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**Genre analysis of English article abstracts in Ecuadorian  
and North American journals: A contrastive study**

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## ***1. Theme, aims, structure and theoretical background of the dissertation***

### ***1.1. Theme, aims and structure of the dissertation***

The wide use of English in academic and professional settings has resulted in paying extensive attention to how research article abstracts (RAAs) written in English introduce the scope of the paper within the scientific discourse community. Much research in this genre has documented (a) how writers from distinct linguistic and cultural backgrounds make use of the language to construct the text, (b) whether or not the rhetorical organization of the RAAs meets local conventions, and (c) how language expressions used in those texts enliven various contexts. With the massive scientific production nationally and internationally, RAAs have become the most read research literature for annotations and genre-based analyses, as Swales and Feak (2009) stated. In effect, academically, 90% of research articles include English abstracts in their papers (Lorés, 2014). Approximately 45% of academic journals use English to present their RAAs, and most importantly, non-English-speaking journals, in the pressure to hook the local and international audience, require an English-translated version of the original RAAs.

The main aim of this dissertation is to compare English RAAs published in North American and Ecuadorian journals (henceforth NA&EJ), considering humanities and sciences. Basically, it examines the rhetorical organization and the linguistic realization of English RAAs in the education, sociology, electronics, and agronomy disciplines. Based on the results, it suggests the emerging move structure as well as writing instructions for the accurate construction of RAAs. The theoretical starting point for the research analysis and writing suggestions is the model developed by Hyland (2000), which includes the sections: introduction, method, purpose, results, and conclusions (IMPRC). The contrastive rhetoric shows that the move/step analysis developed originally to study introductions and other sections of academic texts can also be functional for RAAs. It answered the following main research questions (RQ):

Does the rhetorical structure of English RAAs published in North American journals vary from those of the Ecuadorian ones? If they have no variation, what is the most frequent move structure in NA&EJs across the four disciplines, considering humanities and science fields?

Are there any significant syntactic structure (type of sentences) differences between English RAAs published in North American journals and those published in Ecuadorian ones, considering the humanities and science fields? If so, what are those differences?

Do English RAAs published in North American journals show higher or lower lexical richness than those published in Ecuadorian ones? If so, in what lexical indices do they differ from their Ecuadorian counterparts?

## ***1.2. Structure of the dissertation***

The current written doctoral dissertation is divided into five chapters. The first chapter states the scope of the research, introduces issues on investigating academic written texts, and describes the research objectives and significance and research questions in carrying out the study. Chapter 2 sets the scene by grounding an overview of the theoretical and empirical literature in various domains related to the current research study. It highlights the genre theory in terms of research background and theoretical support, which are the basis for the dissertation, and constitute the umbrella for the analysis of RAAs from the four different disciplines and two fields.

Chapter three reports on details the quantitative research methodology employed in the contrastive study. It presents the background of the result-oriented procedures by describing the research design, data, and sources of the data. Here, special emphasis is given to on explaining data collection methods and techniques for a quantitative analysis.

Chapter four presents the quantitative research outcomes obtained from the quantitative data analysis. These findings constitute two parts: The first part provides the research results concerning the rhetorical organization of RAAs in both Anglophone (North America) and non-Anglophone (Ecuador) publishing contexts. Part two describes the linguistic realizations of RAAs in NA&EJ across the four disciplines mentioned in previous chapters. This analysis reports the syntactic complexity of RAAs, on the one hand, and the lexical richness of those texts on the other.

Finally, Chapter five summarizes the relevant and significant research findings. It discusses the research outcomes from a quantitative perspective. Then, it defines linguistic implications (didactic and pedagogical), outlining didactic ideas, tips and suggestions for writing accurate academic texts. The quantitative analysis and writing suggestions respond to the main research questions about the rhetorical organization and linguistics realizations of RAAs. This chapter ends defining the limitations of the dissertation study and, finally, drawing conclusions and implications for further research on the genre RAAs, particularly in Ecuador.

