A CONTRASTIVE GENRE-BASED APPROACH TO THE RHETORICAL STRUCTURE AND USE OF INTERACTIONAL METADISCOURSE IN THE RESULTS AND DISCUSSION SECTION OF *FOOD SCIENCE & TECHNOLOGY* PAPERS

UNA APROXIMACIÓN CONTRASTIVA A LA ESTRUCTURA RETÓRICA Y EL USO DE ELEMENTOS METADISCURSIVOS INTERPERSONALES EN LA SECCIÓN DE RESULTADOS Y DISCUSIÓN DE ARTÍCULOS DE INVESTIGACIÓN EN LA DISCIPLINA DE *CIENCIA Y TECNOLOGÍA DE LOS ALIMENTOS*

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Abstract

This paper describes a genre-based exploration of the rhetorical structure and use of interpersonal metadiscourse features in the Results and Discussion sections of 32 research articles written in English from the discipline of Food Science & Technology. The rhetorical moves and steps enacted in this section are first looked into. Following this, I have quantitatively assessed the researchers' use of some interactional metadiscoursal units, drawing on Hyland's framework (2005a, 2005b). As the corpus of analysis is made up of 16 papers authored by English L1 researchers, while another 16 have been written by Spanish researchers with English as their L2, it is also my aim to account for any differences with regard to the presence and frequency of use of the different moves/steps identified, and of the interactional metadiscoursal features selected for analysis in each of the two sub-corpora. Possible cross-cultural variations identified in the L1 and L2 corpus will be discussed. Findings indicate that results are presented and discussed mainly through obligatory Moves 2 and 3, and, to a lesser extent, Move 1. This exploratory approach has shown statistically significant differences for the categories of hedges and authorial presence, making them the strategies most often deployed by researchers with English as their L1.

Keywords: results and discussion section, metadiscourse, stance, interpersonal, rhetorical structure, L1 and L2 texts.

Resumen

En este artículo se analiza la estructura retórica de la sección denominada Resultados y Conclusiones de un corpus de artículos científicos pertenecientes a la disciplina de la Ciencia y la Tecnología de los Alimentos. Asimismo, se analizan de forma cuantitativa las diferentes categorías metadiscursivas empleadas en esta sección siguiendo el modelo de Hyland (2005a, 2005b) sobre metadiscurso interpersonal y posicionamiento. Puesto que el corpus está compuesto por 16 artículos escritos por investigadores cuya lengua materna es el inglés y otros 16 escritos por españoles, se pretende establecer si existe alguna diferencia en la presencia y/o frecuencia del uso de los diferentes movimientos que componen el patrón retórico de esta sección, o en el uso que los investigadores hacen de los elementos metadiscursivos analizados. Tras el análisis se ha observado que los resultados se presentan y comentan mediante dos movimientos obligatorios, el 2 y el 3, y en menor medida a través del 1. En cuanto al uso de elementos metadiscursivos, se han encontrado diferencias estadísticamente significativas en el uso de mitigadores y en el grado en el que los autores se hacen presentes, estrategias ambas que utilizan con mayor frecuencia los hablantes cuya lengua materna es el inglés.

Palabras clave: sección de resultados y conclusiones, metadiscurso, posicionamiento, interpersonal, patrón retórico, textos escritos en inglés como L1 o L2.

1. Introduction

Nowadays, it is indisputable that the research article (henceforth RA) is the academic genre *par excellence* for researchers who wish to communicate new knowledge, make their research visible (Swales 1990; Hyland 2000; Salager-Meyer 2001) and achieve professional advancement. To facilitate this, researchers need to be familiar with the rhetorical structure of the different parts that make up a RA and with the use of particular interpersonal features which will help them forward their views and persuade their interlocutors of the validity of their research within the process of knowledge construction. In the last three decades, research on the linguistic and structural features of RAs has been pervasive, with a special focus on the moves that make up its different sections. The starting point for this was the view that the RA is not a monolithic genre (Swales 2004), given that the different sections that integrate it possess their own specific linguistic and rhetorical configuration. To illustrate this point, the writing of sections such as the introduction and discussion/conclusion have been perceived as challenging for

researchers who do not have English as their first language (cf. Knorr-Cetina 1981; Gilbert and Mulkay 1984) as they have been seen as "potentially critical to the acceptance or rejection of their articles, whatever the merits of their actual findings might be" (Flowerdew 1999: 259).

However, being aware of the rhetorical organization of the RA needs to be accompanied by a mastery of the English language, as the writing conventions in English for Academic Purposes and English for Specific Purposes "have been affected by the dominance of that language across an array of fields and settings" (McIntosh et al. 2017: 12). In other words, English not only acquired the status of an international language for science and technology long ago (cf. Johns and Dudley-Evans 1991; Grabe and Kaplan 1996) but has also managed to maintain this status.[1] This fact inevitably predisposes Spanish researchers to use English in an attempt to assure publication and a wider dissemination and visibility of their research (cf. Curry and Lillis 2004 and Pérez-Llantada et al. 2011), while clearly leaving them at a disadvantage (cf. Mur-Dueñas 2012). This topic has been largely dealt with within the field of contrastive academic rhetoric (cf. Connor 1996), nowadays referred to as intercultural rhetoric: "the study of written discourse between and among individuals with different cultural backgrounds" (Connor 2011: 1).

As a consequence of this increasing number of non-native researchers, as well as of the widely held belief that rhetoric and writing styles are culturally embedded, we have witnessed the growth of a prolific body of intercultural and cross-disciplinary research within the framework of intercultural rhetoric with a focus on the genre of the RA. The main objective of these studies has been to help other researchers to better grasp the way meaning is negotiated between writers and their audiences, as well as to help them to become familiar with the textual/rhetorical organisation of RAs.

Contrastive research on the schematic structure and the use of the discursive features that non-native English researchers deploy when writing their research papers for international journals has also been quite pervasive and has aimed at unveiling existing differences in the writing practices of researchers who belong to different cultural and linguistic backgrounds when writing in English as an L2. Likewise, with regard to Spanish and English, Lorés-Sanz (2011a, 2011b) has explored the use of the authorial voice in a corpus of RAs written by English L1 researchers, and by Spanish scholars writing in Spanish and English in the discipline of Business Management. Martínez (2005), in a similar vein, has compared the use of first person pronouns in the different sections of Biology RAs written by English L1 and L2 scholars. Mur-Dueñas (2009, 2012, 2016) has looked into how logical markers and topicalisers are employed in L1 (Spanish and English) and L2

(English), whereas Carciu (2009) carried out an intercultural study of first-person plural references in the field of Biomedicine as used by English and Spanish researchers writing in English. Murillo (2012) explored reformulation markers in Business Management from an intercultural perspective with English and Spanish L1 scholars, and Spanish researchers with English L2.

Despite this body of contrastive research, I know of no previous study that focuses on the rhetorical structure of the merged Results and Discussion sections of RAs or that assesses how interactional metadiscoursal features are deployed in the discipline of Food Science & Technology (henceforth, FSc&Tec) in L1/L2.[2] Hence, this study aims to first unveil the rhetorical use of moves/steps and their communicative functions to later assess the way researchers report and comment on empirical findings in the Results and Discussion section (henceforth R&D) by looking into their use of a series of interactional metadiscourse categories from a quantitative perspective. However, before moving onto the next section, several clarifications are in order.

First of all, the reason for conflating the study of the rhetorical structure of the R&D sections together with the metadiscoursive units that are employed in them stems from the fact that it is in these sections that the researchers' credibility and persona (Cherry 1988) are at stake. In other words, new findings need to be reported, justified, explained and contextualized within the wider scientific community, preferably in a tentative manner, and thus a lot of interpersonal effort is invested. On the other hand, even though studies on the R&D sections have normally focused on RAs which follow the IMRD section, it is very common to find RAs where both sections have coalesced. As Lin and Evans' (2011) research highlighted in their analysis of the generic structure of 433 empirical papers "IMRD is far from being the default option for organizing contemporary empirical RAs" (2011: 153). Hence, the discipline under analysis illustrates this trend quite well, as potential authors are explicitly urged to merge both sections into one.[3]

Secondly, considering that scientific publications in this discipline are exclusively produced and consumed in English (as attested in informal interviews with expert academics in the field), the approach taken here is of a contrastive nature, as researchers belong to two different cultural contexts, one involving L1 and the other L2. Thus, this article aims to add to the already abundant literature on English for Academic Purposes as well as to the field of intercultural rhetoric by shedding light on the academic practices which scholars engage in within a specific discipline.

More precisely, it is my ultimate aim to assess whether the similarities and/or differences in the frequency and use of the rhetorical moves/steps and of some interactional metadiscourse features stem from different rhetorical writing patterns

in both groups of researchers. In this vein, I will provide a preliminary template for the rhetorical structure of this section which could be deemed to be representative of the writing conventions in the field and which could prove useful especially for non-native writers, considering the growing demand for the instruction of non-native English speakers in the field of English for Academic Purposes (Hyland and Hamps-Lyons 2002). Likewise, I hope to unveil quantitative differences in the use of certain metadiscourse features as a persuasive tool in the establishment of an interactional relationship with the scientific audience.

2. Theoretical Background to the Study

In this section I will briefly outline the most relevant studies dealing with the organization and rhetorical analysis of the section entitled "Results and Discussion" to reveal the communicative functions or purposes of both sections in the different disciplines analysed (see Appendix I). Then, I will present Hyland's (2005a, 2005b) classification of interpersonal markers as key theoretical tenets upon which this paper rests.

2.1. Results and Discussion Sections

The RA authors in the discipline under analysis seem to have made a conscious choice to merge the Results and Discussion sections into one. Thus, the rhetorical structure deployed in these RAs is expected to incorporate several of the different rhetorical moves and steps found in both sections in previous studies. Due to space restrictions, a thorough revision of all the previous studies which have tackled the two sections under analysis is not feasible.

