadiscourse, the present study has identified the correlation of micro-level metadiscourse discourse functions with specific section moves and tentatively mapped the sequencing of these functions throughout each section in order to make propositional content "coherent, intelligible and persuasive to a particular audience" (Hyland 2005: 39). In Introductions, the three groups of scholars mainly rely on text-oriented metadiscourse to construct their research space. First, they define key concepts and align with readers when they set the research territory. Then, they build arguments, and add ideas and reasons to support those arguments. In

doing so, they anticipate readers' reactions. Towards the end of the Introduction, writers tend to align with readers before introducing the statement of purpose and set suitable grounds for convincing audiences of the significance of the new research claims. Purposive announcements generally close this RA section in the three subcorpora.

A more complex merging of text- and participant-oriented functions across moves has been shown to occur in Discussions with the aim of assisting readers and interacting with them. The three groups of writers occasionally define key concepts but rather start this section by 'reminding' readers of the communicative purpose of the study. Then, they cautiously highlight their main research outcomes by means of 'anticipating readers' reactions' units. As the discourse evolves, writers explain specific outcomes by focusing, exemplifying, clarifying and, above all, adding and arguing. When arguing, they anticipate readers' reaction (as they did in Introductions) and it is only at the end of Move 2 that some 'appealing to readers' units occur. In the last move, they align with readers when summarising research outcomes and finally conclude, which is often accompanied by 'anticipating readers' reactions' statements serving face-saving goals. In sum, this shared use of text- and participant-oriented metadiscourse indicates that the three groups of writers seem to be adhering to the established rhetorical conventions—i.e. the uniform requirements—for writing these RA sections.

However, apart from these common metadiscoursal strategies for building dialogic spaces in Introductions and Discussions, the exploration of metadiscourse has brought to the surface both culture- and language-specific lexicogrammatical realisations of metadiscourse units, different preferences for personal/impersonal metadiscourse as well as preferred textual developments in the construction of dialogism through metadiscourse. In Move 1 of Introductions, ENG and SPENG writers aligned with readers through inclusive *we*-pronouns while the SP writers presupposed agreement at this point. In Move 2, ENG and SPENG writers argued through both personal and impersonal expressions while the SP writers provided no arguments in this move. When arguing and adding, both ENG and SPENG writers anticipated readers' reaction more than the Spanish scholars did when writing locally, which suggests writers' greater efforts in conveying the relevance of their research findings in a section in which "originality tends to be highly prized, competition tends to be fierce, and academic promotionalism and

boosterism are strong” (Swales 2004: 226). In addition, the scholars publishing internationally proved to be more reader-friendly than the SP scholars and included more metadiscourse expressions telling readers what the text is about in Move 3 of Introductions. The ‘introducing the topic’ function also indicated that both ENG and SPENG writers tend to prefer personal metadiscourse expressions (i.e., exclusive-*we* references serving self-promotional goals), whereas the SP authors consistently opt for impersonal metadiscourse units and expressed purposive announcements by means of inanimate subject constructions.

As for Discussion sections, ENG and SPENG authors summarised the main research findings in Move 1. Summarising was often used by these writers to introduce overt evaluation. In Move 2, these writers hardly employed focusing units, unlike the SP scholars, and mainly concentrated their rhetorical efforts in providing arguments. Arguing in ENG and SPENG was expressed by means of impersonal inanimate subjects and was embedded in non-modalised and evaluative statements that helped writers make more forceful claims. Conversely, ‘arguing’ units were modalised in the SP Discussions—modalisation being a common resource in Spanish academic prose as a face-saving strategy. In Move 3, both ENG and SPENG writers used ‘summarising’ units again and were both assertive and evaluative, particularly the scholars from the Anglophone context. Further similarities were also traced when comparing ‘anticipating readers’ reactions’ units in both ENG and SPENG Discussions. These two groups of writers took very detached and cautious stances when ‘selling’ the value of the new knowledge to the international audience.

These common rhetorical maneuvers in ENG and SPENG might indicate that Spanish scholars publishing internationally tend to adopt similar rhetorical strategies to those used by Anglophone writers for “alerting readers to the author’s perspective towards both the propositional information and the readers themselves” (Hyland 1998: 443). Firstly, the existence of highly standardised rules for writing medical manuscripts may, in part, be responsible for the discursive resemblance of the ENG and the SPENG texts. Also, according to data gathered from a recent survey addressed to Spanish-based scholars (Ferguson et al. forthcoming), broad exposure to reading Anglophone journals encourages scholars to adopt the established linguistic and rhetorical conventions. Some of these scholars even commented that they

take expressions and set phrases from published manuscripts in English and use them to sort out their ideas in an attempt to make their papers acceptable for publication—a practice among Spanish scientists which was reported by St. John (1987) more than two decades ago. Secondly, institutional factors having to do with academic promotion, competition and prestige might also explain the pressure on scholars to publish internationally, particularly if we consider that the Spanish Accreditation System grants more credit to publications in English-medium high-impact journals than in Spanish journals (Pérez-Llantada 2007). The “publish (in English) or perish” quest in Spanish academia might thus explain why these scholars are eager to adopt the dominant rhetorical practices of Anglophone scholars in order to make their papers acceptable in high-impact journals and hence their research visible in the international context.

