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# Negotiating across languages: metadiscourse in english and spanish abstracts in soil science

## Negociar entre lenguas: el metadiscurso en resúmenes de ciencia del suelo en inglés y español

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**ABSTRACT**

This study aimed to contrast metadiscourse use across languages in abstracts in the field of Soil Science. Three corpora were compared: abstracts published in Spanish by Spanish speakers; abstracts published in English by Spanish speakers; and abstracts published in English by English speakers. Metadiscourse occurrences were qualitatively coded using computer-assisted qualitative data analysis software and interpreted in relation to independent variables language of publication, writers' dominant language, and abstract rhetorical structure. Findings suggest an overall preference for boosting and a tendency to rely heavily on interpersonal features when presenting and discussing research outcomes, which may be accounted for in terms of the promotional function of the genre. Contrastive corpus analysis indicates a shift from Spanish local patterns of interaction when publishing in English towards dominating patterns of negotiation in the additional language, which might be attributed to the external demands posed by differing socio-pragmatic contexts of publication. Few divergencies observed in the use of hedging features might indicate coexisting communication patterns and deliberate participation strategies by Spanish speakers.

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## RESUMEN

Este estudio tuvo como objetivo contrastar el uso del metadiscurso en resúmenes o *abstracts* de la ciencia del suelo. Se compararon tres corpus: resúmenes publicados en español por hispanohablantes; publicados en inglés por hispanohablantes; y publicados en inglés por angloparlantes. Las ocurrencias de metadiscursos se codificaron cualitativamente utilizando un software de análisis de datos cualitativos asistido por computadora. Los hallazgos cuantificados se normalizaron y las frecuencias se interpretaron en relación con las variables independientes: lengua de publicación, lengua dominante de los escritores y estructura retórica del *abstract*. Los hallazgos sugieren una tendencia a enfatizar los argumentos y a usar mayormente elementos interpersonales al presentar y discutir los resultados de la investigación, lo que puede explicarse en términos de la función promocional del género. El análisis contrastivo indica un cambio de los patrones interaccionales propios del español cuando se publica en inglés hacia patrones dominantes en la lengua extranjera, lo que podría atribuirse a las demandas externas de diferentes contextos sociopragmáticos de publicación. Algunas divergencias observadas, principalmente al mitigar, podrían dar cuenta de la coexistencia de patrones de comunicación y del uso deliberado de ciertas estrategias de participación por parte de los hablantes de español.

Palabras clave: resúmenes, escritura académica, retórica intercultural, metadiscurso, escritores multilingües.

## Introduction

The study of academic writing for publication purposes has yielded considerable interest over the last three decades or so. For some scholars, this interest has been rooted in the practical necessity to provide sound descriptions of how situated academic genres are constructed based on the study of discourse patterns and disciplinary expectations. Despite some commonalities in the rhetorical organization of similar genres, variations have been identified in the way sciences organize discourse and communicate in the academy (Hyland & Jiang, 2018; Omidian et al., 2018) even in neighboring and sub-fields (Kanoksila-patham, 2015; Martín-Martín & León Pérez, 2017).

For other scholars, research has originated from the need to better understand the influence of differing cultural and linguistic backgrounds and center/periphery writing contexts. Studies have explored novice writers' experiences within communities of practice (Flowerdew & Wang, 2016; Habibie & Hyland, 2019), multilingual writing in local and global settings (Curry & Lillis, 2019; Monteiro & Hirano, 2020), or discourse contrasts between languages and communities (Sheldon, 2018; Xu & Nesi, 2019). The impact of recurrent contacts among speakers of English as their dominant language or else as an additional language (You, 2018) has also been considered in recent research. Transcultural processes of discursive hybridization (Lorés-Sanz, 2016b) or accommodation (Canagarajah, 2018) have been identified, coexisting with other field-specific choices (Hyland & Jiang, 2018), which altogether shape genre construction and academic interaction patterns. In sum, these studies have contributed to understanding the complex myriad of aspects involved in writing for publication as well as the dynamic and negotiated nature of academic genres.

Among written academic communications, abstracts constitute a central genre in global knowledge-making. With over 2.5 million peer-reviewed papers indexed only in Scopus database every year (retrieved from scopus.com), abstracts are key to help communities index, find, and exchange specific and relevant new knowledge. They not only summarize the main contents of the research paper associated to them, but they rather often work as "standalone" texts (Glasman-Deal, 2020, p. 265) whose quality will inevitably determine the visibility of research and researchers alike. That is to say, researchers across different

fields of study need to put forward an efficient abstract, provided they want their paper to be found, read, and later quoted at all.

Although until recently abstracts were largely disregarded as part-genres, in comparison with the undisputed status of the research article as the main academic genre (Van Bonn & Swales, 2007), there seems to be agreement today on the fact that despite apparent surface similarities in both genres, salient differences exist between the abstract and the research paper, mainly in terms of communicative functions and rhetorical objectives. Abstracts have been particularly characterized as highly persuasive (Jiang & Hyland, 2017); it is through them, as legitimate gates towards the intended readership, that writers might be able to find readers and persuade them of the relevance or utility value of their research (Ayers, 2008; Lorés-Sanz, 2004; Motta Roth & Hendges, 2010).

Neither discourse patterns nor expectations for writing abstracts are generalizable across fields (Vann Bonn & Swales, 2007). Researchers have in fact agreed upon the situated and relatively dynamic essence of the genre (Gillaerts & Van de Velde, 2010; Hyland, 2000), which calls for contextualized discourse analysis. A central issue for the understanding of how language is intentionally used in context is metadiscourse, which acts as a "recipient-design filter" (Hyland, 2019, p. 11) through which discourse can be handled in abstracts in response to readers' expectations. It acts as a kind of discursive bridge affecting communication and has proven useful for the study of interaction in abstracts across disciplines (Hyland, 2017).

Some scientific fields have attracted special attention for the study of metadiscourse in abstracts, such as Linguistics (Gillaerts & Van de Velde, 2010; Lorés-Sanz, 2009), Medical Science (Salager Meyer et al., 2011), Biology, Computer Science, and Engineering (Hyland, 2007), whereas others are still to be explored. Soil Science is a field that has received little attention despite its importance for the conservation of this natural resource. It is a well-established yet evolving field (White, 2005) concerned with the study of soils in relation to different aspects and across related disciplines. In this sense, it represents a multidisciplinary community that draws together biologists, microbiologists, agricultural engineers, edaphologists, physicists, and chemists in an attempt to analyze and manage soils in relation to their use for sus-

tainable agricultural practices. Geopolitically, Soil Science is a priority field for developing countries as is the case of most Latin American countries, such as Argentina, Brazil and Chile but also Asian, African and Eastern-European countries.

