

Extended Coding Scheme for Communicative Functions in Empirical Research Article Discussion (and/or Conclusion) Sections: Definitions and Examples

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Introduction

Move analysis, initially conceptualized by John Swales in the 1980s, is a fundamental component of genre analysis, which aims to dissect texts by identifying discursual units known as moves. These moves represent coherent communicative functions within texts, designed to facilitate readers' understanding of academic and professional writings. Swales' method has traditionally been applied to help non-native English speakers improve their academic reading and writing capabilities by recognizing and understanding the generic structures of research articles (RAs) and similar texts (e.g. Swales & Feak, 2012).

Over the years, numerous adaptations of Swales' methodology have been employed across various genres to uncover linguistic structures that characterize rhetorical moves. However, these adaptations have often focused on identifying broad rhetorical intentions at a relatively macro level, typically using the sentence as the unit of analysis, without sufficiently exploring the finer linguistic mechanisms at play. Such an approach often neglects the nuanced, micro-level textual functions that are crucial for detailed genre analysis, especially those performed by smaller textual units like phrases or clauses. This oversight can significantly limit the ability to conduct meaningful cross-cultural and linguistic comparisons, as it tends to overlook subtle differences in text construction across different languages and cultural contexts.

The need for a more granular level of analysis has become evident, leading to a reevaluation of Swales' original framework. The ENEIDA project, under my leadership as the principal investigator (PI), seeks to address this by emphasizing the importance of 'steps'—the specific manifestations of broader moves. This shift in focus recognizes that each text fragment, regardless of its size—from a phrase to a paragraph—, can simultaneously fulfil the functions of both a step and a move, with the latter being more variable depending on the analytical perspective. This dual functionality is crucial as it enables researchers to understand that what might be considered a specific communicative function (a step) could also serve as two or more different general communicative functions (moves), depending on the chosen analytical perspective or model.

This nuanced understanding helps to clarify a common misconception in move analysis: the relationship between moves and steps. It is essential to realize that any segment, whether a phrase, a sentence, or a paragraph, performs both functions simultaneously; the difference lies merely in the level of abstraction at which the communicative function of the text fragment is interpreted. By integrating this dual perspective into our methodology, we enhance the precision and depth of our textual analysis. Our focus on the steps, whose interpretations are more closely linked to the wording of the fragments, make our findings more applicable and insightful, particularly in cross-cultural and linguistic academic studies.

This modified approach to move analysis not only aligns more closely with the complex realities of textual construction across different languages and disciplines but also provides a robust framework for academic practitioners and researchers. It offers them a more detailed toolset for dissecting texts, which is critical for developing effective teaching strategies and improving academic writing and comprehension across diverse linguistic backgrounds. This methodology,

therefore, not only refines Swales' initial vision but expands its applicability and relevance in the increasingly global context of academic discourse.

In their paper, Moreno and Swales (2018) explore the challenges encountered by the ENEIDA annotators, or coders, in developing move-and-step schemes for annotating various sections of empirical research articles (ERAs) at the step level. The authors also discuss solutions that enhance the reliability and validity of these annotations. However, while their work utilized the Discussion (and/or closing) sections, which I was fully responsible for developing, to illustrate segmentation and annotation challenges, it included only limited definitions and examples of communicative functions within the coding scheme. Moreno (in press) builds on this by providing definitions for all general functions and examples for all specific functions. Yet, due to space constraints, definitions of specific steps remain undefined. The present document addresses this critical gap by offering detailed definitions within a comprehensive framework, thus significantly enhancing the utility and applicability of the coding scheme for both researchers and practitioners.

The extended coding scheme for the rhetorical annotation of empirical research article discussion (and/or conclusion) sections

The 'Extended Coding Scheme of Communicative Functions in the Discussion (and/or Conclusion) Sections of Empirical Research Articles: Definitions and Examples' is a resource that provides a systematic and validated guide for the rhetorical annotation of the Discussion (and/or Conclusion) (DC) sections in empirical research articles (RA). It consists of a taxonomy of communicative functions specific to these sections of the RA, with detailed definitions and examples in both English and Spanish. The presentation of the examples highlights expressions that have aided in inferring the illustrated communicative functions, thus enhancing the practical applicability of the tool. This taxonomy of functions is part of a more comprehensive resource, the ENEIDA codebook, which includes two basic elements: the coding scheme; and the segmentation protocol (Moreno & Swales, 2018) that facilitates its implementation in cross-linguistic comparisons. This annotation guide can be applied across various fields of knowledge, including life sciences, health sciences, social sciences, and other natural sciences.