From a rhetorical point of view, the results section is the place "where writers choose to make their new knowledge claims through the presentation, explanation, and interpretation of numerical data" (Brett 1994: 48). There have been several studies exclusively devoted to the results section such as Brett's (1994), Williams' (1999), Swales and Feak's (1999), or Weissberg and Buker's (1990), while other studies have approached this section as part of an analysis of the whole RA structure (cf. Yang and Edwards 1995; Nwogu 1997; Posteguillo 1999; or Yang and Allison 2003). What all these studies have shown is that findings are not only reported but also commented upon. Brett's analysis of sociology RAs identified 16 communicative categories divided into three main groups, with only one obligatory communicative category, the *Statement of Finding/Result*. He found a much more complex rhetorical structure than that suggested by Weissberg and Buker's research (1990), which incorporated just three elements. Yang and Edwards'

(1995) and Posteguillo's (1999) findings were supportive of Brett's moves. These studies highlighted the fact that moves are organised cyclically, with the reporting of a finding acting as an obligatory step normally preceded by a pointer and /or followed by comment categories. For his part, Williams (1999) approached the analysis of a reduced sample of biomedical RAs taking Brett's model as a starting point but modifying it by extending the subtypes under Statement of Finding and by incorporating the category "numerical" and eliminating some of the moves, which were not relevant for the discipline under study.[4]

The discussion section has been considered as an explicitly rhetorical and persuasive unit. Authors such as Berkenkotter and Huckin (1995: 41) have asserted that the discussion section has a rhetorical structure which reverses the CARS structure of the Introductions, as suggested by Swales (1990). That is, the findings seem to occupy a niche, while comparing previous findings in the literature, to finally establish additional territory with the implications of the study or further venues for research. As Basturkmen (2012: 135) states, in the discussion section "writers stake claims about how their results integrate with and contribute to disciplinary knowledge". In a way, this is a key section for researchers as it is here where their findings gain greater significance against a wider scientific context. Studies on the Discussion section are pervasive and include those on disciplinary variation by Holmes (1997), Hopkins and Dudley-Evans (1988), Lindeberg (1994), Peng (1987), Swales (1990), Dudley-Evans (1994), Lewin et al. (2001), Dubois (1997), Swales and Luebs (2002), Yang and Desmond (2003), Lim (2010), Kanoksilapatham (2003) or Basturkmen (2012). These studies have all agreed on the fact that discussion sections are best defined as made up of cycles of moves around the reporting of findings, although the studies point to different moves in different disciplines. Holmes, for example, (1997) analysed 30 RAs from the disciplines of history, political science and sociology, while Peacock (2002) approached the analysis of the communicative moves in seven disciplines (Physics, Biology, Environmental Science, Business, Language and Linguistics, Public and Social Administration, and Law). Both studies drew on a modified version of Hopkins and Dudley-Evans' 11 moves for natural science discussion sections which is summarized in Appendix I. For their part, Yang and Allison (2003) carried out a genre analysis of post-methodology sections (i.e., results, discussion of results and conclusions) together with the rhetorical choices that characterize them in a corpus of RAs in the field of Applied Linguistics. Although different communicative functions were reported for each of the sections, the authors identified a similar set of some six or seven moves occurring across all final sections, although the move *Commenting on Results* was reported to be more often employed in the discussion of results, than in the other sections.

2.2. A Framework of Analysis: the Rhetorical Structure of Food Science and Technology R&D Sections

As an uncharted discipline was being targeted in this article, all the different proposals and taxonomies reported by move researchers and mentioned in section 2.1 have been taken as a point of departure for the analysis of the 32 RAs which make up my corpus. The aim was to incorporate all the possible moves and/or steps which may best help define the rhetorical structure of the R&D sections in the field under analysis. More specifically, the 11-move framework first proposed by Hopkins and Dudley-Evans (1988) and those by Holmes (1997), Peacock (2002) and Basturkmen (2012) have been considered for the discussion sections. Likewise, for the results section, Brett's model (1994), slightly modified to account for disciplinary variation by Williams (1999), has also been taken into account. Yang and Allison's model presents a rhetorical outline of the two sections while also improving previous models by offering a two-layer analysis which differentiates between moves and steps.

My own proposal of moves for the analysis of R&D sections in the field of FSc&Tec is shown in Figure 1 below and is the result of an analysis of the discipline at hand through direct observation of the data under examination. The labels selected for each of the moves and steps are the ones which, in my opinion, best described the communicative function of each of the moves and steps that make up the rhetorical organization of the two sections under analysis (see Appendix II for some examples).

MOVES	STEPS
Move 1: Background Information	Step 1 Established knowledge about the topic of investigation or procedure
	[Step 2 Restating the aims]
	[Step 3 Occupying a niche]
	Step 4 Indicating procedure and materials [with references to previous studies]
Move 2: Reporting Results	Step 5 Presenting results plus mention of tables/graphs
	Step 6 Presenting results
	Step 7 Presenting results with reference to previous literature

MOVES	STEPS
Move 3: Commenting on Results	Step 8 Comparing or backing up findings with previous studies
	Step 9 Commenting on an (un)expected outcome
	[Step 10 Justifying an (un)expected outcome]
	[Step 11 Explaining results]
	Step 12 Commenting on results
Move 4: Evaluating Results	[Step 13 Summarizing results]
	[Step 14 Indicating limitations of the study]
	[Step 15 Indicating significance of the study]
	[Step 16 Pointing to further research]

Figure 1. The rhetorical structure of the R&D section in FSc&Tec RAs[5]

2.3. Interactional Metadiscoursal Units

Metadiscourse is an important rhetorical, subjective and culture-bound means for the production of any type of discourse (cf. Hyland 1996a, 1998). Metadiscourse has been defined as "the cover term for the self-reflective expressions used to negotiate interactional meanings in a text, assisting the writer (or speaker) to express a viewpoint and engage with readers as members of a particular community" (Hyland 2005a: 37). Two main categories of metadiscourse have been traditionally identified: *textual* and *interpersonal* metadiscourse (Vande Kopple 1985). While *textual* metadiscourse is more concerned with discourse organization and with guiding the reader through the text, the *interpersonal* category puts the onus on the relationship between the writer and reader, while also allowing the former to project his/her degree of commitment with the propositional content conveyed (Cheng and Steffensen 1996). However, more recent models of metadiscourse, especially Hyland's (2005b) and Hyland and Tse's (2004: 161), have viewed metadiscourse as "self-reflective linguistic expressions referring to the evolving

text, to the writer and to the imagined readers of that text" (Hyland 2004: 133). In a word, all metadiscourse is interpersonal, hence, opposing the more traditional view sketched above. Hyland's framework distinguishes between *interactive* and *interactional* metadiscourse features. The interactive dimension "concerns the writer's awareness of a participating audience and the ways he or she seeks to accommodate its probable knowledge, interests, rhetorical expectations and processing abilities" (Hyland 2005b: 49). On the other hand, interactional metadiscourse is concerned with the ways the writers comment on their own messages to make their views known, while revealing "the extent to which the writer works to jointly construct the text with the reader" (Hyland 2005b: 49). In the field of academic writing, interactional metadiscorse has proved to be key in persuading the audience of the validity of one's research achievements while protecting the researcher from unwanted criticism from other members in the scientific community (Hyland 2005a). In other words, results and their interpretations need to be presented in ways which "readers are likely to find persuasive, and so writers must draw on these to express their positions, represent themselves, and engage their audiences" (Hyland 2005a: 176). With all this in mind, attention to the interpersonal dimension of academic writing will be carried out here by looking at *stance*, as one of the interactional macro-functions identified by Hyland (2005a):

> *Stance* concerns writer-oriented features of interaction and refers to the ways academics annotate their texts to comment on the possible accuracy or credibility of a claim, the extent they want to commit themselves to it, or the attitude they want to convey to an entity, a proposition, or the reader. (Hyland 2005a: 178)

Stance is enacted through the use of interactional metadiscourse features such as *hedging* and *boosting devices*, together with *attitudinal markers* and *self-mentions*,[6] as central to the building of a successful argument. Looking into the frequency of use of these devices in the two sub corpora is a preliminary step and helps to account for the discoursal preferences of the disciplinary community under investigation.

Likewise, considering that the corpus is made up of articles written by researchers from two different cultures, some variation might be expected in their use of these metadiscoursal categories and in the way researchers construct the text in a joint effort with their intended audience (Hyland 2005b).

Hedges (*likely, perhaps, quite, might*) are resources which weaken the writer's commitment to a proposition, and help the researcher present information as opinion rather than fact, while allowing room for disagreement or counterargument (Hyland 1996b, 1998). *Boosters* (*obviously, clearly, demonstrate*), in contrast, convey the degree of the writer's certainty with the proposition conveyed and

mark involvement and solidarity with the audience. *Attitudinal markers* (*unfortunately, hopefully, remarkable, appropriate*), however, are more concerned with affective meanings rather than with epistemic ones, and convey the writer's attitude of surprise, agreement, importance, and frustration with regard to the proposition. *Self-mentions* (*we, our, I, me*) reveal the degree of explicit authorial presence in the text.

3. Research Methods

3.1. Corpus Collection Procedure

32 empirical RAs from four high-impact internationally refereed journals were collected on the basis of the three criteria stated by Nwogu (1997), i.e., representativity, reputation and accessibility. Eight articles per journal were selected, four written by English L1 native researchers, a conclusion reached by taking into account their names (native to the country concerned), but most importantly by the fact that their affiliation was with an institution in an English-speaking country, drawing on Wood's (2001) criteria. The other four articles were written by English L2 Spanish researchers, a conclusion arrived at by drawing on the same criteria.

The corpus, which comprised the post-methodology sections of results and discussion, yielded 62,076 words, 29,040 for the non-native speakers corpus (NNSs) and 33,036 for the native speakers' (NSs) one. The articles were electronically retrieved and the corpus included publications from the years 2016-2018.