Regardless of the discipline or the original language of the research article, current indexing criteria for global research databases such as Web of Science, Scopus or Scielo require an abstract written in English (Scielo, 2018). Despite the apparent opportunity this represents for multilingual writers to gain international visibility and recognition, writing in English may also embody an uneven situation for scholars outside central academic spheres (Curry & Lillis, 2017; Lillis & Curry, 2015). Such "asymmetrical" (Corcoran & Englander, 2016, p. 2) scenario for knowledge production and dissemination creates a gap between writers' efforts to satisfy gatekeepers and the challenge of writing in an additional language (Curry & Lillis, 2017); not only they need to handle lexico-grammatical features but also adjust discourse choices to interact (Bakhtin, 1986) effectively and appropriately within the boundaries of an Anglo-dominated community (Moreno, 2010). There are specific linguistic difficulties at stake but also, and perhaps more importantly, there are culturally (Holliday, 1999, 2011, 2013) and rhetorically bound issues that may affect their discourse practices and may hinder communication.

In such scenario, Intercultural Rhetoric (IR) (Connor, 2004, 2011; Connor et al., 2008) offers a valuable framework for the analysis of abstracts written by multilingual writers (Liu & Huang, 2017; Lorés-Sanz, 2016a; Perales Escudero & Swales, 2011) as discourse contrasts can be identified and taught to writers across disciplines in an attempt to foster participation in international conversations mainly dominated by written communications in English. Through IR not only distinct patterns can be made visible, but awareness can be promoted, and further contributions achieved by empowering multilingual scholars for dynamic negotiation (You, 2018) and interactional accommodation (Connor, 2011) between languages and local/global communities (Canagarajah, 2013; You, 2018).

Drawing from IR, this article aims to identify metadiscourse patterns in abstracts across languages published in leading journals in Soil Science, an interdisciplinary field that has not yet been accoun-

ted for. Three corpora comprising 90 texts were compared: abstracts published in Spanish by Spanish speakers; abstracts published in English by Spanish speakers; and abstracts published in English by English speakers. Metadiscourse was qualitatively coded using QSR NVivo Pro 11 software. Automatic text search for common forms, double-blind codification, inter-rater reliability and results audition were performed to guarantee qualitative consistency. Findings were quantified and normalized. Results were described and interpreted in relation to the independent variables abstract rhetorical structure (Swales & Feak, 2009), language of publication, and dominant language of writers.

## Metadiscourse in abstracts

Among relevant issues identified in prior studies dealing with the writing of abstracts, interaction as evidenced through metadiscourse seems to be specifically challenging for multilingual writers (Ädel & Mauranen, 2010; Hyland, 2017). Metadiscourse refers to linguistic cues that writers include in their written texts to perform specific communicative and rhetorical functions. Its relevance is perhaps best understood when considering acceptability-rejection issues in global publishing since, as Pérez Llantada suggests, metadiscourse resources not only guide readers through the text but also serve to create proximity with the audience, enabling writers to shift from a rather tentative discourse to an overt assertive style which indicates confidence and commitment to their arguments (Pérez Llantada, 2016), depending on the rapport they want to establish with their imagined readers. As Hyland states, metadiscourse is an approach through which interactions between writers and readers can be conceptualized and is thus perceived by the author as a kind of "recipient-design filter" (Hyland, 2019), as mentioned above. It is through metadiscourse that the writers' awareness of contexts and audience is materialized in written discourse, and that an otherwise flat text can be transformed into an effective piece of discourse that can meet readers' perceived needs (Hyland, 2019) and fit the conventions of the discourse community.

Hyland (2005, 2019) distinguishes two broad categories of metadiscourse, namely interactive and interactional. The former involves markers which enable writers to guide readers through their texts as

well as to guide the manner in which arguments are understood. The latter relates to markers through which writers are able to express their stance or commitment towards propositional content and also the type of dialog they want to construct with expected readers of their texts. Within each category, Hyland identifies specific though not mutually exclusive resources, as shown in Table 1 below.

Table 1
*Metadiscourse resources with examples in English (Hyland, 2005, 2019) and Spanish (Müller, 2007; Osorio & Añez, 2017)*

|  |  | English | Spanish |
|---|---|---|---|
| Interactive | Frame markers | first; listing or numbering (a., b, c, 1, 2, 3); in brief; to conclude; aim, purpose | primero; finalmente; en resumen; para concluir; mi propósito es |
|  | Transition markers | although; because; whereas; since; so | además; pero; por consiguiente; en adición; así; y |
|  | Endophoric markers | x above; x below; table x; the x chapter; Figure x | véase la figura x; en el esquema anterior; señalado anteriormente; Ver fig; En la sección x |
|  | Evidentials | according to x; [ref no.]/ [name]; cited; quoted; (date)/(name) | de acuerdo con el autor x; x afirma que; x sostiene |
|  | Code glosses | defined as; i.e.; (); in other words; such as | es decir; o sea; por ejemplo; en particular; a saber; como; en otras palabras |
| Interactional | Hedges | almost; appears; could or might; suggested; possibly | podría; quizás; es posible; posiblemente |
|  | Boosters | certainly; clear; demonstrates; found; never | en efecto; definitivamente; está claro que; de hecho; seguro |
|  | Attitude markers | appropriate; desirably; amazingly; unexpected; unfortunately | sorpresivamente; estoy de acuerdo con; desafortunada; afortunadamente |
|  | Self-mentions | I; we; our; us; the author | yo; nosotros; mi; nuestro; nuestra |
|  | Engagement markers | have to; should; you; allow; we or us (inclusive) | consideremos; recuérdese; imagínense; considera; puedes ver eso |

Source: Hyland (2005, 2019); Müller (2007); Osorio & Añez (2017).

Among interactive resources, *frame markers* help writers organize discourse, indicating specific objectives or else stages and shifts in the arguments presented. Through *transition markers*, writers are able to show the existent relation between the discourse parts being connected, whether additive, cause-effect or contrast, whereas through *endophoric markers* they are able to refer to other parts of discourse, either anaphorically or cataphorically, thus guiding readers toward specific parts of texts or arguments. *Evidentials* help writers bring other sources into their discourse as a way to support arguments or to accurately attribute responsibility for propositional content, thus detaching themselves from the arguments presented. Finally, *code glosses* are used to elaborate or clarify propositional content, mainly through the use of definitions and paraphrasing.