Originally, the complete ENEIDA codebook was developed by Ana I. Moreno as part of the project 'Rhetorical Strategies for Publishing in International Scientific Journals from a Spanish-English Intercultural Perspective (I)', which was funded by the Spanish Ministry of Science and Innovation (FFI2009-08336/FILO). For its design and initial development, she utilized a pilot sample of 30 DC sections from empirical RAs in the Exemplary Empirical Research Articles in English and Spanish (EXEMPRAES) Corpus (Moreno, 2013). Additionally, as the project's principal investigator, Moreno coordinated the efforts of the ENEIDA team to develop coding schemes for other sections of the research articles, involving team members such as Burgess (2014), Gea-Valor (2014), Martín-Martín (2014), and Moreno herself (2014). Details about the bibliographic information of the pilot sample, including their impact factors, are available in Appendix A of Moreno and Swales (2018).

Moreno made minor revisions to the coding scheme for DC sections (see Table 1) after applying it to a broader sample of RAs in the social sciences, as described in Moreno (2021a). The bibliographical details of the corresponding sample of DC sections in the social sciences are available in Supplementary Material 1 in Moreno (2021a) and in the ULE repository (Moreno, 2020). The segmentation protocol used when applying the coding scheme, which facilitates a

rigorous and comparative analysis of communicative functions in various intercultural contexts, is detailed in Moreno and Swales (2018).

The validation of the *coding scheme* was carried out through an iterative process of intra- and inter-rater testing, with additional external validation. During the inter-rater testing, Ana I. Moreno trained an independent analyst, Silvia Ramos, to apply the coding scheme, which led to minor adjustments in the definitions to enhance the reliability of segmentation and annotation. External validation involved sending the segmented and annotated texts back to their original authors for feedback, resulting in minor revisions to some categories of the coding scheme. This rigorous validation process confirms the reliability and validity of both the coding scheme and segmentation protocol for use in annotating similar academic texts.

Table 1. Revised coding scheme for communicative functions in empirical research article discussion and conclusion sections



Revised coding scheme of communicative functions in empirical research article discussion (and/or other closing) sections


	CODE	COMMUNICATIVE FUNCTION
Announcements	AF	ANNOUNCING
	SEC	Announcing (sub)section
	EXT	Announcing or referring to an external source or another text part
	MSP	Announcing move, step or proposition
Move-steps proper	BGI	BACKGROUND INFORMATION FOR THE DISCUSSION
	KFS	Key feature of current study
	RWC	Information reported with citations
	POC	Information provided without citations
	SUM	SUMMARIZING OR RESTATING KEY RESULTS
	NRES	Presenting result neutrally
	CRES	Contrasting result with authors' own result
	HRES	Highlighting result
	COMM	COMMENTING ON KEY RESULTS OR OTHER FEATURES
	MEAN	Establishing meaning of result
	COMP	Comparing with previous research
	EXPL	Explaining results or other phenomena, or discussing effects
	PRED	Making a prediction
	REACT	Reacting to result or another feature
	EV	EVALUATING AND/OR SITUATING THE RESEARCH
	POS	Positive feature of current or proposed study
	CONTR	Contribution of current study
	LIM	Limitation of current study
	RELSTATE	Relevance of topic or positive evaluation of the state of knowledge or practice
	GAP	Gap or deficiency in others' research or practice, or problem
IMP	DRAWING IMPLICATIONS FOR FUTURE	
REC	Recommendation for future research or practice	
APP	Applicability or usability of outcomes	
HYP	Hypothesis for future research	
Elaborations	ELF	ELABORATING
	JUST	Justifying
	EXEM	Exemplifying
	CLAR	Clarifying

Note: This table is adapted from Moreno's (2021) minor revision of Table 2 in "Strengthening move analysis methodology towards bridging the function-form gap", p. 52, by A. I. Moreno and J. M. Swales, 2018. *English for Specific Purposes*, 50, 40-63. (Copyright 2017 Elsevier Ltd.). (Copyright 2022 by Ana I. Moreno).

Reference

Moreno, Ana I. (2021). Selling research in RA discussion sections through English and Spanish: An intercultural rhetoric approach. *English for Specific Purposes*, 63, 1-17. Supplementary material 3.

Table 2. Extended coding scheme for communicative functions in empirical research article discussion (and/or conclusion) sections: Definitions and examples