The journals selected are representative of the discipline under analysis and belong to the publishing house Elsevier: *International Journal of Gastronomy and Food Science*, *Food Bioscience*, *Journal of Food Engineering* and *International Dairy Journal*. These journals explicitly recommended the inclusion of a Results and Discussion section while also suggesting that "[a] combined Results and Discussion section is often appropriate". Thus, authors are left to choose the structure they consider most suitable for their RA. The findings obtained here are only extendable to similar RAs in the field.

3.2. Data Analysis Procedure

This study draws on Swales' (1990, 2004) seminal move-step work and the notion of move is taken as a starting point in line with previous research (cf. Nwogu 1991; Holmes 1997). A move is defined as "a discoursal or rhetorical unit that performs

a coherent communicative function in a written or spoken discourse" (Swales 2004: 228). Thus, moves are functional elements and they can be realized by a clause, a sentence or even several sentences (Swales 2004).

The main approach followed has been a top-down approach (Pho 2008; Vázquez-Orta 2010) where content is taken as the basic aspect for the identification of moves. Later, in a bottom-up approach, linguistic features, typographical aspects and the boundaries between sections and sub-sections have been considered to a lesser extent to identify different moves (cf. Mauranen 1993; Connor et al. 1995; Nwogu 1997; Kanoksilapatham 2005; Li and Ge 2009; and Lim 2014 for similar insights).[7]

In order to code the R&D sections, all the papers were read and parsed into moves, and the moves broken down into steps. In order to avoid the subjectivity that the analysis of a sole researcher may bring to the study, a Linguistics PhD student was asked to code the R&D sections of 16 RAs according to the coding scheme presented in Figure 1. Kappa value was calculated and intercoder reliability exceeded 80% (0.8655), hence indicating an outstanding level of interrater agreement (Landis and Koch 1977).

Then, the frequencies of the different moves and steps were calculated to determine whether they occurred frequently enough to be considered obligatory or optional with a cut-off frequency set up at 60% (Kanoksilpatham 2005). Afterwards, several tests were applied to account for the presence and/or absence of the 16 steps in each of the sub-corpora, and to assess use of step frequency in the two sub-corpora. Chi-square was employed to establish whether the occurrence of a particular step was similar in the two sub-corpora.

In order to identify the different interactional metadiscoursal categories, I carried out an electronic computer search with WordSmith 5.0 and a personal manual reading of the different sections to verify that the elements were used as metadiscourse (see Appendix III). In order to account for any statistical difference between the frequencies of use that writers from the two cultural contexts make of these features, their raw frequencies were normalized per 10,000 words and chi-square was calculated with a significance value of $p \leq 0.05$.

4. Results and Discussion

4.1. The Results and Discussion Section: Results from the Move/Step Analysis

A structure of four rhetorical moves has been identified (see Figure 1). Moves 2-3-4 appear in sequential order and Move 2 constitutes the *core* or *head move*. This

move deals with the presentation of results in an objective way (Step 6), sometimes with the help of pointers such as tables, graphs, etc. (Step 5) and, in some cases, together with reference to previous literature (Step 7). In contrast, Move 3, which occurs in post-head position, deals with the comments on the results, through the use of evaluative or hedging devices, and hence, the researchers' view, or attitude towards their findings is conveyed, i.e., for example by comparing findings with previous studies in an explicit way (Step 7), by commenting on the (un)expectedness of a finding (Step 9) or by justifying the findings or commenting on them with the use of interpersonal devices (Steps 10, 11). Move 3 is logically followed by Move 4 whenever this move is used. Move 4 has the purpose of evaluating the contribution of the findings by either summarizing them (Step 13), by pointing to limitations (Step 14), to their significance within the field (Step 15), and/or to the need for further research (Step 16). In contrast, Move 1 is a preparatory stage which normally occurs in pre-head position, although it can be placed at any point in the cycle, i.e., in post-Move 2 and 3 positions (cf. Hopkins and Dudley-Evans 1988 for a similar insight). This move provides a background (Step 1) where aims are restated (Step 2) and a niche is signalled and occupied (Step 3).

The coding process of the 32 RAs yielded a total of 2,024 step counts. Moves 2 and 3 displayed the highest frequency in their use of steps, 40.6% and 40.7%, respectively; followed by Move 1, which accounted for around one third (15.3%) of the steps identified in Moves 2 and 3, followed by Move 4, where step use was restricted to 3.5%. Accordingly, the steps most frequently deployed in the corpus are Steps 5 (12%) and 6 (24.5%) within Move 2, which are aimed at presenting results; Steps 8 (11.3%) and 12 (23.3%) within Move 3, by means of which researchers comment on findings and compare or back them up with previous findings; and Step 4 (10%) within Move 1, in order to indicate the procedure carried out and the materials employed. These findings indicate that the majority of the steps enacted by researchers aim at achieving the communicative functions of Moves 2 and 3, which stand out as the most complex from a rhetorical point of view since it is here that researchers invest greater effort in reporting and commenting on their results. These two moves concentrate most of the obligatory steps identified, and these steps tend to be quite pervasively employed due to the fact that several cycles are initiated for the reporting of new findings.

As to the optional or compulsory status of the moves/steps, all the papers deploy Moves 2 and 3 (100% of use frequency), whereas Moves 1 and 4 are also obligatory with a frequency of use of 96.9% and 71.8%, respectively. With regard to step use, Figure 2 below shows that Steps 1, 4-9 and 12 are obligatory, while the rest of the steps are optional, considering that the threshold for a step to be obligatory has been set at 60%:

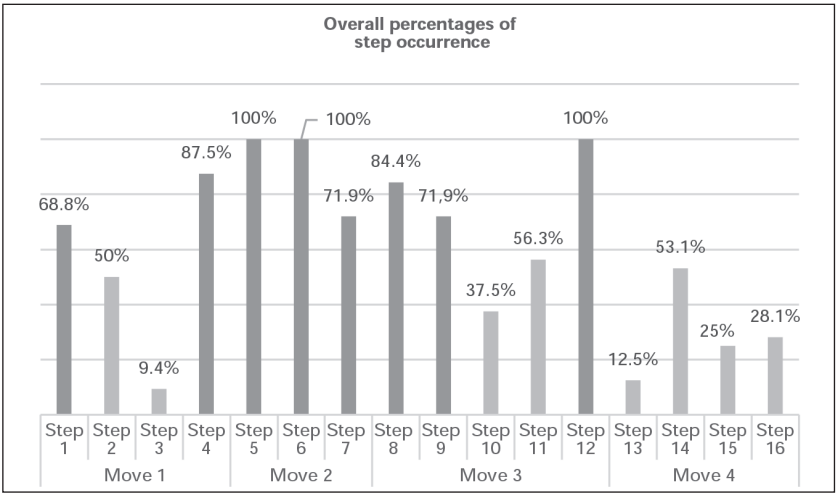

Figure 2. Percentage of occurrence of steps per move

With regard to the existence of a fixed order in the presentation of steps, it has been difficult to isolate a consistent structural pattern common to all the RAs, especially in the use of steps and the order in which they are employed. This lack of uniformity could be explained when it is seen that in 84.4% of the RAs analysed, the R&D section is further divided into several sub-sections (from a minimum of two to a maximum of seven). Thus, each sub-section reports and comments on quite a large number of findings (new cycles), as the type of research carried out is experimental in nature, and imposes its own rhetorical structure regarding the choice and order of moves and steps. Notwithstanding, cycles move in an inside-out trajectory by stating findings, placing them within the established literature, commenting on them and assessing their significance.

A comparison of step frequency in the two sub-corpora indicates (Figure 3) that there is a moderately higher presence of Steps 1, 9, 10 and 13 in the NSs corpus —compared to that of the NNSs. In other words, English L1 researchers resort more often to the presentation of established knowledge about the topic of investigation, while commenting and justifying unexpected results and summarizing findings more frequently than the English L2 academics. In contrast, NNSs employ optional Steps 15 and 16 more frequently than the NSs group to indicate further avenues for research and study limitations. Despite this, the results for the

chi-square test showed no statistically significant relationship between the presence of any particular step and the native language of the researcher. Step 13 however is absent from the NNSs corpora, thus indicating that researchers in this group do not tend to summarize their findings.

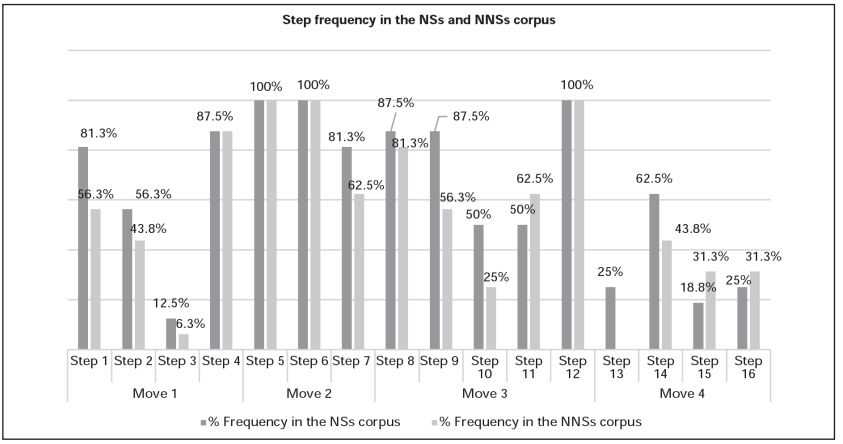

Figure 3. Comparison of step presence in the NSs and NNSs corpora

In what follows, I will describe qualitatively the use of the different steps within each of the moves.