## ***1.3. Theoretical background***

Abstracts are short texts used to summarize research studies aimed to be introduced to a committee. Most of the research that the *genre* abstracts condense are methods, brief background knowledge,

and results of dissertations, research articles, and scientific speeches. RAAs, considered as independent discourses, vary in their communicative function, rhetorical organizations, and their linguistic realizations. The function of abstracts in scientific discourse has gone from distillation (Swales 1990), to act as a report in miniature (Jordan 1991), mini-text (Huckin, 2001), and summary (Kaplan et al., 1994) up to “selective representation of the exact knowledge of an article’s content” (Hyland 2004: 64) and “navigation tools, essential time-savings, and information-managing devices” (Lorés, 2016: 135).

Considering abstracts as an important part-genre of the research articles (RAs), Swales (1990: 58) claims the following concepts to be accounted for a genre analysis:

A genre comprises a class of communicative events the members of which share some set of *communicative purposes*. These purposes are recognized by the expert members of the parent *discourse community*, and thereby constitute the rationale for the genre. This rationale shapes the schematic structure of the discourse and influences and constrains choice of content and style. Communicative purpose is both a privileged criterion and one that operates to keep the scope of a genre as here conceived narrowly focused on comparable *rhetorical action*. In addition to purpose, exemplars of a genre exhibit various patterns of similarity in terms of *structure, style, content* and *intended audience*.

Abstracts being a part-genre of the RAs that include *moves* and persuade readers that the whole article is worth reading (Hyland 2000), should be informative enough by showing effective rhetorical organization, content, and style. According to Swales (1990), a *move* is a functional unit that illustrates the organized discourse and the linguistic features that constitute the content. Moves, then, place the communicative purpose of the texts, attesting disciplinary writing conventions wherein the communicative purpose of a genre is accomplished through the rhetorical moves and their linguistic realizations. Research on article abstracts examining their rhetoric (e.g., Hyland 2000; Martín 2003), thematic organization (e.g., 2016), lexical and grammatical choices (Douglas, 2012) across disciplines and languages has reported variation in their rhetoric, content, and style.

Taking into account various aspects of the genre theory and the methodology suggested by Swales (1990) and Hyland (2000), the present contrastive analysis of RAAs in NA&EJ considers the *result-oriented* approach. Hyland’s (2000) move model was functional to analyze the characteristics of RAAs; it served as the basis for discovering common grounds in both publication contexts, as NA&EJ.

## **2. The research**

When writing RAAs, the rhetorical organization (*introduction, purpose, method, result and conclusion*), structure, style, and intended audience in conjunction shape abstracts’ information

content. The genre analysis focused on the publication content of the abstracts rather than on the writers themselves. It followed Hyland's (2000) move model to set up common ground and differences in the rhetorical organization. As a *move* may be in one or more sentences, the analysis relies on their functions and communicative goals. It applied the top-down and bottom-up approach to categorize moves and establish the boundaries between them. The researcher and a second human coder supported the move coding reliability; it consisted of simultaneous coding round with intervals in between. Then, the move coding was compared to see to what extent these match and ground the results.

The written corpora consist of 240 RAAs published in NA&EJ between 2010-2018. The linguistic realizations of RAAs outlined their syntactic complexity and lexical richness. The English corpora underwent software-driven text analysis —*it measured the syntactic complexity, on the one hand, and the lexical richness on the other*. L2 Syntactic Complexity Analyzer -L2SCA (Lu, 2010) gauges the 14 syntactic dimensions covering (1) length of production units, (2) amounts of coordination, (3) amounts of subordination, and (4) degree of phrasal sophistication. The complete lextutor vocab-profile (Cobb, 2006) examines the lexical richness, namely lexical density (LD), lexical variation (LV), and lexical sophistication (LS). The output texts of the linguistic analyzers were mined using SPSS Statistics to determine the syntactic complexity and lexical richness of the RAAs in NA&EJ.