THE COMMUNICATIVE FUNCTIONS OF DISCUSSION (AND/OR CLOSING) SECTIONS IN ENGLISH AND SPANISH			
Discussion (and/or closing) sections (D/C) 		In the D/C section, writers announce what they are going to write about, remind readers of key features and results, draw on background knowledge, establish the meaning of key results, make comparisons with previous research, explain key results, discuss effects, make predictions, react to results or other features, evaluate their own study positively or negatively, state its contribution, evaluate previous research, assess the state in which the discipline or practice is/remains, make recommendations for future practice or research, suggest the applicability of their results or usability of their outcomes, hypothesize for future work, and/or elaborate on some of these ideas. There are two major types of communicative functions: announcing (AF) and core (CF) functions.	
Communicative function label (CODE)		Definitions	Examples in English and Spanish
Announcing function (AF)		AFs are text fragments that announce functions (or content) rather than expound new propositional material. There are three subtypes: SEC, EXT; and MSP.	
SEC	Announcing (sub)-sections (AF_SEC ¹)	In SEC, writers announce the purpose, or topic, of an upcoming (sub)-section without adding any new propositional meaning to the text.	Eng.: Discussion; Conclusion; Discussion and Conclusion; Remarks (AF_SEC) Sp.: Discusión; Conclusión; Discusión y afinidades (AF_SEC) Eng.: Temporal trends in...; Wider significance of... (AF_SEC)
EXT	Announcing or referring the reader to an external source or another text part (AF_EXT)	In EXT, writers refer the reader to an external source or another part of the text to locate the information mentioned in the current proposition (e.g. a discussion, analysis, figure, forthcoming research...).	Eng.: [(see Portes 1998, p. 15, for a detailed discussion of these effects).] (AF_EXT) (SSC08ENG) Eng.: [For an analysis of diagnostic characters of <i>T. taiwanicus</i> see: Pešić et al. (2011).] (7) (AF_EXT) (LFS06ENG) Eng.: [(as shown by figure of Zhang et al. 2012, Fig. 18).] (AF_EXT) (LFS06ENG)
MSP	Announcing moves, steps or propositional meaning (AF_MSP)	In MSP, writers announce a move, a series of instances of a step or specific propositional content, without adding new propositional meaning to the text. Instead, they help the reader to interpret the upcoming fragment(s) in three different ways: as a function logically related to a preceding function (e.g. reasons, results, conclusions, implications; comparisons); as a discourse function, indicating the communicative intent of the fragments (e.g. analyses, discussion, comments, recommendations); or as including a certain kind of propositional meaning (e.g. problems, contribution, limitations, ways to minimize a limitation, and so on).	<i>Logical function</i> Eng.: [We suggest that there may be two reasons for this.] (AF_MSP) (SSC08ENG) Sp.: [Entre las conclusiones de carácter más general que se extraen de la investigación se pueden mencionar las siguientes:] (AF_MSP) (SSC02SP) <i>Discourse function</i> Sp.: [Por último, resulta oportuno hacer algunos comentarios sobre este estudio.] (AF_MSP) (SSC03SP) <i>Propositional meaning</i> Eng.: [There are several limitations to the present study.] (AF_MSP) (HCS04ENG) Sp.: [El estudio tiene, sin embargo, algunas limitaciones.] (AF_MSP) (SSC03SP)

¹ To simplify presentation, just the final parts of the code for each specific communicative function are provided as required (e.g. SEC and AF_SEC both imply D/C_AF_SEC; PRED and COMM_PRED both imply D/C_COMM_PRED).

Core function (CF)		CFs, or core functions , are text fragments realized by at least one proposition containing new propositional meaning from which a competent academic reader may infer some relevant communicative function in relation to the overall purposes of the section or to a previous fragment with a relevant communicative function. There may be two subtypes: STEPS and ELFs ² .	
MOVE_STEP		STEPS , or nuclear functions , are text fragments realized by at least a proposition, a proposition complex or an even larger fragment of text containing new propositional meaning from which specific communicative functions can be inferred by a competent reader of the genre at a low level of generalization. They are perceived as essential to advance the text in the direction expected to achieve the purpose(s) of the section in which they appear and are grouped into five MOVEs according to their overall function:	
Background information for the discussion (BGI)		In BGI, writers resituate the discussion of results and support their ideas to develop their arguments by providing background information that does not fulfil any of the other functions by re-stating key features of the current study, reporting information from other studies with citations, and providing information without citations. There are three possible steps:	
KFS	(Re-)stating key features of the current study (BGI_KFS)	In KFS, writers (re-)state or remind readers of key features of the current study other than the results in a neutral way (e.g. an aim, question, hypothesis, topic, theoretical claim, procedure, type of analysis, taxonomy, indicator, data, material, instrument, participants, discussion, or perspective / approach taken in making some observation or claim).	Eng.: [Only one set of results from the two sessions performed by therapist A were used in calculating the inter-rater reliabilities,] (BGI_KFS) [to avoid biasing the statistical outcome.] ³ (HCS04ENG) Sp.: [<p>Por otro lado, si se presta atención al poder explicativo que tiene cada uno de los capitales sobre los dos tipos de innovación tecnológica,] (BGI_KFS) [observamos que el capital relacional explica en mayor proporción los resultados de innovación de producto,] [mientras que el capital social posee un mayor poder explicativo sobre la innovación de proceso.] (SSC08SP)</p>
RWC	Reporting background information with citations (BGI_RWC)	In RWC, writers report information (e.g. results, methods, significance, aims, research questions, hypotheses, theoretical frameworks, topics, achievements, discussions, evaluations, explanations, implications) from previous studies or other sources that writers use to support their own ideas and build their arguments. In reported propositions, citations are included or can be recovered from the surrounding text.	Eng.: [Tilkat et al. (2008a) reported that IBA was the most effective auxin for root formation from shoot regenerated from apical tips of staminate <i>P. vera</i> L.,] (BGI_RWC) whereas higher levels of auxins encouraged callus formation from the cut ends of the explants. (BGI_RWC) (elliptical reporting) (ONS05ENG) Sp.: [Asimismo tienden a comportarse de forma desafiante y con crueldad, sin temor a las consecuencias punitivas de su conducta, y a atribuir sus propios males y la responsabilidad del maltrato a la víctima (Dutton, 1998; Stark y Flitcraft, 1996).] (BGI_RWC) (SSC03SP)