4.1.1. *Move 1*

Within Move 1, Step 1 is obligatory (68.8%) and displays a higher presence in the NSs group (81.3% versus 56.3% for NNSs). Its communicative function allows researchers to present and contextualize their findings within an existing body of knowledge. This step tends to be found in initial position before outcomes are reported, as can be seen in Examples 1-2 below. This step is frequently accompanied by citation (indirect referencing) in an attempt to support claims by highlighting the work of others in the field. These knowledge statements are normally deployed with present simple and/or perfect tenses:

1. *3.2 Functional properties of hydrolysates. 3.21. Solubility.* [Step 1] *It is known that enzymatic methods can improve functional properties of protein.* (02FoodBioSp).
2. *Browning reactions during* flambé. [Step 1] *Browning reactions are hypothesized to occur during flambé, with the justification that the flame temperature greatly exceeds the temperatures needed for these reactions (Olson 2004)* (04JofGastEng).

Step 2 is an optional step which, if it occurs, always occurs before Moves 2/3; NSs deploy it with a frequency of 56.3% compared to a frequency of 43.8% for the NNSs group. For those RAs which are not divided into further sub-sections, this step restates the aims already mentioned in the introduction (Example 3) but it can also serve as a reminder, either before the different finding sections are presented, or within these sub-sections. The restatement of an aim (normally with the past tenses) is normally combined with a statement about the procedure or method followed to obtain such an objective (see Examples 3 and 4):

3. Results and Discussion. Fruits. [Step 2] In this paper, *we described the fermentation of apple dices with R. oryzae*. […] [Step 4] *The hereby research presents* R. oryzae strains *as an option to obtain alternative alcoholic products from cooked rice fermentation with particular sensorial characteristics* (01JofGastSp).

Step 3, *Occupying a niche*, is also an optional step (9.4% of frequency). It is enacted twice as often in the NSs corpus (12.5%) as in the NNSs one (6.3%) as illustrated in Example 4:

4. Results and Discussion. Fruits. This product features an ERG concentration higher than that of the starting material but lower than that found in other natural sources (Ey et al. 2007). [Step 3] *Therefore, the development of efficient concentration processes to increase the ERG concentration is needed*. [Step 2+Step 4] In an attempt to solve this problem, *we have studied the preparation of ERG-enriched extracts using WBM as a raw material and using enzymes and membrane technology for product recovery* (03FoodBioSp).

Step 4, *Indicating procedures and materials*, has been found to be obligatory with 87.5% of occurrence in both corpora either before or after Move 2, that is, after the presentation of the finding and normally initiating a new cycle (cf. Williams 1999 for similar insights). As Kanoksilapatham (2005) stated in her analysis of the rhetorical structure of Biomedical RAs, it is common to list the methods, techniques or experimental procedures adopted as part of the study carried out as they clearly have an effect on the findings obtained. This step also tends to occur together with the presentation of aims (see Example 3 above). Williams (1999) also observes that this step together with that of 'summarizing' are typical steps in the Discussion sections in a corpus of Biomedical RAs:

5. *3.6.* Optimization of the formulation. [Step 4] *First, it was decided to maximize the total antioxidant activity as it is not only dependent on anthocyanin content.* Regarding colour, *the colorimetric coordinates of raw strawberries were selected as the target,* because the original red colour of strawberries was required in the final product (04FoodBioSp).

At times, researchers feel the need to justify their choice of procedure, as in Example 6 below, with references to previous studies which may have relied on the same methods, or by highlighting the flaws in previous procedures or methods as a way of backing up the suitability of the one they have adopted:

6. *3.2.* [Step 5] *Previously, Wang, Hirmo, Willen, and Wadstrom (2001) and Horemans et al. (2012) demonstrated that a concentration of 25 mg mL-1 of defatted MFGM was required to cause 50e80% inhibition of H. pylori adherence to HeLa S3 cell monolayers and NCI- N87 cells, respectively.* Therefore, an initial concentration of 5 mg mL-1 dMFGM was selected for our study. (08JofIntDairEng).

4.1.2. *Move 2*

Move 2 is the head core move (see Brett's study [1994] for a similar insight), it is obligatory and deals with the reporting of results through three compulsory Steps 5, 6 and 7. Steps 5 and 6 are present in all the articles analysed and include reference to tables and graphs in an attempt to guide the reader through the text. Step 7 (81.3% for the NSs corpus and 62.5% for the NNS one) allows writers to engage in prior knowledge to imply that their findings are sound and as a way of backing them up through indirect citation and thus, it could be argued that it functions as a face-saving device:

7. 3.3. Microscopic surface analysis. [Step 5] The ability of the hydrolysates to inhibit DPP-IV activity was evaluated and *the results obtained are shown in Table 5* (03FoodBioSp).
8. [Step 7] Rancidity in cheese has been attributed to an excessive or unbalanced lipolysis, which leads to an excess of FFAs producing off- flavours *(Fox & Wallace 1997; Fox et al. 2004; McSweeney & Sousa 2000).* [Step 5 & 7] *Butanoic acid, present in higher relative abundance in rancid off-flavour cheeses than in the other tested cheeses (Table 3), has often been described as a key odorant with cheesy or putrid odours (Barron et al. 2005b; Thomsen et al. 2012)* (06IntDairyJournalEng).

The most interesting aspect of this move is that the presentation of a finding starts a new cycle which is normally followed by an evaluation of the finding but which can also be followed and/or preceded by steps from Move 1.

4.1.3. *Move 3*

A total number of 823 instances have been identified (40.7% of the steps found in the total corpus), which makes Move 3 the most frequent one as it is also an obligatory move. Move 3 constitutes a highly interpersonal section where hedging, boosting and attitudinal devices are profusely deployed when dealing with findings and their interpretations. Step 8 fulfils the communicative purpose of explicitly comparing the findings with others from previous studies as a way of backing up the relevance of the ones reported, while also acknowledging previous research. Step 8 is employed by the two groups of researchers (87.5% NSs versus. 81.3% for NNSs):

9. [Step 8] *Two previous studies have considered ethanol losses during flambé. Our current results are more similar to those of Augustin et al. (1992),* who observed that only 15% of ethanol is lost during flambé preparation of Cherries Jubilee. *In contrast, a Cooks Illustrated article reported that 79% of ethanol is lost during preparation of a cognac-based sauce for Steak Diane (Olson 2004).* (04JofGastEng).

The function of Step 9 is to allow researchers to comment on findings which are either expected or unexpected. However, NSs deploy it with a frequency of 87.5% whereas NNSs do not seem to resort to its use so pervasively (only 56.3%). This step was also found in Williams' study (1999) after the presentation of findings under the label "Non-validation of Finding". Step 10 provides an explanation for the expectedness/unexpectedness of the findings and NSs employ them twice as much (50%) as their NNs (25%) counterparts possibly in an attempt to provide an explanation for the difference in results, and also in order to get the reader to accept the results more easily. Step 11 is deployed to provide an explanation for findings (cf. Hopkins and Dudley-Evans 1988; Brett 1994), that is, researchers show an understanding of the underlying causes of such a result and thus providing a mitigating factor in case the finding differs from what has been reported in previous work. This step is normally deployed with the help of linking words such as "due to, in relation to, as a consequence", and hedges such as the epistemic adjective "likely", or the epistemic modal verb "could" to tentatively account for the explanation provided. NNs use this step with a slightly higher frequency than the NSs (50% versus 62.5%):

> 10.[Step 9] *However, we did observe that an air temperature decrease around the nozzle from 23.7 ^{0}C to 19.9 ^{0}C had a large impact on bridging,* with an increase in spanning distance of around 1e2 mm consistent across all tests. [Step 10] *This is likely due to* the turbulent airflow adding variability to the system and altering the solidification of the chocolate (02JofFoodEngEng).

Step 12 clearly embodies the writer's opinion or evaluation with regard to particular findings, which can be expressed through a balanced combination of hedging, boosting or attitudinal markers. Its frequency of use reaches 100% for both groups of academics and this step is normally enacted after the presentation of the finding:

> 11.[Step 12] Thus, the result *observed* in this experiment is *likely due to* the reduced time period in which dMFGM and E. coli strains were in contact, compared with the standard competition assay. This *would lead* to reduced competitive binding of dMFGM and HT-29 cell adhesins for E. coli O157:H7 cell receptors. The lack of a pre-incubation step reduces the ability of the dMFGM fraction to inhibit bacterial binding to host cells. However, *it is interesting* that a reduction was still *evident* instantaneously (03JofInDairySp).

4.1.4. *Move 4*

Move 4 provides an evaluation of the results through some of its non-compulsory steps. Step 13 summarizes results and is absent from the NNSs corpus. Step 14 is employed with a higher frequency in the NSs corpus (62.5% versus. 43.8%) to indicate the limitations of the study (see 12 below). Steps 15 and 16 are employed to indicate the significance of the study and avenues for further research, and their presence is slightly higher in the NNSs corpus (31.3% versus 18.8% and 31.3% versus 25%), although not statistically significant:

12.[Steps 15-16] Although these studies indicate the anti-infective activity of the dMFGM fraction against EHEC could also be viable in vivo, *further studies are required to validate this. This hypothesis requires further investigation*. (08JofIntDairyEng).

One possible explanation for the optionality in the case of Steps 15 and 16 could be that these researchers are publishing in high-impact journals and thus, they do not feel the need to justify the limitations of their work, as a way of protecting themselves from possible or potential criticism. Another reason might be that they are also established researchers. The fact that Step 16 is not exploited from a rhetorical point of view in this discipline could well be explained by considering, as Huckin stated in Swales (1990), that the recommendation for what to do next is "a move being increasingly abandoned by US scientists because they do not wish to give advantage to others in an increasingly competitive market for research grants" (Swales 1990: 173).

4.2. Interpersonal Metadiscourse in the Results and Discussion Section: a Quantitative Analysis

The quantitative analysis shows that the interpersonal metadiscourse features analysed are employed with an overall frequency of 388.6 per 10,000 words in the corpus analysed. Hedges stand out as the most frequent category (216.3), followed by boosters (105.0), attitude markers (49.5) and authorial presence (17.2).