### ***3. Summary of the results and major conclusion of the research study***

#### ***3.1. Results of the study***

The contrastive analysis of the data has yielded statistically significant differences among the two sub-corpora. Journal RAAs in NA&EJ include a non-hierarchical eight-move structure with four major communicative purposes. Their major functions are (Move 1) announcing the thematic focus of the work, (Move 3) introducing the purpose of the study, (Move 4) presenting the methods used throughout the research, and (Move 5) describing the main results. Aside from the four main stable moves, there are some other additional communicative purposes which are realized to (Move 2) communicate the background information, (Move 6) summarize conclusions, (Move 7) suggest recommendations, and (Move 8) establish implications for subsequent research.

Although the abstracts in NA&EJ reported four stable moves throughout the English corpora, the non-hierarchical eight move occurrence varied across disciplines and fields. This move variability is due to writers from different disciplines and fields representing themselves, their

work, and their readers. In effect, Hyland (2014) states that in the humanities, authors tend to adopt positions much more explicitly involved than in the sciences engineering fields. This representation, in turn, impacts the preferred rhetoric and conventions used to highlight the contributions of the entire paper to the research area. For example, while in sciences, activity-based skills are a must (describing procedures, defining objects, and planning solutions), in the humanities, analyzing and synthesizing multiple sources are the foci, as stated by Hyland (2014). The rhetorical conventions displayed in these types of abstracts result from various communicative purposes performed in specific discourse communities. Authors, therefore, write abstracts related to their current research either by anticipating what scientific discourse communities expect from a text or by following suggested structures, which vary depending on the journal.

Regarding the surface structure of the RAAs, out of the four sentence types, simple sentences were the most frequent, while compound-complex were the least frequent ones throughout the corpora. Present simple and past tense were the sentence patterning observed in texts published in NA&EJ. On the one hand, present tense communicated to readers and newcomers the purpose of the research study, whilst on the other side, past tense summarized the method and result sections. Subordinating (complex) and compound-complex sentence structures were employed in the four disciplines in texts of North American journals (NAJ).

Research outcomes show significant variability in the overall sentence complexity, amount of subordination, and degree of phrasal sophistication between NA&EJ. Notwithstanding, though, there was variability in the means of syntactic complexity in NA&EJ abstracts, no statistical differences was found between disciplinary fields and between the four syntactic dimensions across disciplines at the level of significance ( $\alpha = .05$ ). Abstracts in Ecuadorian journals had higher mean values in the T-units per sentence (T/S) ( $M = 813$ ,  $SD = 0.030$ ) and clauses per sentence (C/S) ( $M = 1.005$ ,  $SD = 0.035$ ) but twelve lower values than those of North American ones. The genre-related differences in this dissertation are that coordination, subordination, and sophistication significantly occurred in abstracts published in NAJ. Most of the RAAs are constituted of 5–9 sentences in a paragraph; sentence length ranged between 23–38 words. Abstracts published in Ecuador had higher means in the sentence length than North America. Abstracts published in Ecuadorian journals suggested a higher occurrence of using left-embeddedness words compared to the NAJ.

Research article abstracts in NA&EJ indicated variation in the lexical knowledge used throughout the texts. The lexical density of abstracts in NAJ tended to employ more content words than their Ecuadorian journal counterparts. The lexical diversity —wide-ranging words used in

NA&EJ were observed in sociology and education abstracts. There were statistical differences in the lexical density ( $p = .005$ ) and lexical sophistication ( $p = .044$ ), but not in the proportion of lexical diversity ( $p = .792$ ) used in the two NA&EJs. Although no difference was reported in the total usage of lexical richness indices ( $p = 0.953$ ) in NA&EJ, significance in the means of lexical richness ( $p = 0.003$ ) were found between the humanities and sciences. The means for lexical sophistication showed that abstracts in Ecuadorian journals used a high number of academic words and specialized terminology to produce those texts. These results indicate that the rhetorical and linguistic realization of RAAs vary depending on the discipline, text length, communicative purposes, academic writing standards, discursive practices and conventions, subject area, and sentence- construction skills, the latter especially for those authors from non-English backgrounds.