² Note that the acronym ELF, which usually stands for English as a Lingua Franca, is used here to denote *Elaborating functions*, following Moreno and Swales's (2018) coding scheme.

³ In these examples, the meaningful segments in each extract are presented in square brackets. Those illustrating the function of focus are followed by a code in brackets indicating their function. The whole extract is followed by another code in brackets indicating the source text it has been drawn from (see Appendix A).

POC	Providing background information without citations (BGI_POC)	In POC, writers define, conceptualize, describe (e.g. some object, place, phenomenon, situation, experience, people or entity, relationship between variables, achievement, method, consequence), acknowledge a solution to a problem existing prior to the study, make a claim or draw a conclusion about some phenomenon without including citations.	Eng.: [We suggest that there may be two reasons for this]. [The first could be that...] [although social capital makes inbound spillovers flow more easily,] (BGI_POC) [... it also facilitates knowledge leakage—] (SSC08ENG) Sp.: [En cuanto a las víctimas de la violencia grave, [que se suelen sentir con frecuencia en peligro de muerte,] (BGI_POC) éstas surgen más fácilmente en circunstancias de vulnerabilidad, como..., o de dependencia económica, un consumo de drogas o un entorno de soledad (Amor et al., 2002).] (SSC03SP)
Summarizing or restating key results (SUM)		In SUM, writers remind readers of the key results of their study, which are usually expressed as particular observations on the data shown as evidence. There are three possible steps:	
NRES	Presenting results neutrally (SUM_NRES)	In NRES, writers summarize or restate the evidence they present as true after carrying their study in a neutral way. Neutral results may be descriptive, comparative (within the same proposition) or about the significance of causal relations or associations. They are sometimes presented in addition to other relevant results and as evidence of major findings. This step only occasionally contains numerical or quantitative information (as this has been offered in the results section).	Eng.: [<p>A significant overall increase in the active range of axial rotation was seen following manipulation,...] (SUM_NRES) (HCS04ENG) Sp.: [La violencia más grave surge cuando la pareja está separada o en trámites de separación, sobre todo si ésta se desarrolla a iniciativa de la víctima y viene acompañada de conductas de acoso, y cuando se convive con hijos, especialmente si son de relaciones anteriores de la víctima,...] (SUM_NRES) (SSC03SP)</p>
HRES* (*This is a stylistic variant of NRES)	Highlighting results (SUM_HRES)	In HRES, writers summarize or restate a piece of evidence they present as true after carrying out their study, making it appear more remarkable than others.	Eng.: [Importantly , they do not damage flowers when they are feeding.] (SUM_HRES) (LFS03ENG) Sp.: [Un aspecto muy significativo es la sobrerrepresentación de agresores y víctimas extranjeros inmigrantes (sobre todo, latinoamericanos y africanos),] (SUM_HRES) [que supone una tasa siete veces mayor que la que sería esperable en función de su peso demográfico en el País Vasco.] (SSC03SP)
CRES	Presenting results in contrast to other results in the authors' own study (in a new proposition) (SUM_CRES)	In CRES, writers summarize or restate the evidence they present as true after carrying their study in contrast to other relevant results from their own study reported in a preceding proposition.	Eng.: [However , the VRQ allele showed no significant association with lamb survival] (SUM_CRES) [which is notable: ...] (LFS02ENG) Sp.: [No obstante, a pesar de no compartir un mismo óvulo,] (SUM_CRES) [la creatividad parece implicar aspectos sintéticos, analíticos y prácticos de la inteligencia] (SSC06SP)
Commenting on key results or other features (COMM)		In COMM, writers comment on their results in various ways: establishing the meaning of key results; comparing them (or other features) with those of previous research; explaining them or discussing effects; making predictions; and/or reacting to them or other features. There are five possible steps:	