In view of these findings, it could be said that in the R&D section of FSc&Tech, writers are mostly concerned with the mitigation or tentative presentation of their findings, and at other times with the expression of authorial confidence and engagement with the propositions conveyed through boosters and, to a lesser extent, attitudinal markers, as illustrated in Table 1 below:

Interpersonal Metadiscourse features	NNSs raw/normalized frequencies	NSs raw/normalized frequencies	p-value
Hedging Devices	569/195.9	774/234.3	**0.001**
Boosting Devices	281/96.8	371/112.3	0.061
Attitudinal Markers	146/50.3	161/48.7	0.786
Personal Presence	37/12.7	70/21.2	**0.011**
Total	569/195.9	774/234.3	**0.001**

Table 1. Raw and normalized frequencies of interactional metadiscourse categories per 10,000 words

Overall, the NSs group employed more interpersonal metadiscourse than their Spanish counterparts in the sections under analysis (417.1 versus 356.1 per 10,000

words) and this difference is statistically significant (p-value 0.001). In the same line, Abdollahzadeh's study (2011) on interpersonal metadiscourse used by Iranian and English academics in the discussion sections of RAs published in English applied linguistics journals showed a higher use of metadiscourse by English academics compared to the Iranian researchers (p. 0.005). These findings (439.6 versus 295.4) corroborated previous cross-cultural research by Mur-Dueñas (2011) on the use of interactional metadiscourse by academics with English/Spanish L1 in the field of Business Management.

The quantitative analysis has shown that hedging devices make up the category most pervasively employed both by NSs and NNs (234.3 versus 195.9 per 10,000 words), and the p-value for the chi-square has shown a statistically significant difference between both groups (p. 0.001). This finding also corroborates those in Mur-Dueñas' (2011) study where hedging values were 200.1 versus 126.7 for NSs and NNSs, respectively. It follows from this finding that NSs are more conscious of the need to present their knowledge in a tentative manner in an attempt to avoid sounding too categorical or to avoid appearing to impose on the other academics in the audience and so, they resort to signalling that results could be opposed or contradicted, thus leaving the door open for disagreement. In contrast, academics in the NNSs group, even if publishing in the same journal, do not seem to view hedging as such a necessary strategy, possibly due to L1 rhetorical interference or to a lack of awareness of what the most productive rhetorical practices are in the target culture when it comes to constructing knowledge (Bazerman 1988). Vázquez-Orta (2010) also reported that English L1 academics hedged their discourse more heavily than their Spanish counterparts across the different sections of Business Management RAs, although he only focused on modal verbs and was dealing with two different cultural contexts of publication.

The categories of boosters is the second feature most pervasively employed by both groups of researchers (112.3 versus 96.8 per 10,000 words) and even if the p-value does not point to any statistical difference, NSs tend to use it with a higher frequency. This category seems to be enacted almost twice as much in the discipline of FSc&Tech than in that of Business Administration (54.2 versus 72.2, for NSs and NNSs, respectively) as reported in Mur-Dueñas (2011), and is probably a feature of disciplinary variation. Its frequency use in this discipline indicates that researchers convey their findings in an assertive way, expressing their commitment to the propositional content conveyed.

Although no studies dealing with this section in the discipline under analysis have been carried out, other contrastive studies on the use of these metadiscoursal categories have indicated that English writers tend to use hedges and boosters more frequently than non-native English researchers (cf. Vassileva 2005; Atai and

Sadr 2008; Chen and Baker 2010; Vázquez-Orta 2010; Ädel and Erman 2012), especially Spanish researchers with English as their L2 (Oliver del Olmo 2014; Carrió-Pastor 2016).

In contrast, attitudinal markers are employed with a similar frequency in the NSs and NNSs corpora (50.3 versus 48.7 per 10,000 words). Mur-Dueñas (2010, 2011) also found a great similarity in the frequency of use of attitude markers in Business RAs written by English and Spanish academics (8.1 versus 7.7 per 1,000 words), which indicates that this is a popular metadiscoursal feature frequently employed by researchers from both cultures. Thus, it can be concluded that cultural differences do not seem to be at work when it comes to the explicit evaluation of findings and to the expression of the writer's attitude towards the content presented. Researchers seem to share a mutual set of disciplinary values when publishing their papers and the different writing cultures do not seem to have affected their use of this feature.

Finally, regarding the authorial presence in the two corpora, the NSs corpus uses self-mention devices with a frequency of 21.7, versus 12.7 for the NNSs corpus, with a statistically significant value of 0.011. The difference is especially noteworthy in the use of the exclusive plural form[8] of the personal pronoun "we", which is employed with a frequency of 0.5 in the NNSs corpus versus 1.1 in the NSs corpus (p. 0.006). This finding reveals that authorial presence with the personal pronoun "we" is not a preferred option for non-native speakers in the R&D section (cf. Hyland 2002; Martínez 2005 for similar insights), whereas it is a frequent choice in the NSs corpora when it comes to assuming responsibility for the findings or claims enacted. This is partially in contrast to the research carried out by Carciu (2009) in a corpus of medicine RAs, where she observed that NNSs made their presence more visible especially in the introductory section of RAs, thus reifying the belief that cultural background may influence authorial visibility.

A closer look at the contextual uses of "we" in the corpus also reveals that its use is mainly oriented towards the presentation of the aims of the research and the procedures employed in 41.2% of the cases, and to the presentation of results in 58.8% of the instances. However, in the NSs corpus, 63.9% of the instances occur in the high risk activity of commenting on findings, whereas 36.1% of the uses fall within Move 1 to reintroduce the aim of the paper or describe procedural aspects. In contrast, in the NNSs corpora, 53.3% of the uses of "we" seem to be oriented towards presenting the aims or describing procedures, low-risk activities with regard to facework, whereas 46.7% of the uses deal with the comments and discussion of results. So, it seems that the two different groups respond in slightly different ways to the underlying motivation of pragmatic politeness as the rationale for authorial presence in this section.

Statistically significant values have also been found for the use of some hedging adjectives (*quite, about, almost, apparent*, etc.) and hedging verbs (*observe, suggest, deduce*, etc.) as displayed in Table 2:

Hedging Devices	NNSs corpus/ per 10,000 wds	NSs corpus/per 10,000 wds	Total amount	p-value
Modal Verbs	203/69.9	249/75.4	452/72.8	0.427
Adverbs	141/48.6	191/57.8	332/53.5	0.095
Adjectives	81/27.9	128/38.7	209/33.7	**0.025**
Verbs	114/39.3	184/55.7	298/48.0	**0.003**
Nouns	1/0.3	4/1.2	5/0.8	0.38
Other expressions	29/10.0	18/5.4	47/7.6	**0.04**
Total	*569/195.6*	*774/234.3*	*1343/216.3*	**0.001**

Table 2. Raw and normalized frequencies of hedging devices

However, hedging modal verbs are employed in a similar fashion in both cultural contexts. This may indicate that the Spanish researchers are aware of the context of publication and of the rhetorical conventions of the genre in which they are writing. This finding, to a certain extent, contradicts previous research which has shown that hedging devices are not employed in the same way when comparing academic texts in English and in other languages (Kreutz and Harres 1997; Vassileva 1997; Vold 2006; Vázquez-Orta 2010; Usoniene and Sinkuniene 2014). With regard to the frequency of use of the epistemic modal verbs *could* and *may*, there is a marked difference. In the NSs corpus *may* displays a frequency of 2.3 words per 10,000, whereas in the NNSs corpus its frequency is reduced to 0.6 (p. 0.001) (cf. Vassileva 2005 for similar insights), which indicates that the Spanish non-native writers fail to make use of this common modal verb to express tentativeness. In contrast, *could* is used by the NNSs with a frequency of 2.3 words versus 1.3 for the NSs (p. 0.002). The frequency of use of "can" (1.3 NSs versus 2.0 NNSs, p. 0.052) and "might" (0.3 for both corpora, p. 0.773) has been found to be similar.

5. Concluding Remarks

The contrastive genre-based approach to the rhetorical structure and use of interpersonal metadiscourse in the R&D sections of FSc&Tec RAs has come up with

some interesting findings. First of all, the combination of obligatory/optional moves and steps found in the corpus has allowed me to arrive at a preliminary template which is indicative of certain common rhetorical patterns for this section in both sub-corpora. This research has also shown that in spite of the cultural differences exerted by the writing conventions of the researchers' L1 languages, both Spanish and English academics abide by the same disciplinary norms and/or conventions with regard to the rhetorical structure of the R&D section in the field of FSc&Tech. This was something I expected, considering that we are dealing with academics writing in a specific context of publication, and whose work is rigorously assessed accustoming them to the shared disciplinary values or beliefs that are most prominent in the writing conventions of this community. In other words, the writing of the R&D sections is dictated by common overarching goals and procedures, and thus, academics from the two cultural groups shared beliefs and disciplinary norms which are far more influential than their specific cultural and linguistic idiosyncrasies.

Despite the fact that all the moves have been found to be obligatory, there is some slight variation when it comes to the use of some steps within moves which might be indicative of the fact that the English L1 academics organize their R&D sections in a more rhetorically complex way in comparison to their Spanish counterparts, as they seem to rely on a wider spectrum of steps. Possible explanations could be the fact that even though they are publishing for an international audience, Spanish researchers are less aware of the rhetorical possibilities that some steps may offer them to make their writing more persuasive when publishing research in English. However, considering the number of RAs which make up the corpus, this preliminary template should be further tested with a larger corpus of analysis.

Secondly, although the quantitative findings regarding the use of metadiscoursal features are best seen as tentative, they have helped us corroborate Lee and Casal's (2014) belief that "most cross-cultural examinations show that metadiscoursal realizations in different languages diverge more than converge". In fact, what this study has made manifest is that NSs employ metadiscoursal features more pervasively than their Spanish counterparts and that there are differences regarding the way these academics employ some of the interactional metadiscourse features analysed when writing the R&D sections of their FSc&Tec RAs in English. This seems to point to a higher awareness on the part of English academics for the need to carefully evaluate, justify or explain their findings in order to convey a more credible representation of their work and themselves while socially signalling their commitment to the propositional information conveyed. The fact that Spanish researchers deploy fewer metadiscourse features might be the result of their not having fully mastered the necessary ability to strongly signal such an interaction between the writer and the reader, due to, perhaps, a different perception of the

conventions for scientific and/or academic writing or due to interference from their L1 systems.