Within the category of metadiscourse identified as interactional in Hyland's taxonomy, *hedges* and *boosters* are tightly associated to the type of discussions writers seek to establish with their readers and to their stance towards the claims being presented; whereas the former open up writers' dialog with readers and generally contribute to reducing the force of arguments and shielding writers against possible counterarguments, the latter work in the opposite direction, enabling writers to show certainty and assertion. *Attitude markers* are also used to make writers' attitude towards propositional content explicit in their texts, but in terms of an affective value, so that emotions such as surprise or frustration become visible in their discourse. *Self-mentions* correspond to the so-called writer-oriented linguistic resources through which writers create an authorial persona and intentionally intrude in the text. *Engagement markers*, on the other hand, represent reader-oriented resources and thus enable writers to bring readers into their discourse either to have them participate in their dialog or else to avoid possible objections by inviting readers to judge arguments by themselves.

In sum, metadiscourse is at the center of effective communication, but at the same time it can be challenging for both native and non-native (or multilingual) science writers as it is additional to explicit propositional content (Hyland, 2019). For this reason, it has attracted the attention of Intercultural Rhetoric and Applied Linguistics. Generic differences between the abstract and the research

paper have been explored in the use of metadiscourse (Gillaerts & Van de Velde, 2010) in relation to the characteristics and functional objectives of each genre. Possible influences of expertise in the use of metadiscourse have also been assessed (Byun, 2016). Additionally, diachronic and synchronic studies of metadiscourse in abstracts have especially considered contrasts across local and global settings, disciplines and languages.

Research efforts exploring metadiscourse over time (Bondi & Lorés-Sanz, 2014; Hyland & Jiang, 2018, 2020) evidence variations in the way writer-researchers engage with potential readers, negotiate meanings and anticipate reactions, even in closely related genres and disciplines. In a quantitative study of metadiscourse use in the *Journal of Pragmatics*, Gillaerts and Van de Velde (2010) identified salient differences between abstracts and research papers, with boosters being preferred in the former, as opposed to a preference for hedging in the latter. Additionally, authors claim that metadiscourse use has decreased over time, especially boosters and attitude markers. In contrast, Bondi and Cavalieri (2012) argue that abstracts from Applied Linguistics increasingly rely on interpersonal features and provide evidence of prominent authorial presence in texts, as suggested by a growing use of self-mentions and other resources; changes in discourse choices are attributed to a shift in the field from a theoretical to an empirical discipline and to the perceived role of researchers and discourse community over time.

Contrasting findings are observed in other disciplines as well. In a study of abstracts in Economics, Marketing and Cell biology, Okamura and Shaw found a rather uniform development of the genre, characterized by an increase in metadiscursive elements that clarify arguments or highlight research findings (Okamura & Shaw, 2014). Few years later, however, Bakhtiari and Farahani (2020) challenged such uniformity claim across disciplines in a study of metadiscourse in two journals from Psychology; whereas stance markers gradually increased in one of the journals, the opposite trend was observed in the second one over the same time period. Authors attributed variations to evolving communicative needs of authors and disciplines in response to external demands for publication (Bakhtiari & Farahani, 2020). As far as individual resources are concerned, hedges were found to outnumber all

other interactional resources, in contrast with prior findings (Gillaerts & Van de Velde, 2010) regarding boosters as pivotal in abstracts.

Diachronic studies of abstracts written in different languages, or else in English as a dominant or additional language, have provided relevant insights as well. Vieira Santos and Nunes da Silva (2016) found that abstracts written in English by Portuguese writers have shifted from typically Portuguese discourse patterns to predominant patterns circulating in central spheres of academic publishing. Other authors investigating how the contact of multilingual and Anglophone writers has affected the writing of abstracts over time point to "hybrid voices" (Mauranen, 2007) in discourses, resulting from a process of interactional accommodation (Connor, 2011; You, 2018) in translingual and transnational communication (You, 2018). In a study of abstracts in Economics, Liu and Huang (2017) found that Chinese writers amalgamated with English discourse choices in terms of hedging but kept deep-rooted cultural preferences in terms of boosting. Such rhetorical hybridization may result from the many "processes of contact and evolution, reshaping old forms into new forms that model English conventional patterns in innovative and creative ways" (Lorés-Sanz, 2016b, p. 77).

Diachronic research has been complemented with synchronic studies of metadiscourse. Some have explored the impact of expectations in different discourse communities through the contrastive analysis of abstracts either from leading or less prestigious journals. In a study by El-Daks (2018), abstracts published in indexed journals were contrasted with abstracts from peer reviewed, though not indexed journals in Linguistics. Greater use of hedges and boosters was identified in the corpus from prestigious journals, mainly to summarize findings and draw conclusions. Abstracts from leading journals also exhibited frequent inclusions of self-mentions, accounting for writers' awareness of their novel contributions to the field. As for interactive metadiscourse, although transitions were frequent in both corpora, its types and functions seemed to differ; abstracts from less prestigious journals often included purpose and additive connectives, whereas contrast connectives were common in high-ranking publications.

Disciplinary variation in the use of metadiscourse has also been analyzed from a synchronic perspective. Li and Pramoolsook (2015) investigated hedging strategies in abstracts from two Business sub-

fields; despite an overall preference for epistemic lexical verbs and modal auxiliaries in both sub-fields, hedging strategies in Marketing slightly outnumbered those of Management, possibly due to idiosyncrasies of the field. Similarly, Jiang and Hyland (2017) explored meta-discursive nouns in abstracts across six fields of enquiry (Applied Linguistics, Marketing, Philosophy, Electronic Engineering, Medicine and Physics) and found that writing choices not only respond to generic conventions but also to "epistemological and social preferences of the fields" (Jiang & Hyland, 2017, p. 11) directly influencing metadiscourse use across moves and disciplines.

Cross-linguistic variation in metadiscourse use in abstracts has received substantial attention as well, with the aim of identifying preferred interaction patterns related to differing cultural backgrounds or languages. In a contrastive study of French and English abstracts, Van Bonn and Swales (2007) noted that English writers tended to interpret findings in relation to prior studies, whereas their French counterparts made little effort in justifying their own research, possibly due to the differing nature of each discourse community. That is to say, English writers were likely well-aware of the promotional function of abstracts within a heavily competitive community of scholars, in agreement with prior research (Hyland & Tse, 2005). Linguistic differences associated to the first language of writers were also detected, such as a higher use of first-person pronouns and a preference for contrast-concessive transitions in English, as opposed to additive transitions in French. In another cross-linguistic study of metadiscourse use by Chinese scholars in the fields of Biology, Chemistry and Physics (Wei & Duan, 2019), authors found that metadiscourse elements were less frequent in the corpus of Chinese writers and they mostly consisted of interactive elements to guide readers through texts, in contrast with interactional resources used by English writers to create author identity and interact with peers.