MEAN	Establishing the meaning of results (COMM_MEAN)	In MEAN, writers establish the meaning of results by drawing logical inferences that cannot be observed in the evidence presented. This is typically done without mentioning data, correlations, or making comparisons. It often serves to express (new) conceptualizations of given phenomena or make empirically supported claims.	Eng.: [...the fact that they benefit the most from social interaction effects is further empirical confirmation that this contextual knowledge factor is a key advantage for a local economy.] (COMM_MEAN) [It favors greater participation in the innovation process of otherwise more disadvantaged firms,] [thus generating further positive spillovers in the local context.] (SSC08ENG) Sp.: [Esta invasión se produce mediante un proceso de peninsularización primero e insularización después del hayedo, hasta producir una situación de senectud con muerte final del árbol.] [Este proceso, [no detectado hasta ahora,] representa una evidencia del cambio climático y de los usos del suelo característicos de las últimas décadas.] (COMM_MEAN) (LFS08SP)
COMP	Comparing with previous research or with initial hypotheses (COMM_COMP)	In COMP, writers compare results of their study with results, phenomena, objects, theories, or methods reported in previous research or with their own hypotheses, whether to express agreement, similarity, consistency, or support, or to express disagreement, difference, or lack of support. They may also point out (lack of) comparability with previous research. Citations are normally included in the scope of the proposition itself or are easily retrievable from the surrounding text.	Eng.: [In accordance with prior research, we found a strong positive relationship between parental education and children's language and arithmetic performance in successive primary school grades.] (COMM_COMP) (SSC04ENG) Eng.: [Our story and the suggested micromechanisms fit nicely with one of the main results of the spillover literature:] (COMM_COMP) [to absorb spillovers from the local environment, a degree of ... is needed.] (SSC08ENG) Sp.: [... resultados que concuerdan con los de estudios previos 4, 5, 8, 26, 27.] (COMM_COMP) (HCS02SP) Sp.: [Dichos resultados refuerzan los hallazgos obtenidos en otros estudios , en los que se observó un mayor deterioro de la CVRS y una mayor presencia de depresión entre los pacientes con mayor número de complicaciones 3-8.] (COMM_COMP) (HCS02SP)
EXPL	Explaining results or other features, or discussing effects (COMM_EXPL)	In EXPL, writers explain what has / might have contributed to given results, or other phenomena, what their effect may be / is or the factors to which they are / may be related. They reject alternative explanations, negate the relevance of a given explanation to other situations, or even recognise an unexplainable result. These propositions may or may not be accompanied with citations. Explanations may be presented as speculations, or explanatory hypotheses. While in MEAN inferences are drawn directly from the results, in EXPL writers discuss connections between variables and/or phenomena.	Eng.: [therefore comparison of results should be interpreted with caution.] [Some of these differences could be explained by difference in main characteristics of studied subjects such as mean age, duration of diabetes and comorbidities.] (COMM_EXPL) (HCS02ENG) Sp.: [Por la primera, se constató que las diferencias de rendimiento entre alumnos no repetidores y repetidores (mayor/menor aptitud académica) disminuyen en escuelas con indicios de clima académico negativo (alto abandono y bajo esfuerzo o cumplimiento de los alumnos)] [y ese acortamiento se debe principalmente a la caída del rendimiento promedio de los alumnos no repetidores.] (COMM_EXPL) (SSC04SP)

PRED	Making predictions (COMM_PRED)	In PRED, writers tentatively state what phenomenon will happen or is expected to happen in future considering the results or other features of the study. Predictions can be derived from implicit or explicit hypotheses by means of deduction. When this happens, the implication is that, if a hypothesis is true, the predicted future observations derived from it should occur. Writers occasionally imagine what the results should have been like or would have been like in the past or will be like in future in different circumstances.	Eng.: [In other words, out of 1000 lambs born alive, about 22 more lambs are expected to die if they are of the ARR/ARR genotype than if they are of the ARR/ ARQ genotype.] (COMM_PRED) (LFS02ENG) Sp.: [De esta manera, las empresas conseguirán ventajas en cuanto a reducción de costes de obtención de recursos necesarios, sinergias o velocidad de desarrollo de nuevos productos, siendo las empresas externas una fuente de... y, por lo tanto, un posible determinante de creación de valor para dicha empresa.] (COMM_PRED) (SSC08SP)
REACT	Reacting to results or other features (COMM_REACT)	In REACT, writers make intellectual or emotional appreciations on the results or other features. These evaluative comments focus on whether these are (un)expected, surprising, consistent, difficult to accept, worrying, especially true, important, complex, and so.	Eng.: [In comparison with laser photocoagulation, surgical excision does not seem to damage the overlying neurosensory retina or affect the optic nerve.] [one of our concerns when applying PDT in this area.] (COMM_REACT) (HCS07ENG) Sp.: [Sin embargo, que el número absoluto de casos graves (n = 812) sea más bien alto y que ... revista tal nivel de gravedad que haya supuesto un feminicidio o el riesgo de cometerlo es sumamente preocupante.] (COMM_REACT) (SSC03SP)
Evaluating and/or situating the research (EV)		In EV, writers position their research in the field, making the contribution of their study explicit in relation to past research; evaluating specific aspects of their study negatively and/or positively; noting gaps or deficiencies in others' research or practice, or identifying a problem; and/or assessing the relevance of the topic positively or evaluating the state of knowledge or practice in the discipline. There are five possible steps:	
CONTR	Stating the contribution of the current study to the discipline or practice (EV_CONTR)	In CONTR, writers <i>explicitly</i> state the way in which their current study adds to the discipline or area of practice or application, whether for its novelty, for improving the state of knowledge or the existing methods, for yielding some valuable data, outcome or solution, or for facilitating future research. The focus here is on the novelty, improvement, or addition.	Eng.: [The data from the completed 11-city risk factors for... allowed us to revise the original DA] [by adding four items that were predictive of IPH] (EV_CONTR) [and rewording items for clarity] (EV_CONTR) [as well as develop a weighted scoring for the DA] (EV_CONTR),...(SSC03ENG) Eng.: [To our best knowledge it seems that this is the first population-based study to investigate HRQoL of patients with T2DM in MENA region;] (EV_CONTR) (HCS02ENG) Sp.: [En este sentido, el presente estudio contribuye con resultados que enfatizan las ideas ..., contra las ideas que defienden el... (Chesbrough, 2003).] (EV_CONTR) (SSC08SP)
LIM	Pointing out negative features or limitations of the current study (EV_LIM)	In LIM, writers evaluate features of the current study negatively (e.g. the lack of data or information, some imperfect feature of the method or approach taken). They may also state how methods could have been better or what was not done that should have been done.	Eng.: [Another limitation of this paper is that we focus on only one period.] (EV_LIM) (SSC08ENG) Sp.: [Cabe destacar, como limitación de la evaluación del impacto del control glucémico en la CVRS, el elevado porcentaje de pacientes sin información en dicha variable.] (EV_LIM) (HCS02SP)