On the other hand, the considerable amount of metadiscoursal features employed in the sections under analysis could be well explained by bearing in mind the complexities of the rhetorical functions carried out in this section. In other words, as this section is mainly concerned with the presentation and evaluation of findings, a considerable amount of hedging devices are employed together with the use of boosters, especially in Move 3. Boosting devices may be seen, too, as necessary as in a competitive world where academics need to signal their commitment and attitude towards the findings portrayed. Similarly, caution expressed through mitigating devices is also required to avoid sounding too categorical in the presentation, evaluation or contextualization of findings, considering that they may pose a threat to previous research or challenge well-established knowledge in the field.

Thirdly, this study also contributes to cross-cultural studies by presenting a preliminary analysis of the discipline of FSc&Tec, thus adding to already existing research on disciplinary variation. By focusing attention on the non-conventional section of Results and Discussion, this paper has shown the importance of accounting for the rhetorical structure of RAs published in internationally recognized journals and whose rhetorical layout lies beyond the traditional IMRD structure.

Finally, this paper opens up several avenues for further research. The exploratory quantitative approach carried out should be complemented with a qualitative analysis in a larger corpus. Likewise, interviews with researchers in the field may help shed light on the epistemology and research practices of the discourse community under analysis and on their motivations for the lack of authorial presence, or on their preferences for certain hedging categories and for the deployment of certain steps within moves. Also, the findings reported here should be interpreted as having potential pedagogical applications in the field of English for Academic Purposes both for instructors and PhD students, as they could be the basis for the elaboration of pedagogical materials to make non-native academics aware of the way hedging and boosting are carried out in the discipline under analysis.

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Notes

[1]. In spite of this, one of the frameworks which has gained attention in the fields of writing in EAP and ESP is *English as a Lingua Franca* (cf. Jenkins et al. 2011; Cogo and Dewey 2012; Seidlhofer 2012, among others) which "envisions a world in which rigid NES norms are replaced by more flexible, internationally-oriented patterns that facilitate communication between users of different varieties of English, with negotiation and accommodation being keys to success" (McIntosh et al. 2017: 13).

[2]. Lafuente-Millán (2008) includes this field of study in his paper on the evaluation of hedges, boosters and approximators together with three other disciplines.

[3]. In fact, in a sample of 50 RAs, I have found that both sections coalesce in 90% of the cases for the journals *Food Bioscience* and *Journal of Food Engineering*, whereas 86% of the papers in the *International Journal of Dairy* and 85% of those published in the *International Journal of Gastronomy and Food Science* tend to merge both sections.

[4]. Williams' interest was to assess the frequency of the categories rather than their linguistic realizations.

[5]. Optional steps are signalled with square brackets.

[6]. Hyland's framework of interactional metadiscourse also includes *engagement markers* (reader pronouns, directives, questions, etc.) under the macro-function of *engagement* but they fall outside the scope of this study.

[7]. It should be stated that it was not the aim of this article to provide a detail analysis of the linguistic realizations of each move and step, mainly due to space limitations.

[8]. Exclusive uses are those which refer to the researchers of the paper and do not include the reader (cf. Hardwood 2005).

Works Cited

Abdollahzadeh, Esmaeel. 2011. "Poring over the findings: Interpersonal authorial engagement in applied linguistics papers". *Journal of Pragmatics* 43 (1): 288-297.

Ädel, Annelie and Britt Erman. 2012. "Recurrent word combinations in academic writing by native and non-native speakers of English: A lexical bundles approach". *Journal of English for Specific Purpose*s 31: 81-92.

Atai, Mahmood Reza and Lela Sadr. 2008. "A cross-cultural genre study on hedging devices in discussion section of applied linguistic research articles". *Teaching English Language (Teaching English Language and Literature Society of Iran)* 2 (7): 1-22.

Basturkmen, Helen. 2012. "A genre-based investigation of discussion sections of research articles in Dentistry and disciplinary variation". *Journal of English for Academic Purposes* 11: 134-144.

Bazerman, Charles. 1988. *Shaping written knowledge. The genre and activity of the experimental article in science*. Madison: University of Wisconsin Press.

Berkenkotter, Carol and Tomas N. Huckin. 1995. *Genre Knowledge in Disciplinary Communication Cognition/Culture/Power*. Hillsdale: Lawrence Erlbaum.

Brett, Paul. 1994. "A genre analysis of the results section of sociology articles". *English for Specific Purposes* 13 (1): 47-59.

Carciu, Oana. 2009. "An intercultural study of first-person plural references in biomedical writing". *Ibérica* 18: 71-92.

Carrió-Pastor, María-Luisa. 2016. "A Contrastive Study of the Hedges used by English, Spanish and Chinese researchers in academic papers". In Alonso Almeida, Francisco, Ivalla Ortega Barrera, Elena Quintana Toledo and Margarita E. Sánchez Cuervo (eds.) *Input a Word, Analyze the World: Selected Approaches to Corpus Linguistics*. Cambridge Scholars Publishing: 477-491.

Chen, Yu-Hua and Paul Baker. 2010. "Lexical bundles in L1 and L2 Academic writing". *Language Learning & Technology* 14 (2): 30-49.

Cheng, Xiaoguang and Margaret Steffensen. 1996. "Metadiscourse: A Technique for Improving Student Writing". *Research in the Teaching of English* 30 (2): 149-181.

Cherry, Roger D. 1988. "Ethos vs persona: self-representation in written discourse". *Written Communication* 5: 251-276.

Cogo, Alessia and Martin Dewey. 2012. *Analysing English as a Lingua Franca: A corpus driven investigation*. New York Continuum.

Connor, Ulla, Kenneth W. Davis and Teun de Rycker. 1995. "Correctness and clarity in applying for overseas jobs: A cross-cultural analysis of US and Flemish applications". *Text-Interdisciplinary Journal for the Study of Discourse* 15: 457-475.

Connor, Ulla. 1996. *Contrastive rhetoric: Cross-cultural aspects of second language writing*. Cambridge: Cambridge U.P.

Connor, Ulla. 2011. *Intercultural rhetoric in the writing classroom*. Ann Arbor: John Benjamins.

Curry, Mary Jane and Theresa Lillis. 2004. "Multilingual scholars and the imperative to publish in English: Negotiating interests, demands, and rewards". *TESOL Quarterly* 38 (4): 663-688.

Dubois, Betty L. 1997. *The biomedical discussion section in context*. Greenwich, Connecticut: Ablex Publishing.

Dudley-Evans, Tony. 1994. "Genre analysis: an approach for text analysis for ESP". In Coulthard, Malcom (ed.) *Advances in Written Text Analysis*. London: Routledge: 219-228.

Duszak, Anna (ed.). 1997. *Culture and styles of academic discourse. Trends in linguistics. Studies and monographs 104*. Berlin and New York: Mouton de Gruyter.

Flowerdew, John. 1999. "Writing for scholarly publication in English: The case of Hong Kong". *Journal of Second Language Writing* 8 (2): 123-145.

Gilbert, Nigel G. and Michael Mulkay. 1984. *Opening Pandora's Box: A sociological analysis of scientists' discourse*. Cambridge: Cambridge U.P.

Grabe, William and Robert B. Kaplan. 1996. *Theory and practice of writing*. New York: Longman.

Harwood, Nigel. 2005. "'*Nowhere has anyone attempted… In this article I aim to do just that*': A corpus-based study of self-promotional *I* and *we* in academic writing across four disciplines". *Journal of Pragmatics* 37: 1207-1231.

Holmes, Richard. 1997. "Genre analysis and the social sciences: an investigation of the structure of research article discussion sections in three disciplines". *English for Specific Purposes* 16 (4): 321-337.

Hopkins, Andy and Tony Dudley-Evans. 1988. "A genre-based investigation of the discussion sections in articles and dissertations". *English for Specific Purposes* 7 (2): 113-121.

Hyland, Ken. 1996a. "Writing without conviction? Hedging in Science Research Articles". *Applied Linguistics* 17 (4): 433-454.

Hyland, Ken. 1996b. "Talking to the Academy: Forms of Hedging in Science Research Articles". *Written Communication* 13 (2): 251-281.

Hyland, Ken. 1998. "Boosters, hedges and the negotiation of academic knowledge". *Text* 18 (3): 349-382.

Hyland, Ken. 2000. *Disciplinary discourses: Social interaction in academic writing*. London: Pearson.

Hyland, Ken. 2001. "Humble servants of the discipline? Self-mention in research articles". *English for Specific Purposes* 20: 207-226.

Hyland, Ken. 2002. "Authority and invisibility: authorial identity in academic writing". *Journal of Pragmatics* 34: 1091-1112.

Hyland, Ken. 2004. "Disciplinary interactions: metadiscourse in L2 postgraduate writing". *Second Language Writing* 13: 133-151.

Hyland, Ken. 2005a. "Stance and engagement: A model of interaction in academic discourse". *Discourse Studies* 7 (2): 173-192.

Hyland, Ken. 2005b. *Metadiscourse*. London: Continuum.

Hyland, Ken and Liz Hamps-Lyons. 2002. "EAP: Issues and directions". *Journal of English for Academic Purposes* 1: 1-12.

Hyland, Ken and Polly Tse. 2004. "Metadiscourse in Academic Writing: A Reappraisal". *Applied Linguistics* 25: 156-177.

Jenkins, Jennifer, Alessia Cogo and Martin Dewey. 2011. "Review of developments in research into English as a lingua franca". *Language Teaching* 44 (3): 281-315.