Despite the existence of a large body of contrastive research on interaction strategies used by multilingual writers in comparison with their English native counterparts across a wide range of contexts, only a small portion has focused on Spanish speakers. Pairs of author-translated English-Spanish and Spanish-English abstracts were analyzed by Perales-Escudero and Swales (2011) to identify patterns of "convergen-

ce and divergence" in certain rhetorical strategies like self-mentions, attitude markers and epistemic commitment. Despite overall similarity in text agency and linguistic equivalences, some periphrastic expressions in Spanish were found to perform strong intensifying functions not present in the English versions. Commitment in Spanish texts was further accentuated by the inclusion of bare assertions in places where hedged statements were used in English. Similarly, explicit hedging elements in English were replaced by attitude markers with an amplifying function in Spanish. Although excessive boosting by Spanish speaking scholars has been identified as a strategy to express greater epistemic commitment (Perales-Escudero & Swales, 2011), discourse may as well be perceived as arrogant (Salager-Meyer, 1998) and patronizing, which may in turn interfere with the acceptance of their works. In such line, authors have suggested an apparent difficulty for Spanish speakers to critically position themselves and their findings against the existing body of research (López Navarro et al., 2017). As suggested by Moreno (2010), this might be explained in terms of rhetoric transfer; that is, certain discursive strategies appear to be influenced by culturally-socialized rhetorical practices writers may have implicitly gathered from their national discourse community, which may in turn account for the writers' inability to perceive differing discourse patterns, despite a solid linguistic command in English (López Navarro et al., 2017; Vassileva, 1997).

Writers' explicit intrusion in their texts has been highlighted as another difference between Spanish English speakers. Cárcamo Morales (2019) contrasted abstracts written in Spanish and English from Linguistic journals; although non-explicit self-references were identified in both languages throughout the rhetorical move structure of abstracts, English texts revealed instances of the writers' self-mentions, mostly through first person plural forms used to present the purpose of research. English texts were found to be more rhetorically complex as well, which might be attributed to a deeper editorial revision process under play in international publications. Rhetorical complexity in English abstracts is also supported in prior cross-linguistic research by Martín-Martín and Burgess (2004). Although academic criticism seems to be conditioned by genre, specific discourse choices differ in each language; a higher number of impersonal and hedged constructions were found in English texts, mainly to situate research

(move 1) and discuss findings (move 5), whereas unhedged criticism expressions, either personal or impersonal, were identified in Spanish texts. Martín-Martín and Burgess (2004) attribute such differences to socio-cultural and socio-pragmatic variables, in line with findings by Lores-Sanz (2009); fiercer competition and thus greater pressure to justify their contribution to the field might lead writers to opt for a more cautious attitude when participating in international spheres. Likewise, it may be sensible to assume that the socio-pragmatic context of publication somehow exerts pressure towards hybridization of discourse patterns in English publications (Lorés-Sanz, 2016b; Martín-Martín, 2005; Martín Martín & Burgess, 2004). Although some challenges have been identified for Spanish speakers, mainly in the use of hedging strategies (Divasson Cilveti & León Pérez, 2006), an overall centripetal force of the international discourse community has been highlighted, resulting in the accommodation or amalgamation of local rhetorical practices of Spanish speakers to the dominant rhetorical-discursive models of English (Pérez-Llantada, 2010) identified in other multilingual writers.

As it was illustrated above, plenty of research has been conducted in an attempt to analyze metadiscourse use in abstracts across languages, disciplines and publication contexts. Given the evolving and situated nature of the genre and the disciplinary and cultural heterogeneity evidenced in prior works, further research is needed to understand specific discourse choices originating within the boundaries of unexplored disciplines. In this sense, a contrastive study of abstracts from Soil Science remains an area of marked vacancy in the literature. Although other related disciplines have been partially accounted for, like Biology, Agricultural Sciences and some branches of Engineering, to the best of our knowledge, no prior published works exist about interaction patterns preferred by researchers in Soil Science. In addition to lacking studies of the field, corpus construction in prior research has mostly addressed dual translations or else native vs non-native corpora. Very few studies resorted to a three-corpora analysis like the one proposed in this research and they either focused only on the rhetorical structure of abstracts (Morales et al., 2015) or else included translated texts and resorted to a reflexive approach to metadiscourse study (Lorés-Sanz, 2011, 2016a), with the exception of a study by Akbas and Hardman (2018).

In such scenario, it is expected that the exploration of metadiscourse in Soil Science proposed in this study will further advance the understanding of the interplay between local and global meanings as realized in the writing of abstracts. On the one hand, this study seeks to explore how local discourse choices contribute to internationally dominating patterns of interaction; on the other, it will assess the influence exerted by the discourse community in the selected patterns of dialog construction, as suggested in a three-angled study (Akbas & Hardman, 2018). By so doing, a reductionist view of writing which stereotypes the genre to its universal features and accounts for contrasts from a monolingual perspective will be avoided here. Contextual issues which ultimately determine the multiple repertoire-building strategies (Donahue, 2018) multilingual writers have at hand or the complexity of the dialogical relations established will be investigated.

The taxonomy proposed by Hyland (2005, 2019) in his interpersonal model of metadiscourse was used to explore how academic dialogs are constructed among researchers from the field of Soil Science through the writing of abstracts. Possible contrasts were identified in the use of metadiscourse that could be accounted for in terms of the genre's rhetorical structure, the writers' first or dominant languages (Spanish and English speakers), and their languages of publication (Spanish or English, either as dominant or additional language).

## Materials and methods

### Corpus construction

A corpus of 90 experimental abstracts from the field of Soil Science was collected from leading journals in the field from 2015 through 2017 (Table 2). The collected corpus of 90 texts was further subdivided into three different sub-corpora for analysis: the first sub-corpus (Sp-Sp) corresponds to abstracts published in Spanish by Spanish speakers, the second corpus (Eng-Sp) corresponds to abstracts published in English by Spanish speakers, and the third sub-corpus (Eng-Eng) corresponds to abstracts published in English by speakers of English as a dominant or first language. The corpus guarantees *tertium comparationis* (Connor & Moreno, 2005) in terms of genre, register, period of publication and medium of publication.