POS	Pointing out positive features of the current study (EV_POS)	In POS, writers point out a given feature of the current study (sample, indicators, analyses, framework, approach, study design, explanatory or predictive power, variable control, or choice, expected outcome, exposition, or even limitation) implying that it is positive; or they highlight having achieved what was intended, done something challenging or important, or not done something impossible.	Eng.: [While the technique employed was consistent] (EV_POS), [the lack of consistency between ... would suggest that...] (HCS04ENG) Sp.: [No obstante, se ha tratado de minimizar esta limitación de diversas formas:] [a] por medio de un curso de formación para homogeneizar criterios a todos los responsables de las comisarías a cargo de los investigadores;] (EV_POS) [b) ...] (EV_POS) (SSC03SP)
GAD	Noting gaps or deficiencies in others' research or practice or identifying a problem (EV_GAD)	In GAD, writers point out or remind readers of some gap, problem, or deficiency in previous research (e.g. our limited knowledge of some phenomenon, the lack of attention given to some phenomenon, the narrow scope of a study, the problems with some argument or some mis conceptualisation). They may also refer to previous documents, practice or situations or announce the problem with a possible future study.	Eng.: [Nectar volume and concentration has long been considered to be a useful predictor of pollinator identity,] [although there are numerous caveats to the argument that there is a simple relationship between the energetic content of a nectar source and the energy requirements of its pollinators (Cruden et al., 1983).] (EV_GAD) (LFS03ENG) Sp.: [Aunque existen trabajos previos que señalan que hombres y mujeres utilizan distintos procesos de descubrimiento de oportunidades], [dichos trabajos no señalan si estas diferencias en los procesos de identificación suponen un mayor descubrimiento de oportunidades por parte de los hombres o de las mujeres (DeTienne y Chandler, 2007).] (EV_GAD) (SSC11SP)
REL STATE	Stating the relevance of topic or evaluating the state of knowledge or practice positively (EV_RELSTATE)	In RELSTATE, writers state the relevance of the topic (e.g. its importance or interestingness), the need to focus on it or to ask certain research questions; and/or they make, or remind readers of, a positive evaluation of the state of knowledge, past research, or practice.	Eng.: [<p> The academic advantage of children from high socio-economic backgrounds over children from low socio-economic backgrounds is well established in educational inequality research (e.g. Alwin and Thornton, 1984; Boudon, 1974; Erikson and Jonsson, 1996; Sammons, 1995).] (EV_REL STATE) (SCS4ENG) Sp.: [<p> Este estudio destaca el importante papel que pueden jugar el capital relacional y el capital social dentro del proceso referido a la innovación de producto y a la innovación de proceso en el sector español manufacturero intensivo en conocimiento,] (EV_RELSTATE) (SCS8SP)</p></p>
Drawing implications for future (IMP)		In IMP, writers draw implications from their results/study for future of various kinds: they make recommendations for future practice and/or research; suggest the applicability of the current study/results or the usability of its outcomes; and/or hypothesize for future studies. There are three possible steps:	
REC	Making recommendations for future research or practice. (IMP_REC)	In REC, writers make recommendations for future research, for future practice, policy, or implementation, or for interpreting the current results. They may also advance the research that they are planning to do or the research they think could be done.	Eng.: [Therefore much more attention should be paid to main determinants of HRQoL] (IMP_REC) [to identify and implement appropriate policies for achieving better management of diabetes and ultimately improving the quality of life of diabetic patients in this region.] (HCS02ENG)