Johns, Anthony and Tony Dudley-Evans. 1991. "English for specific purposes: international in scope, specific in purpose". *TESOL Quarterly* 20: 247-265.

Kanoksilapatham, Budsaba. 2003. "A corpus-based investigation of biochemistry research articles: Linking move analysis with multidimensional analysis". PhD Dissertation. Georgetown University.

Kanoksilapatham, Budsaba. 2005. "Rhetorical structure of biochemistry research articles". *English for Specific Purposes* 24 (3): 269-292.

Knorr-Cetina, Karen D. 1981. *The Manufacture of Knowledge*. Oxford: Pergamon.

Kreutz, Heinz and Annette Harres. 1997. "Some observations on the distribution and function of hedging in German and English academic writing". In Duszak, Anna (ed.): 181-201.

Lafuente-Millán, Enrique. 2008. "Epistemic and approximative meaning revisited: the use of hedges, boosters and approximators when writing research in different disciplines". In Burguess, Sally and Pedro Martín Martín (eds.) *English as an additional language in research publication and communication*. Berlin: Peter Lang: 65-82.

Landis, J. Richard and Gary G. Koch. 1977. "The measurement of observer agreement for categorical data". *Biometrics* 33, 159-174.

Lee, Joseph J. and Elliot J. Casal. 2014. "Metadiscourse in results and discussion chapters: A cross-linguistic analysis of English and Spanish thesis writers in engineering". *System* 46 (3): 39-54.

Lewin, Beverly A., Jonathan Fine and Lynne Young. 2001. *Expository Discourse: A Genre-based Approach to Social Science Research Texts*. New York: Continuum.

Li, Juan L. and Guang-Chu Ge. 2009. "Genre analysis: Structural and linguistic evolution of the English-medium medical research article (1985-2004)". *English for Specific Purposes* 28: 93-104.

Lim, Jason Miin-Hwa. 2010. "Commenting on research results in applied linguistics and education: a comparative genre-based investigation". *Journal of English for Academic Purposes* 9: 280-294.

Lim, Jason Miin-Hwa. 2014. "Paving the way for research findings: writers' rhetorical choices in education and applied linguistics". *Discourse Studies* 13 (6): 725-749.

Lin, Ling and Stephen Evans. 2012. "Structural patterns in empirical research articles: A cross-disciplinary study". *English for Specific Purposes* 31: 150-160.

Lindeberg, A.C. 1994. "An exploratory study of knowledge claims in article introductions in three disciplines: Finance, Management, and Marketing". In Majapuro, M. and T. Nikko (eds.) *Talous ja kieli II (Business and Language II)*. Helsinki: Publications of the Helsinki School of Economics and Business Administration: 647-655.

Lorés-Sanz, Rosa. 2011a. "The construction of the author's voice in academic writing: The Interplay of Cultural and Disciplinary Factors". *Text & Talk* 31: 173-193.

Lorés-Sanz, Rosa. 2011b. "The study of authorial voice: Using a Spanish-English corpus to explore linguistic transference". *Corpora* 6 (1): 1-24.

Martínez, Iliana A. 2005. "Native and non-native writers' use of first person pronouns in the different sections of biology research articles in English". *Journal of Second Language Writing* 14: 174-190.

Mauranen, Anna. 1993. "Contrastive ESP rhetoric: metatext in Finnish-English Economics texts". *English for Specific Purposes* 12: 3-22.

McIntosh, Kyle, Ulla Connor and Esen Gokpina-Shelton. 2017. "What intercultural rhetoric can bring to EAP/ESP writing studies

in an English as a lingua franca world". *Journal of English for Academic Purposes* 29: 12-20.

Mur-Dueñas, Pilar. 2009. "Logical markers in L1 (Spanish and English) and L2 (English) business research articles". *English Text Construction* 2 (2): 246-264.

Mur-Dueñas, Pilar. 2010. "Attitude markers in business management research articles: a cross-cultural corpus-driven approach". *International Journal of Applied Linguistics* 20 (1): 50-72.

Mur-Dueñas, Pilar. 2011. "An intercultural analysis of metadiscourse features in research articles written in English and in Spanish". *Journal of Pragmatics* 43: 3068-3079.

Mur-Dueñas, Pilar. 2012. "Getting research published internationally in English: An ethnographic account of a team of Finance Spanish scholars' struggles". *Ibérica* 24: 139-156

Mur-Dueñas, Pilar. 2016. "Modal hedging verbs in English as a Lingua Franca. Business Management Research Articles". *KALBOTYRA* 69: 153-178.

Murillo, Silvia. 2012. "The use of reformulation markers in Business Management research articles: an intercultural analysis". *International Journal of Corpus Linguistics* 17 (1): 62-88.

Nwogu, Kevin. 1997. "The medical research paper: Structure and functions". *English for Specific Purposes* 16 (2): 119-138.

Oliver del Olmo, Sonia. 2014. "Hedging and attitude markers in Spanish and English scientific medical writing". In Zuczkowski, Andrzej, Ramona Bongelli, Ilaria Riccioni and Carla Canestrari (eds.) *Communicating Certainty and Uncertainty in Medical, Supportive and Scientific Contexts*. Amsterdam: John Benjamins Publishing Company: 273-287.

Peacock, Matthew. 2002. "Communicative moves in the discussion section of research articles". *System* 30, 479-497.

Peng, J. 1987. "Organisational features in chemical engineering research articles". *ELR Journal* 1: 79-116.

Perez-Llantada, Carmen, Ramón Plo and Gibson R. Ferguson. 2011. "'You don't say what you know, only what you can': The perceptions and practices of senior academics regarding research dissemination in English". *English for Specific Purposes* 30 (1): 18-30.

Pho, Phuong Dzung. 2008. "Research article abstracts in applied linguistics and educational technology: A study of linguistic realizations of rhetorical structure and authorial stance". *Discourse Studies* 10 (2): 231-250.

Posteguillo, Santiago. 1999. "The schematic structure of computer science research articles". *English for Specific Purposes* 18 (2): 139-160.

Salager-Meyer, Françoise. 2001 "Referential behaviour in scientific writing: A diachronic study (1810-1995)". *English for Specific Purposes* 8 (3): 279-305.

Seidlhofer, Barbara. 2012. "Understanding English as a Lingua Franca". *Applied Linguistics* 33 (4): 463-465.

Swales, John M. 1990. *Genre analysis: English in academic and research settings*. Cambridge: Cambridge U.P.

Swales, John M. 2004. *Research genres: Exploration and Applications*. Cambridge: Cambridge U.P.

Swales, John M. and Christine B. Feak. 1999. *Academic Writing for Graduate Students: Essential Skills and Tasks*. Ann Arbor: University of Michigan Press.

Swales, John and Margaret A. Luebs. 2002. "Genre Analysis and the advanced second language writer". In Barton, Ellen L. and Gail Stygall (eds.) *Discourse studies in composition*. Cresskill: Hampton Press: 135-154.

Usonienė, Aurelija and Jolanta Šinkūnienė. 2014. "A corpus-based look at zero correspondences: realizations of epistemicity in a cross-linguistic perspective". In Glynn, Dylan and Mette Sjölin (eds.) *Subjectivity and Epistemicity: Corpus, discourse, and literary approaches to stance*. Lund: Lund U.P.: 263-279.

Vande Kopple, William J. 1985. "Some Exploratory discourse on Metadiscourse". *College Composition and Communication* 36 (1): 82-93.

Vassileva, Irena. 1997. "Hedging in English and Bulgarian academic writing". In Duszak, Anna (ed.): 203-222.

Vassileva, Irena. 2005. "Commitment and detachment in English and Bulgarian academic writing". *English for Specific Purposes* 20: 83-102.

Vázquez-Orta, Ignacio. 2010. "A contrastive analysis of the use of modal verbs in the expression of epistemic stance in business management research articles in English and Spanish". *Ibérica* 19: 77-96.

Vold, Eva T. 2006. "Epistemic modality markers in research articles: A cross-linguistic and cross-disciplinary Study". *International Journal of Applied Linguistics* 16 (1): 61-87.

Weissberg, Robert and Suzanne Buker. 1990. *Writing up research*. Englewood Cliffs: Prentice Hall Regents.

Williams, Ian. 1999. "Results sections of medical research articles: analysis of rhetorical categories for pedagogical purposes". *English for Specific Purposes* 18: 347-366.

Wood, Alistair. 2001. "International scientific English: The language of research scientists around the world". In Flowerdew, John and Matthew Peacock (eds.) *Research perspectives on English for academic purposes.* New York: Cambridge U.P.: 81-83.

Yang, Ruiying and Charles Edwards. 1995. "Problems and solutions for trainee teachers reading academic articles in English". In Tickoo, Makhan L. (ed.) *Reading and writing: theory into practice* (Anthology series 35). Singapore: Regional Language Centre: 366-382.

Yang, Ruiying and Desmond Allison. 2003. "Research articles in applied linguistics: Moving from results to conclusions". *English for Specific Purposes* 22: 365-385.