Table 2

*Corpus of 90 abstracts from the field of Soil Science, and sub-corpora Sp-Sp, Eng-Sp and Eng-Eng*

| Corpus | Sp-Sp | Eng-Sp | Eng-Eng | **Total** |
|---|---|---|---|---|
| No. texts | 30 | 30 | 30 | 90 |
| Period | 2015-17 | 2015-17 | 2015-17 | |
| Journals (No. texts/ journal) | *Ciencia del Suelo* (10) *Suelos Ecuatoriales* (7) *Venesuelos* (5) *Agronomía Costarricense* (8) | *Soil & Tillage Research* (14) *Plant and Soil* (4) *Applied Soil Ecology* (3) *Soil Use and Management* (9) | *Soil & Tillage Research* (8) *Plant and Soil* (10) *Applied Soil Ecology* (2) *Soil Use and Management* (10) | |
| Words (total) | 7,567 | 8,243 | 7,604 | 23,414 |
| Words (ave. text) | 252 | 275 | 253 | 260 |

Source: Own elaboration.

Leading journals in the field of Soil Science which publish in English were singled out using keywords and were ranked according to their impact factor (IF) in Web of Science: *Soil & Tillage Research* (IF = 6.37[1]); *Plant and Soil* (IF = 4.71); *Applied Soil Ecology* (IF = 4.88); and *Soil Use and Management* (IF = 3.11). As for the Spanish corpus, leading journals from the field were singled out from the website of the Latin American Soil Science Association because venues that publish in Spanish are not usually indexed in Web of Science. Although such search yielded five active Spanish-medium journals, one journal was discarded since its main approach to soils was geological or else geographical rather than agricultural.

To distinguish between abstracts written by speakers of English or Spanish as their dominant language, institutional affiliations, last names of first and corresponding authors, and language use in other articles were used as general heuristic criteria. Even though total reliability can-

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1  Data for 2015-2020 retrieved from Web of Science.

not be assured, the above-mentioned criteria are in line with procedures used in similar contrastive studies (Salager Meyer & Alcaraz Ariza, 2003). After indexing abstracts according to language of publication and presumed dominant language of authors, 30 texts were randomly selected for each sub-corpus. All selected items were written by different authors and correspond to different published studies, in an attempt not to analyze translated versions in English of an originally Spanish text.

## Corpus codification

The corpus was uploaded as plain text to QSR NVivo Pro 11 for computer-assisted qualitative analysis; titles and subtitles —if any— as well as paratextual details about authors, year of publication and the like were removed from the sheet of analysis to avoid any possible bias. First, the number of words per abstract was registered and the corpus was classified in terms of publication details (journal information, year of publication, co-authors), dominant language of author/s and language of publication. Second, the overall rhetorical organization of each abstract was manually analyzed following the framework of communicative stages or moves in Swales and Feak (2009), which summarizes the potential five-moves pattern of abstracts, as is briefly illustrated in Table 3 below. This general structure has been broadly identified across several languages and disciplines and has proved useful for the codification of the corpus of Soil Science abstracts.

Table 3
*Rhetorical moves in abstracts*

| Move # | Typical labels | Implied questions |
|--------|----------------|-------------------|
| Move 1 | Background / introduction / situation | What do we know about the topic? Why is the topic important? |
| Move 2 | Present research / purpose | What is the study about? |
| Move 3 | Methods / materials / subjects / procedures | How was it done? |
| Move 4 | Results / findings | What was discovered? |
| Move 5 | Discussion / conclusions / implications / recommendations | What did the findings mean? |

Source: Swales & Feak (2009, p. 5).

Metadiscourse was coded following the taxonomy proposed by Hyland (2005, 2019), and expanded by Müller (2007) and Osorio and Añez (2017) for Spanish (see Table 1 above); individual resources were manually annotated using QSR NVivo Pro 11 on each abstract in the three corpora. Such process, rather than the simply counting of pre-set items, involved an "interpretative and qualitative approach to discourse analysis" (Hyland & Jiang, 2020, p. 9) that would enable us to determine whether certain linguistic elements were performing particular rhetorical functions. The codification resulted in a list of resources that are shown on the Appendix.

When the coding process was finished, a procedure was followed to guarantee qualitative consistency. First, the list of emerging resources was used to automatically search for uncoded forms and to establish if they correspond to metadiscourse functions. Specialists in the field of Soil Science from the first author's university were consulted when necessary to avoid mis or over interpretations. Second, this revised codification was audited through the examination of lists of resources for each function, and the list of resources was revised as well. Third, 30 abstracts (33.3% of the corpus) were re-coded by an external researcher using the list of resources in the Appendix to test the replicability of the procedure; the resulting Cohen's kappa was 0.76 (values greater than 0.75 may be taken to represent excellent agreement beyond chance; Fleiss et al., 2003). This value is also an excellent agreement provided that abstracts' sections are not formally signaled and that metadiscourse resources can have varied extensions; when Cohen's kappa is calculated, differences in codification extension gradually reduce the level of agreement, whereas coding different texts chunks results in negative levels of agreement. After calculating inter-rater reliability, the 30 double-coded abstracts were audited.

Finally, findings were quantified and were normalized to 1,000 words. Frequencies were interpreted in relation to independent variables language of publication, language of writers, and abstract rhetorical structure. The z test for the calculation of differences between proportions was used to determine if the observed contrasts are statistically significant, with a confidence level of 95% (Z≥ ± 1.96).

## Results and discussion

### Metadiscourse in abstracts in Soil Sciences

In an attempt to address our first research question, overall metadiscourse use in the field of Soil Science was explored in the whole corpus under study. A total of 2,609 instances of metadiscourse were identified, or 111 resources per 1,000 words. Out of that number, 51 resources correspond to interactive metadiscourse whereas the remaining 60 are interactional elements (Table 4). As illustrated, a slight difference between interactive and interactional elements was detected, with the former being slightly surpassed by the latter, meaning that scholars in Soil Science use metadiscourse not only to organize ideas and guide readers throughout their written texts but also to communicate with their readership. At first glance, these preliminary outcomes seem to be in line with recent findings from a diachronic study of disciplinary use of metadiscourse by Hyland and Jiang (2018) who reported a substantial increase in interactional elements in the sciences; impersonal discourse mostly characterizing the so-called "hard" fields (Hyland, 2011) does not seem to hold true for abstracts in Soil Science, where more rhetorically-complex interactions prevail.