			Sp.: [Además sería necesario incorporar parámetros cinéticos y resultados clínicos junto a los parámetros cinemáticas] (IMP_REC) [para un mejor entendimiento de la manipulación vertebral.] (HCS04SP)
APP	Suggesting the applicability of results or usability of outcomes (IMP_APP)	In APP, writers suggest or remind readers of the (future) applicability of the results or the usability of the outcomes of the study in a given area of application.	Eng.: [The DA can help her come to a more realistic appraisal of her risk (IMP_APP) [as well as * improve the predictive accuracy of those who are trying to help her.] (IMP_APP) (SSC03ENG) Sp.: [Así, respecto a las posibles implicaciones directivas, esta investigación puede ser de utilidad para los directivos que pertenezcan a empresas manufactureras de alta y media-alta tecnología,] (IMP_APP) (SSC08SP)
HYP	Hypothesizing for future research (IMP_HYP)	In HYP, writers speculate about a relationship between variables (e.g. by stating that some phenomenon might influence or may be related to something else; that it could make something else happen; or that it may be an indirect cause of it) to be tested in future research.	Eng.: [In this paper, we focus on R&D processes], [an important element in the innovation process,] [but regional social capital might influence the effectiveness of other of the firm's external relations, including....] (IMP_HYP). [Another avenue for future research would be to ...] (SSC08ENG) Sp.: [Habría que valorar, por tanto, el papel de la polinización por insectos diurnos (...) en (...) y su asociación a ...] [Cabría entonces barajar la hipótesis alternativa de que el síndrome de ...sea una consecuencia indirecta de..., sin jugar un papel importante en ...] (IMP_HYP) (LFS03SP)
Elaborating function (ELF)		ELFs, or elaborating functions, are text fragments containing at least one proposition that primarily serves to support a move or step rather than acting as independent steps. Their relevance is perceived in relation to a neighbouring proposition rather than to the purpose(s) of the section in which they occur. In that sense, although ELFs add new propositional meaning, they do not contribute to moving the text forward.	
JUST	Justifying what is stated in a neighbouring proposition. (ELF_JUST)	In JUST, writers provide the reasons for doing or stating what is expressed in a related proposition (e.g. they may justify a recommendation, an inference, a limitation, some aspect of the method, a comparison, a rejection, a given explanation, a positive comment, not using an alternative procedure, a suggestion for applying results, a prediction). The justification for a recommendation is often expressed as the purpose to be achieved with the recommended action.	Eng.: [Only one set of results from the two sessions performed by therapist A were used in calculating the inter-rater reliabilities,] [to avoid biasing the statistical outcome.] (ELF_JUST) (HCS04ENG) Sp.: [En segundo lugar, dado que nuestros resultados indican que la benevolencia percibida es un componente relevante de la confianza,] (ELF_JUST) [la política de comunicación de la entidad deberá transmitir un mensaje de búsqueda del beneficio mutuo y en los que se insista en que el interés del usuario está presente en la empresa.] (SSC07SP)
EXEM	Exemplifying what has been stated in a previous proposition (ELF_EXEM)	In EXEM, writers provide (an) example(s) to show the meaning, or truth, of a previously stated proposition more clearly. This excludes the provision of results to support a claim stating the meaning of results.	Eng.: [in regions with low levels of social capital, it is necessary for firms to invest more in accumulating their own firm-specific social capital.] [For instance, they can promote meetings, partnerships, and communication with other firms and organizations—both inside and outside the local region.] (ELF_EXEM) (SSC08ENG)

			Sp.: [De este modo, considerando el complejo entorno actual,] [es clave que las empresas se adapten rápidamente a los cambios que van surgiendo a lo largo del tiempo,] [y una manera de hacerlo es contar con conocimiento externo que facilite tal adaptación.] (ELF_EXEM) (SSC08SP)
CLAR	Clarifying what has been stated in a previous proposition (ELF_CLAR)	In CLAR, writers give more details or re-state the meaning of a previously stated proposition in other words to make it clearer or easier to understand. Clarifications sometimes involve evidence that supports a previously mentioned claim.	Eng.: [We theorized that regional social interaction helps shape product innovation through localized connectivity and trust effects,] [and we found empirical support for the significance of regional social capital, in the form of social interaction, as an important driver of firm-level product innovation.] [In other words , we provide evidence that location matters:] (ELF_CLAR) (SSC08ENG) Sp.: [Cuando hemos estudiado las diferencias en creatividad entre superdotados y alumnos no excepcionales,] [ambas capacidades muestran un mayor solapamiento,] [es decir , se podrían entender como un fenómeno unitario donde la creatividad es una expresión de la inteligencia.] (ELF_CLAR) (SSC06SP)