### ***3.2. Major conclusions***

Regarding the move structures and linguistic features used to construct the moves of the RAAs, this study reached the following conclusions: There were slight differences between RAAs from all disciplines in both contexts concerning syntactic complexity and lexical richness. There was no evidence of possible incidence of the syntactic structure and lexical richness in the rhetorical move structure found in this study. In other words, syntactic complexity and lexical richness did not interfere in the number and function of rhetorical moves in abstracts of NA&EJ. Concerning the publication contexts (NA&EJ), fields of research, and types of ranked journals as independent variables, results showed there were no significant differences between RAAs. On the contrary, especially concerning rhetorical moves, all abstracts in NA&EJ showed a similar structure of eight moves with a four stable move pattern.

The corpus-based approach allowed for describing the typical grammatical structures and the rhetorical organization used in these academic texts, even if they did not show any incidence on rhetorical move organization; this analysis revealed similar linguistic outcomes regardless of the contexts and disciplinary fields. The *result-oriented* analysis showed that there was a clear relation between rhetorical moves and the cohesive means (linkers or connectors) that build up RAAs. Such a correlation is because rhetoric includes pragmatic disposition of the macro-textual level and linguistic choices of the micro-level. Abstracts, then, as the product of the linguistic system of the language, constitute the systematic representation of the composing patterns encapsulated in the content of the text. This analysis allowed for elaborating and describing linguistic and pedagogical implication, which can be taken as clues for writing abstracts of scientific papers.

This current research on specialized disciplines, particularly on RAAs, evidenced the presence of other moves: thematic focus, background, purpose, method, result, conclusion, recommendation, and implication. So, this research uses the term *emerging moves* to refer to those rhetorical moves not described by the classical authors and researchers, but which have been identified in the corpus analysis. It refers essentially to the following ones: thematic focus, background, recommendation, and implication.

The analysis suggests that there are common grounds and slight differences in RAAs between NA&EJ in terms of rhetorical move structure and the linguistic realizations. It brought the emergence of an eight-move rhetorical schema, complementary to Hyland (2000), for the construction of RAAs. The use of this newly discovered move model will help (Ecuadorian writers in particular) to become aware of such move structure, helping them to organize information content and meet the expectations of the expert community. This somehow allows them to produce accurate RAAs in terms of content and structure.

This dissertation assesses its contribution to previous scientific genre theory, contrastive rhetoric methodology and pedagogical practices for the genre RAAs. Thus, the identification and analysis of textual elements and rhetorical moves, as Hyland (2005, 2009) had previously stated, underwrite the teaching of academic writing. In our case, it lays the groundwork for future research into abstracts of NA&EJ, providing quantitative comprehensive framework for detecting differences or common grounds in the rhetoric, syntactic structure and lexical richness of abstracts. This study, to some extent, adds to Hyland's (2014) suggestions in developing academic writing skills from authentic corpora. In general, it accounts for useful insights to describe the recurrent rhetoric, lexical and syntactic structure used in abstracts, which reflects the actual use of language. In essence, this dissertation opens novel and pioneering paths towards corpus linguistics and applied linguistics studies in Ecuador.

This research provides insights on how writers from different disciplines and distinct publication contexts use language not only to communicate ideas but also to display their linguistic conventions. The current research outcomes attempt to close the research gap on comparing RAAs published in NA&EJ, alerting novice (Ecuadorian in particular) second-language and foreign-language writers to produce informative and publishable RAAs.