Table 4
*Overall metadiscourse use in the field of Soil Science*

| Metadiscourse resources | | | Interactive | Interactional |
|---|---|---|---|---|
| Raw data | Total | 2,609 | 1,194 | 1,415 |
| | Ave. / abstract | 29 | 13 | 16 |
| Normalized data | Per 1,000 words | 111 | 51 | 60 |

Source: Own elaboration

Discursive complexity is further confirmed when the whole picture is taken into account, as illustrated in Figure 1. Although all ten metadiscourse markers were identified, as expected, boosting represents the preferred strategy to interact with the audience in the field of Soil Science (29.3 instances per 1,000 words), which is likely dependent on generic features. Since abstracts often work as "stand-alone" texts (Glasman-Deal, 2020, p. 265), it is not surprising that writers boost

arguments to persuade readers of their research contribution, in line with findings by Gillaerts and Van de Velde (2010) and Liu and Huang (2017). Notwithstanding, hedging comes next as a recurrent interactional strategy, with 17.3 instances per 1,000 words, which might indicate scholars' awareness that persuasion should be carefully handled and discourse should be reader-oriented (Liu & Huang, 2017) if text acceptance is to be achieved within their corresponding discourse community. In our corpus, several instances were identified of boosters (bold) and hedges (underlined) used in combination, as is illustrated in Sp-Sp19 "lo cual **se respalda** con...y se infiere que...", Eng-Sp30 "may explain the **strong** impact", Eng-Eng01 "has **high** potential" and Eng-Eng21 "appears to be **greatest**", to mention a few examples. Taken altogether, boosters and hedges make up 41.7% of all metadiscourse in the corpus and a huge 77% if only interactional resources are considered, with attitude markers, self-mentions and engagement markers accounting for only 23% (15.3%, 4.4% and 3.3%, respectively).

Figure 1
*Metadiscourse use in Soil Science*
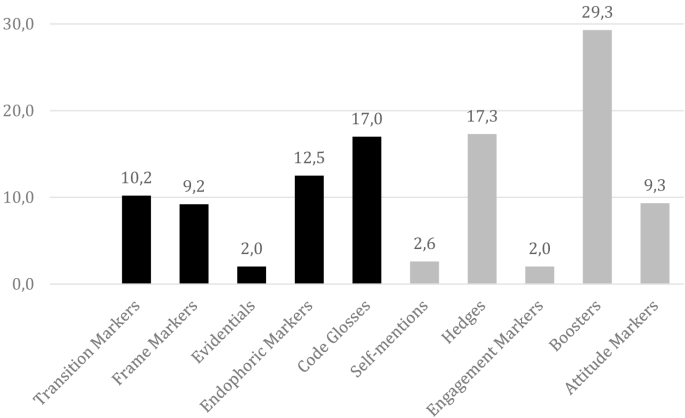


Source: Own elaboration
*Note*. Distribution of individual resources per 1,000 words.

In addition to abounding interactional features, writers in the field of Soil Science also seem to be aware of the relevance interactive resources have, not only to organize discourse but also to influence the way in which readers will go through and understand discourse, as

suggested by the use of code glosses, with about the same frequency as hedges, followed by endophoric markers and transition markers (17, 12.5 and 10.2 resources per 1,000 words, respectively). Among interactive features identified in the whole corpus, code glosses represent a recurrent discourse organizing tool, accounting for 33.4% of interactive resources found in abstracts. A similar trend was identified in a recent study about interactive metadiscourse use over time in research papers (Hyland & Jiang, 2020), with code glosses doubling their number per 1,000 words in the field of Biology. Although in their study evidentials also recorded notable increments, in our study they accounted for only 3.9% of the interactive markers in the whole corpus, a difference which may be explained in terms of possible prescriptions shaping the genre in the discipline; most commonly, writers in Soil Science are explicitly advised against the reference to cited work in their abstracts.

A closer look at the distribution of metadiscourse throughout the rhetorical structure of abstracts (Figure 2) allows for a better understanding of interaction in the field of Soil Science. As illustrated, metadiscourse elements are present all along the five rhetorical moves but their occurrence is particularly notorious in moves 4 and 5, comprising above 60% of the total interpersonal features detected in the corpus, in line with findings from a study of metadiscourse in leading journals (El-Daks, 2018). Interesting to note, this finding does not seem to be influenced by number of words. Move 4, intended to show research outcomes, is widely dominated by boosters, with hedges representing about a third of their number (14.4 and 5.2 resources per thousand words, respectively), whereas a more cautious approach with hedging strategies nearly close to boosting features (7.4 and 9 resources per thousand words) tends to be preferred in move 5, aimed at discussing findings and implications of research. These comparative differences between move 4 and move 5 are statistically significant, since the percentage represented by boosters within the total meta-discourses of move 4 is significantly higher than that represented in move 5 ($Z = -2.62$), while the opposite situation occurs in the case of hedges, where move 5 has a significantly higher proportion of hedges compared to move 4 ($Z = 5.90$). Reasons affecting the decision to include more interpersonal features in the last two moves may be influenced by the promotional function of the genre, but decisions might also be related

to social and epistemological preferences of the field (Jiang & Hyland, 2017; Li & Pramoolsook, 2015).

Figure 2
*Metadiscourse distribution along the rhetorical structure of abstracts in Soil Science*
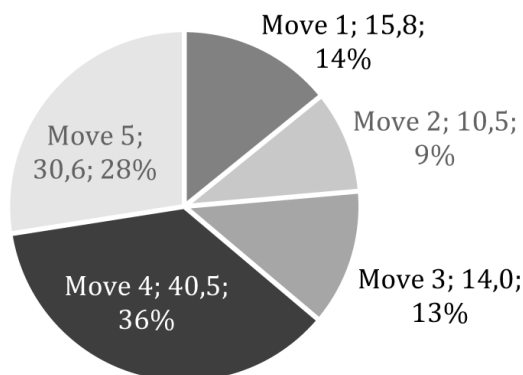


Source: Own elaboration
*Note*. Data are presented as number of references per thousand words and as percentages.

The use of resources in combination highlighted in the literature (Gillaerts & Van de Velde, 2010) and evident in our study adds to the arguments already put forward regarding writers' sensitivity to audience. In addition to combinations realized in the form of hedged (underlined) boosters or attitude markers (bold) as in Eng-Sp23 "is therefore seemingly **the more robust**" and Eng-Sp09 "**showed strong** potential", interactional and interactive resources (underlined with dots) are usually found in tandem throughout the same argument, as exemplified in the excerpts below:

> This might be related to the intrinsic soil characteristics (organic matter content, moisture, clay content) or grazing system (stocking rate, duration of grazing period), which prevented soil physical damage, suggesting that recovery forces were **greater** than grazing stress. (Eng-Sp05)

> Integrating the individual management tools (row placement, residue management, ground engaging tool, varietal choice) appear to be **useful** additions to integrated management to reduce the impact of CR in a no-till system. (Eng-Eng16)

As illustrated above, not only are hedges, boosters and attitude markers used to discuss research findings, but also code glosses (underlined in dots), normally to add details that clarify findings and enable readers to establish comparisons among treatments or else to better understand the claims made. In this respect, Ayers (2008) suggested that writers are no longer in need to merely present findings in abstracts but are rather impelled to elaborate on them to cater for a wider and perhaps less experienced readership, for whom more interpreting might be needed. Such external demands originally accounted for in terms of the availability of published abstracts favored by globalization may at least in part explain the inclusion of several discourse-clarifying and organizing features, particularly associated to moves 4 and 5. Transitions and endophoric markers (dashed underline) are also recurrent elements observed in such rhetorical moves. The former are usually included to mark contrast or concession (*en comparación con*, *sin embargo*, *en cambio*, *a pesar de que*, *while*, *but*, *though*), or else to highlight cause and effect relations (*entonces*, *lo que resulta en*, *hence, since*), as is illustrated in the excerpts below.