Appendix I. Different taxonomies of the communicative functions of the Results and Discussion sections

Weissberg and Buker (1990)
Results Section

Element 1: Statement in the present tense that locates the figure(s).
Element 2: Past tense statement that presents the most important findings.
Element 3: Statements that comment on the results (generalise, explain or compare)

Brett (1994) and Williams (1999)
Results Section

1. Metatextual
0.1. Pointer
0.2. Structure of Section
2. Presentation Categories
0.3. Procedural
[0.4] Hypothesis Restated
1.1. Statement of Finding
(a) Comparison
(b) Time-related change
(c) Relationship between variables
[(d) Numerical]
2.1. Substantiation of Finding
2.2. Non-validation of Finding
3. Comment Categories
3.0. Explanation of Finding
3.1. Comparison of Finding with Literature
(a) Same
(b) Neither the same nor different
(c) Different
3.2. Evaluation of Findings: Hypothesis
(a) Same
(b) Different
[3.3. Further question(s) raised by Finding]
3.4. Implications of Finding
[3.5. Summarising]

Hopkins and Dudley-Evans (1988)
Discussion Section

1. Background Information
2. Statement of Result
3. (Un)expected Outcome
4. Reference to Previous Research (Comparison)
5. Explanation of Unsatisfactory Result
6. Exemplification
7. Deduction
8. Hypothesis
9. Reference to Previous Research (Support)
10. Recommendation
11. Justification

Holmes (1997)
Discussion section

1. Background Information
2. Statement of Result
3. (Un)expected Outcome
4. Reference to Previous Research (Comparison)
5. Explanation of Unsatisfactory Result
6. Generalization
7. Recommendation
8. Outlining Parallel or Subsequent Developments

Peacock (2002)
Discussion Section

1. Information Move (background about theory/research/aims/methodology)
2. Finding
3. Expected or unexpected outcome
4. Reference to previous research
5. Explanation
6. Claim or contribution to research
7. Limitation
8. Recommendation

Yang and Allison (2003)

Results Section	*Discussion Section*
M1 Preparatory information (graphs, tables, statistical procedure)	**M1 Background information**
M2 Reporting results	**M2 Reporting results**
M3 Commenting on results • Interpreting results • Comparing results with literature • Evaluating results • Accounting for results	**M3 Summarizing results**
M4 Summarizing results	**M4 Commenting on results** • Interpreting results • Comparing results with literature • Accounting for results • Evaluating results
M5 Evaluating the study • Indicating limitations • Indicating significance	**M5 Summarizing the study**
M6 Deduction • Recommending further research	**M6 Evaluating the study** • Indicating limitations • Indicating significance/advantage • Evaluating methodology
	M7 Deduction from results • Making suggestions • Recommending research • Drawing pedagogic implication

Appendix II. The rhetorical structure of the R&D section in FSc&Tec RAs

MOVES	STEPS
Move 1: Background Information	**Step 1 Established knowledge about the topic of investigation or procedure** *The pH-stat method, has been commonly used to characterize the amount of free fatty acids (FFAs) released under simulated intestinal conditions. Generally, this methodology has been proved to successfully work with o/w emulsions, when fat digestion is catalyzed by lipases (Charoen et al., 2012; McClements, Decker, Park, & Weiss, 2008; Waraho et al., 2011).* (Food Bio01_Sp)
	[Step 2 Restating the aims] *The goal of the study was to identify differences between industrially processed and artisan Procedure GFB. Nappings.* (JofGast02_Eng) *In this work, three different proteases were used to solubilize cooked shrimp protein.* (FoodBio03_Sp)
	[Step 3 Occupying a niche] *Therefore, the development of efficient concentration processes to increase the ERG concentration is needed. In an attempt to solve this problem, we have studied the preparation of ERG-enriched extracts using WBM as a raw material and using enzymes and membrane technology for product recovery.* (FoodBio04_Sp)
	Step 4 Indicating procedure and materials [with references to previous studies] *Lyophilised and spray-dried powders with ERG concentrations of 3.4370.2 and 2.8470.3 mg ERG/g of dry weight, respectively, can be obtained from WBM, as we have previously reported (Cremades et al., 2012). This product features an ERG concentration higher than that of the starting material but lower than that found in other natural sources (Ey et al., 2007).* (FoodBio04_Sp)

Move 2 Reporting Results

Step 5 Presenting results plus mention of tables/graphs

The observed loss of ethanol and water is reported in Table 1. (JofGast04_Eng)

Step 6 Presenting results

For the vodka study, the mean ethanol loss in the flambé *(ignited) samples was 11.1 g, or 34.7% of the initial 32 g of ethanol.* (JofGast04_Eng)

Step 7 Presenting results with reference to previous literature

All milk samples showed a mono-modal particle size/number distribution with a number mean varying from 125 to 142 nm (data not shown), typical of that reported previously for bovine milk (O'Connell & Fox, 2000). This trend concurs with that reported by Gaygadzhiev et al. (2012), who found that the addition of 0.1% (w/w) sodium caseinate to skim milk did not significantly alter the apparent diameter, as measured using dynamic light scattering. (JofIntDairy05_Eng)

Move 3 Commenting on Results

Step 8 Comparing or backing up findings with previous studies

Tabilo-Munizaga and Barbosa-Cánovas (2004) studied the textural parameters of pressurized (400 and 650 MPa) and heat-treated (90 °C, 40 *min) PW and AP surimi gels. They found that the cohesiveness value was close to 1 in all treatments, but the test was performed to 25% compression in order to avoid fracture.*
Compared to both the studies, our study clearly distinguished the cohesiveness according to heating rates, this implies that the 50% compression rate would be more suitable to estimate the cohesive nature of gels. (Food-Bio04_Eng)

Step 9 Commenting on an (un)expected outcome

However the hardness of PW surimi-carrot mixed gels heated at 160 °C/min *was greater than that of heated at 60* °C/min *in carrot content of 9% ($P < 0.05$), this implies that the diced carrot interfere with the heat transfer during ohmic heating* (Food Bio04_Eng)

[Step 10 Justifying an (un)expected outcome]

Despite not having found the specific catalyst we were looking for, the impact of the indigenous microbes to

our environment is evident. In sequencing of all miso made in this environment, one common fungal strain has been found. While not traditionally associated with miso made in Japan, it is extremely common in other fermentative processes specifically the initial fermentation of cacao. (JofGast03_Eng)

The progress curves of lipolysis illustrate that the rate of the enzymatic reaction and the extent of fat digestion, are strongly dependent on both the pH of the medium and the biliary concentration used, as one would have expected. (FoodBio01_Sp)

[Step 11 Explaining results]

This effect could be partially due to the more stable structure of the protein network in the bubble walls due to the achieved protein crosslinking. (JofGast02_Sp)

Step 12 Commenting on results

The cohesiveness values of mixed gels heated at 160 °C/min *PW and 3* °C/min *AP sample were close to 1, indicating they are highly cohesive as an almost full recovery was obtained at the second compression.* (Food Bio04_Eng)

These results suggest that the dMFGM fraction requires a certain period of time to exert its maximal inhibitory effect on E. coli cellular association. Indeed, a previous study indicated that optimum binding of a particular coli O157:H7 strain, CL-49, to mucins occurs at 37 oC for 2 h at pH 6.5 (Sajjan & Forstner, 1990). Thus, the result observed in this experiment is likely due to the reduced time period in which dMFGM and E. coli strains were in contact, compared with the standard competition assay. This would lead to reduced competitive binding of dMFGM and HT-29 cell adhesins for E. coli O157:H7 cell receptors. (JofInDairy03_Eng)

Move 4 Evaluating Results

[Step 13 Summarizing results]

Summarizing, the three parameters influenced the velocity of the reaction with the major reaction rates reached at high intestinal pH (7 or 8). (FoodBio01_Sp)

[Step 14 Indicating limitations of the study]

As commented before, these zones in the spectrum belong to chlorophylls and water absorbance, respec-

tively. However, predictive models need to be investigated for use in quantitative analyses capable of identifying nectarine ripeness. (JofFoodEng03_Sp)
This particular method of quantifying residual foulant is analogous to the optical method completed in the fluorescence microscopy portion of the study. As another form of a 2-dimensional analysis, it can only detect how much surface area has foulant on it but not how tall said foulant is. (Jof FoodEng04_Eng)

[Step 15 Indicating significance of the study]

All this confirmed the great influence of these physiological parameters (intestinal pH and bile concentration) on the lipolysis of fat. (FoodBio01_Sp)

This reduction in processing time with TS may offer potential and significant advantages in the brewing industry in terms of productivity gains. (JofFoodEng_01_Eng).

[Step 16 Pointing to further research]

Further investigations are required to determine more information on the different glycan receptors used by each serotype which would allow the subsequent tailoring of anti-adhesives to target a wide variety of pathogens. (JofIntDairy03_Eng)

Further analysis using the AFM data height mapping should be the next step in quantification of nanofoulants on surface in a 3-dimensional approach. (Jof FoodEng04_Eng)

Appendix III. List of metadiscoural features

Attitudinal markers	Hedging verbs	Hedging adjectives	Hedging adverbs		Hedging nouns	Boosters
acceptable	calculate	about	a bit		probability	actually
admittedly	argue	almost	approximately	substantially	possibility	always
agree	deduce	apparent	basically	unlikely	assumption	believe
appreciably	estimate	around	commonly	usually	claim	certain
clearly	imply	feasible	considerably		estimate	clear
considerable	hypothesize	just	especially			clearly
considerably	infer	large /no large difference	fairly		Hedging expressions	conclude
completely	observe	little	frequently		to my/our	conclusive
correctly	predict	minor	generally		knowledge/to the best	confirm
curiously	propose	overall	just		of our knowledge	consider
desirable	report	partial	largely		at least	considerable
disagree	speculate	plausible	likely		as far as	consistent
dramatically	suggest	possible	mainly		in general	demonstrate
efficient	suppose	potential	mostly		unless	determine
effective	tend	presumable	often		from the point of view	emphasize
effectively		probable	only		in part	establish
entirely	Modal verbs	proposed	partially		under certain	evident
essential	can	quite	particularly		conditions	expect
even	could	relative	partly		although preliminary	highlight
(un)expected	may	slight	perhaps			hold
heavily	might	some	possibly			in fact
highly	should	tentative	potentially			indeed
important	would	uncertain	practically			indicate
interesting			presumably			found
interestingly	seem		primarily			know
of note	appear		probably			largely
prefer	will		quite			obviously
preferable	need		rarely			of course
remarkable			relatively			point out
significant			scarcely			potential
significantly			seemingly			prove
strongly			slightly			reveal
substantially			solely			show
surprising			some kind of			think
unsurprising			somewhat			true
surprisingly			somehow			
(un)usual						

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