By “accommodating pragmatically to prevailing patterns” (Ferguson 2007: 9), when the Spanish scholars change their language of publication, they have shown to abandon the discursual practices that they regularly use for communicating research to local practitioners. As instantiated in the analysis above, the linguistic resources for the expression of metadiscourse functions as well as the preferred uses of personal/impersonal metadiscourse at certain points in the texts used by SPENG and ENG scholars alike might be regarded as a clear indicator of the gradual homogenisation and standardisation of writing processes in academic English (cf. Mauranen et al, forthcoming).

However, the comparative analysis of metadiscourse in SPENG and SP has allowed us to identify some culture-specific linguistic traits in the two sets of texts written by the Spanish scholars. The comparison of ‘arguing’ units across the two cultural contexts and languages showed similar textual developments in Move 2 of the SPENG and SP Introductions. While the ENG writers seemed to prefer a straightforward style when arguing, the Spanish authors, when writing both in English and in Spanish, supported their arguments through ‘adding’ units—this results in the construction of a more elaborate and digressive discourse. The same occurred with ‘anticipating readers’ reactions’ units at the end of this move, embedded within an elaborate and digressive ongoing discourse in SPENG, in stark contrast to the straightforward style of ENG writers.

Other common strategies in SPENG and SP also recurred in Discussion sections. In Move 1 of Discussions the SPENG authors used impersonal metadiscourse when reminding readers of textual material and, unlike the ENG writers, avoided overt evaluation in these units. The SP writers consistently used impersonal passive constructions, though at times they included some evaluative statements. ‘Anticipating readers’ reactions’ units in this first move displayed similar linguistic forms in ENG and SPENG, but in the latter set of texts these forms were modalised with the aim of conveying deferential attitudes. Along similar lines, the SP writers anticipated readers’ reaction by means of impersonal and highly modalised statements. In Move 2 of Discussions, both SPENG and SP scholars showed a greater preference for ‘adding’ units compared to the textual development of the scholars from the Anglophone context. In marked contrast to the ENG writers’ straightforward style, this preference for adding reasons when building arguments contributed to an overall more elaborate and digressive discourse in the two sets of Discussions written by the Spanish writers. In Move 3, SPENG and SP writers again showed similar rhetorical preferences when concluding. Whereas the ENG scholars used expressions of involvement to provide conclusions, the Spanish writers—both writing in English and in Spanish—opt for impersonal metadiscourse units (e.g. inanimate subject patterns) in combination with abundant modalisation and clausal elaboration, again instantiating the digressive argumentative style of Spanish academic rhetoric.

These overall modalised discourses, impersonal positionings and common strategies for textual developments in the SPENG and SP subcorpora might be indicative that the Spanish scholars still retain part of their culture-specific intellectual style when they write in English as an additional language. In particular, the shared linguistic realisations of some metadiscourse functions and their specific functional work of metadiscourse for developing discourse in the Spanish texts in both L1 and L2 seem to bring to the fore the hybridisation phenomenon that is gradually being perceived in contemporary academic prose—a phenomenon which involves the mixing of local rhetorical practices with the dominant Anglophone discursal and rhetorical models (cf. Mauranen et al. forthcoming). In fact, the steady adoption of the standardised norms established for academic English writing has been claimed to involve the gradual loss of rhetorical traditions, at least in



Romance languages such as Portuguese, Italian and Spanish (cf. Bennet 2007; Giannoni 2008; Pérez-Llantada forthcoming).

If we are to advocate cultural diversity in an English-medium academic and research world, the hybrid use of metadiscourse features in the SPENG texts described above would make it advisable to sensitise both native and non-native English scholars, journal editors and language advisors towards the standard vs. other multicultural traits of academic writing. Further, it would be important to enquire into the potential language disadvantages that culture-specific intellectual styles and, more specifically, preferred ways of guiding and interacting readers across cultures may affect the acceptance of non-native English scholars' contributions to international English-medium publications. Indeed, future research is needed to lead the debate on the extent to which non-native scholars should adopt new rhetorical conventions—the use of metadiscourse being but one of such conventions—when preparing their papers for international English-medium publications, or rather preserve their own culture-specific rhetorical traditions.

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