#### ***4. Linguistic and pedagogical implications***

Based on the contrastive analysis of RAAs published in NA&EJ in the four disciplines, the following linguistic and pedagogical implications arise:

1. Research related to rhetorical organization is a developing area that still requires reviewing aspects that separate organizational structures from different discourse community research requirements. The identification and analysis of textual elements can contribute to teaching academic writing (Hyland, 2007). The analysis of RAAs is embedded within the genre approach, which gives the student three important elements when learning writing: (1) language (lexical and grammatical choices: for instance, use of connectors), (2) content (what each move should contain), and (3) context (writing with a purpose and having an audience). Furthermore, the structure, in particular the macro-moves —*hierarchical and non-hierarchical, for example*— provides readers with the road map of the text to read. Thus, teaching academic writing based on this approach allows the student to perceive how academic language works.

2. Research article abstracts perform a function that must be identified by both the writer and the reader. Therefore, students must be aware that this type of text fulfills social goals whose main objective is to inform about the process and result of theoretical or empirical research. Although the informative function is present, the RAAs play a management role; they act as a report in miniature to sell the paper. Therefore, the writing must gain the readers' acceptance by using convincing and accurate arguments about the research outcomes. This is because the readers are usually expert members of the disciplinary community in which the text is produced and is part of a review committee.

3. The trend proposed here for developing writing skills in the construction of RAAs is the linguistic implication of this dissertation. The idea is designed to develop writing skills as the first approach to cognitive teaching by presenting linguistic matrices from a set of texts and thus recognizing that genres constitute a relatively conventional response to a specific communicative situation. This allows for designing academic programs and teaching materials that guide researchers and novice writers to be aware of these conventions. Academics, then, should provide writers (Ecuadorian in particular) with hierarchical and non-hierarchical move models (as the new move model found in this dissertation) that help them to know and master the generic structures. In this way, novice writers will be able to use the generic structures of the abstract genre effectively across journals and discourse communities.

4. Finally, From the point of view of the applicability and functionality of Hyland's (2000) model, a brief reflection on the pedagogical implications of writing the genre RAAs emerges. It is known that in the Ecuadorian context, this topic is new to many colleagues and teachers. Yet, the role of English teachers is to look for pedagogical avenues to address learners' deficiencies. This dissertation, therefore, describes suggestions, didactic ideas and tips for writing accurate RAAs in

terms of content and generic structures. In general, such ideas and suggestions will help strengthen the drafting of coherent and cohesive scientific texts: in particular, abstracts of scientific papers. Thus, the current dissertation suggests exploring the feasibility of the newly non-hierarchical eight-move model, which includes four emerging moves, namely thematic focus, background, recommendations, and implications. Table 1 shows the communicative purposes of the new move model to construct RAAs.

**Table 1.** Non-hierarchical eight-move model

#	Moves	Communicative purpose	Linguistic signals
1	Thematic focus	Announces the interest of importance of referring to the research study	<i>The research project is born from ..., This type of study and the way it is presented to the audience..., This work arises from the need ...</i>
2	Background	Introduces selected and relevant investigations in the disciplinary field	<i>in a recent work..., this is a follow up study of..., After a lengthy period of focusing on...</i>
3	Purpose	Defines the objective of the study	<i>The present study examines..., the aim of this investigation is..., the objective was to...</i>
4	Method	Describes the procedures, instruments, and materials used for the data analysis	<i>the data for this research..., the article analyses data from..., The study constitutes of x and y participants...</i>
5	Results	Outlines the important outcomes of the research study	<i>The findings reveal..., the results of a series of consecutive tests revealed..., Results of this study indicate...</i>
6	Conclusion	Summarizes the information content and the importance of the paper	<i>The article concludes..., it recached the following conclusions..., the main conclusion is that there is...</i>
7	Recommendations	Suggests possible (pedagogical) applications for a particular purpose	<i>The results of the study suggest..., the findings suggest that..., this will be to have a high-quality game to be used as...</i>
8	Implications	Points to linguistic implications and interpretation scope of the work for subsequent research.	<i>The research led to the confirmation of..., the transient model can simulate a variety of..., the significance of this research is...</i>

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