En comparación con la comunidad vegetal nativa, **ambas** especies megatérmicas incrementaron la producción primaria neta aérea de 74 a 157% y disminuyeron **10 veces** la superficie de suelo desnudo. Sin embargo, la sustitución de la vegetación solo causó ligeros descensos en el pH de la capa superior del suelo (**siempre** superior a 9) y **ningún** cambio en la salinidad y en la sodicidad. (Sp-Sp09)

The soil organic C was significantly higher in the PB-residue retained treatments (average 13.1 g kg-1 dry soil) compared with PB-residue burned (average 9.9 g kg-1 dry soil) or CTB-residue incorporated (average 10.5 g kg-1 dry soil), while pH and EC were significantly higher in the PB-residue burned (averages 8.85 and 1.06 dS m-1) compared with the fertilized or unfertilized soil in PB-residue retained (averages 8.65 and 0.78 dS m-1) or CTB-residue incorporated (averages 8.75 and 0.95 dS m-1). In the unimproved soil, we found a **significant** effect of soil organic C, application of N fertilizer (**highly significant** on *Nitrosovibrio*) and tillage-residue management (principally in fertilized soil) on the bacterial community structure, but **not** in the improved soil. (Eng-Sp11)

Nitrate-N concentration in leachate was reduced under NT and ST only during early sampling dates in 2014. Soil microbial biomass and diversity were similar among tillage treatments on most sampling dates, but **consistently** higher in the 0–7.5-cm than the 7.5–15-cm soil profile. Results indicate the potential for NT and ST yields to be comparable to CT, but temperature and nitrogen may limit yield under some circumstances. Though observed only periodically in this study, **benefits** of cover crops and reduced tillage to soil health and water quality make organic NT and ST systems **promising** in addressing current environmental concerns in agriculture. (Eng-Eng27)

As for endophoric markers, in our corpus they refer to prior information in the same text rather than to other texts or sections, as is usually the case for endophoric markers in research papers (Hyland, 2019; Müller, 2007; Osorio & Añez, 2017). Even if language equivalences were frequent (adverb *respectively* and *respectivamente*), linguistic realizations were more varied in Spanish (*lo cual, su, cada, tal/es, ambas, las dos, esta/e/o, la de, los dos, la observada*) than in English (*this, these, both, the latter*) for demonstrative pronouns and adjectives, determinants and relative pronouns used as endophoric markers. In agreement with Hyland and Jiang, interactive elements like the ones exemplified above not only serve a cohesive function, but rather reflect "the writer's assessment of what needs to be done to present information in the most comprehensible and convincing way for particular readers" (Hyland & Jiang, 2020, p. 2).

## Metadiscourse in abstracts in Soil Sciences across languages

In addition to our interest in understanding how metadiscourse is used in the discipline of Soil Science as a pragmatic strategy to interact with the imagined readership, we aimed to know whether such interactions may be related to factors other than discipline, such as the writers' first language or the language of publication. To those ends, data were also analyzed and interpreted in terms of the three corpora collected. Figure 3 illustrates the overall use of metadiscourse and its distribution in interactive and interactional categories per corpus, as indicated by word-frequency normalized to a thousand words.

Figure 3
*Total metadiscourse resources per corpus expressed per 1,000 words*
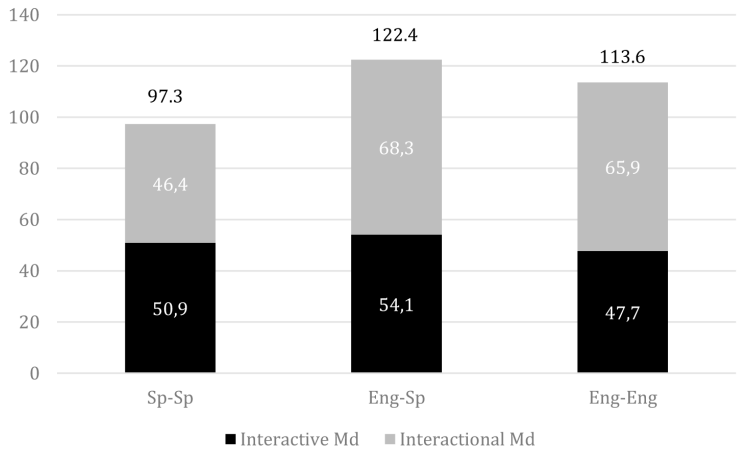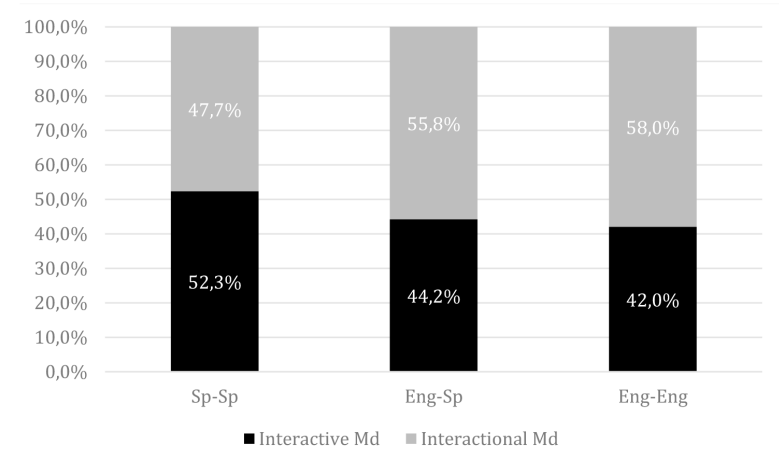