Note: Table 2 represents an extension of Moreno's (2021b) minor revision of the coding scheme for communicative functions in empirical research article discussion (and/or other closing) sections. This extended version includes detailed definitions and examples to further enhance the application of the coding scheme. This document is copyrighted 2016, 2024 by Ana I. Moreno. It should be cited as follows:

Moreno, A. I. (in press). Making room for research promotion in RA discussion/closing sections: A Spanish-English comparative approach. *English for Specific Purposes*. Appendix B: Supplementary data. Extension of the coding scheme for communicative functions in empirical research article discussion (and/or other closing) sections: Definitions and examples. Retrieved from <https://buleria.unileon.es/handle/10612/15195>

As can be seen, the coding scheme for empirical RA Discussion and Conclusion (DC) sections includes 25 specific communicative functions, which are classified into seven major categories of general communicative functions: 1) Announcing Functions; **2) Background Information for the Discussion; 3) Summarizing or Restating Key Results; 4) Commenting on Key Results or Other Features; 5) Evaluating Research; 6) Drawing Implications for the Future;** and 7) Elaborating. Those functions highlighted in bold correspond to the moves proper. These are conveniently placed in the central part of the taxonomy, as the steps realizing these moves are the nuclear communicative functions that help move the DC section forward towards achieving its expected purpose(s). The other two groups of functions—announcements and elaborations—revolve around these central moves. According to the strengthened move analysis proposed in Moreno and Swales (2018), when a segment is assigned to a specific communicative function in this coding scheme, it is simultaneously assigned to one of the general communicative functions, numbered 1) to 7) above.

Foundational research and subsequent studies based on the EXEMPRAES Corpus annotations have extensively utilized this type of annotation and segmentation work. For further details about the segmentation protocol, refer to Moreno and Swales (2018). Various studies of Spanish-English intercultural rhetoric based on the social science sample of empirical RA DC sections in English and Spanish from the EXEMPRAES Corpus have been conducted, including recent

works by Moreno (2022a, 2022b, in press). The latest of these studies has been part of a project recently funded by the University of León (2021/00152/001).

Conclusion

Given the valuable comparative research between English and Spanish that has emerged from applying this coding scheme, in conjunction with the segmentation protocol described in Moreno and Swales (2018), it is recognized as a fundamental scientific resource for advancing knowledge about intercultural rhetoric and the use of English and Spanish in scientific publications. Applying the coding scheme to a broader sample of texts will enable even more rigorous comparisons of Spanish-English scientific rhetoric. Furthermore, it can be used to establish more focused comparisons of the local rhetoric (Moreno, 2022b) within specific sequences of communicative functions and the use of linguistic resources within these functions to uncover function-form correlations. Additionally, the entire codebook will serve as a model for designing other codebooks that facilitate the study and intercultural comparison of various textual genres.

Training and collaboration opportunities

Recognizing the complexities of applying this coding scheme across different linguistic and cultural contexts, Dr. Ana I. Moreno offers specialized training sessions. These sessions are designed to help researchers adapt the methodologies of the codebook for diverse academic and professional applications. Training aims to ensure participants fully grasp the theoretical and practical aspects of the codebook, aid researchers in customizing it for various languages and specific disciplinary needs and cultivate skills in intercultural rhetoric and comparative analysis. This training is essential for academics, researchers, multilingual research teams, as well as graduate students and faculty members in fields such as linguistics and communication studies who require rigorous textual analysis methods.

Training sessions include accessible webinars and intensive in-person workshops, providing detailed guidance and hands-on practice. Participants are invited to take advantage of these opportunities to elevate their research capabilities, enhance their analytical skills, and contribute more significantly to global academic discussions. For more information on fees, to request a session, or to organize a custom workshop, please contact Dr. Ana I. Moreno directly at ana.moreno@unileon.es.

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Bionote

Ana I. Moreno is a Full Professor of English Studies, specializing in Spanish-English Intercultural Rhetoric of Academic Discourse, at the Universidad de León, Spain. She served as the Principal Investigator of the first ENEIDA project, focusing on Rhetorical Strategies to Get Published in International Scientific Journals from a Spanish-English Intercultural Perspective. Professor Moreno was the primary developer of the ENEIDA segmentation protocol (Moreno and Swales, 2018) and the main developer and analyst of the coding scheme for Discussion and Conclusion (DC) sections. An experienced practitioner in the field of communicative functions annotation, she has guided numerous master's students in developing codebooks for various educational genres. Her extensive background in academic discourse analysis in both English and Spanish ensures that workshop participants receive the highest quality of training, particularly in developing codebooks for various genres and sub-genres across languages. For further details on her research contributions, please visit her [ORCID](#) profile and [Google Scholar](#) page.

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