Source: Own elaboration

As it can be seen, the Sp-Sp corpus shows the lowest frequency of metadiscourse use (97.3 instances per 1,000 words, resulting in a significantly lower ratio compared to the other two segments (Sp-Sp vs Eng-Sp: Z = 5.04; Sp-Sp vs Eng-Eng: Z = -3.28). The opposite is true for Eng-Sp corpus (122.4 instances), with the topmost values if all three corpora are compared, although that difference is only statistically significant compared to the Sp-Sp segment. The use of metadiscourse in English by Spanish speakers is slightly higher in comparison with Eng-Eng corpus (113.6 instances) but is remarkably higher (about 25%) than that found in Spanish texts. This suggests that writers' rhetorical choices are more likely influenced by issues related to the differing discourse communities rather than by either their first language. That is to say, differences in metadiscourse use among the three corpora seem to be rooted in the writers' expectations about the imagined readers of their texts and thus, on the type of dialog they seek to establish with them. From this very first overall contrastive analysis, it seems that Spanish speakers publishing their abstracts in international leading journals are aware of a fiercer, perhaps more competitive readership they will interact with, which may account for the greater rhetorical effort evidenced in their texts. Similar findings have been reported in contrastive studies about multilingual writers'

use of metadiscourse (El Daks, 2018; Van Bonn & Swales, 2007) and about the use of metadiscourse elements by Spanish speakers, in particular (Cárcamo Morales, 2019; Lorés-Sanz, 2004; Martín-Martín & Burges, 2004); they all agree on the likely impact international contexts of publication have on writers' choices, notwithstanding their first or dominant language.

When the relationship between interactive and interactional metadiscourse is considered, variations among corpora are still evident (Figure 4). In general terms, a similar pattern is identified in abstracts published in English, with interactional resources outnumbering interactive features (55.8% vs 44.2% in Eng-Sp, and 58% vs 42% in Eng-Eng) but a different trend is observed for abstracts written in Spanish, where the percentage of interactional elements is slightly lower than that of interactive ones (47.7% vs 52.3%). As evidenced in the apparent shift by Spanish speakers towards the inclusion of fewer interactive elements and greater interpersonal resources in English texts, metadiscourse use is neither generalizable across languages nor isolated from contextual features; interaction patterns are rather highly influenced by external demands, impelling writers to adapt discourse choices to meet the perceived demands of differing discourse communities.

These findings seem to contradict possible assumptions regarding linguistic transfer from the first or dominant language of writers, and early findings regarding Spanish speakers' difficulties in negotiating claims in scholarly writing in other disciplines. Metadiscourse use in Soil Science indicates writers' apparent awareness of the existent interplay between conventions and expectations shaping writing practices. The overall equivalent pattern detected in both corpora of English-written texts suggests that Spanish speakers' discourse practices are amalgamated to prevailing practices of interaction in international spheres of academic communication, in terms of the "writers' ideas of appropriate writer-reader relationships" (Hyland, 2011, p. 193).

Figure 4
*Patterns of interactive and interactional metadiscourse use per corpus expressed as normalized percentages*



Source: Own elaboration

Finally, the three corpora were contrasted in terms of individual resources (Table 5) and their distribution along the five rhetorical moves of abstracts was further analyzed. Once again, discourse choices were very much alike for English-written texts, regardless of the writers' dominant language, with a prevailing pattern of boosters, hedges and code glosses (accounting for 55% and 57.1% of all metadiscourse in Eng-Sp and Eng-Eng, followed by transitions and endophoric markers in both corpora. Although the number of total resources per 1,000 words in Eng-Sp (122.4) is superior to values found in Eng-Eng (113.7), the contrast is not statistically significant.

As for the Sp-Sp corpus, boosters and code glosses represent the preferred metadiscourse markers (accounting 47.1% of the features found), followed by endophoric markers (13.3%) and hedges (12.6%). Once again, similarities identified in both English-written corpora indicate that Spanish speakers tend to adjust writing patterns to meet the demands of an international, English-dominated academic sphere, either increasing or decreasing certain resources to match leading trends of interaction by English speakers. The number of code glosses per 1,000 words slightly declines from Sp-Sp to Eng-Sp (19.6 and 17 resources per thousand words; this difference is statistically significant,

Z = 3.44), while the number of transitions and attitude markers notably growths if both corpora are contrasted (6.6 and 12.5 transitions, and 5.9 and 11.8 attitude markers in each corpus; in both cases, the differences are statistically significant; Z = -2.48 and Z = -2.64, respectively), in an apparent attempt to emulate English speakers' interaction patterns, in line with findings reported in Portuguese speakers (Vieira Santos & Nunes da Silva, 2016).

Table 5
*Metadiscourse resources identified in each corpus expressed per 1,000 words and as percentages*

| Metadiscourse resources | Sp-Sp | | Eng-Sp | | Eng-Eng | |
|---|---|---|---|---|---|---|
| | Per 1,000 w | As percentage | Per 1,000 w | As percentage | Per 1,000 w | As percentage |
| Transition Markers | 6.6 | 6.8% | 12.5 | 10.2% | 11.3 | 10.0% |
| Frame Markers | 10.4 | 10.7% | 9.7 | 7.9% | 7.5 | 6.6% |
| Evidentials | 1.3 | 1.4% | 1.6 | 1.3% | 3.2 | 2.8% |
| Endophoric Markers | 13 | 13.3% | 13.3 | 10.9% | 11.2 | 9.8% |
| Code Glosses | 19.6 | 20.1% | 17 | 13.9% | 14.6 | 12.8% |
| Self-mentions | 0.1 | 0.1% | 4.7 | 3.9% | 2.9 | 2.5% |
| Hedges | 12.3 | 12.6% | 17.6 | 14.4% | 21.8 | 19.2% |
| Engagement Markers | 1.7 | 1.8% | 1.6 | 1.3% | 2.8 | 2.4% |
| Boosters | 26.3 | 27.0% | 32.6 | 26.7% | 28.5 | 25.1% |
| Attitude Markers | 5.9 | 6.1% | 11.8 | 9.6% | 9.9 | 8.7% |
| Total | 97.3 | 100% | 122.4 | 100% | 113.6 | 100% |

Source: Own elaboration

Despite overall likeness between Eng-Sp and Eng-Eng texts regarding the selection of certain metadiscourse elements over others, a small yet worth-noting difference can be mentioned regarding the use of hedges and evidentials in the three corpora; although the number of both resources increases from Sp-Sp to Eng-Sp, Spanish speakers publishing in English seem to fall short on the use of such specific features of interaction in comparison to speakers of English as a first or dominant language. As far as hedges are concerned, for instance, their oc-

currence in Spanish speakers' corpora accounts for 12.6% and 14.4% of the total metadiscourse (in Sp-Sp and Eng-Sp, respectively), as opposed to 19.2% in texts written by speakers of English as a first language; these contrasts are statistically significant (Eng-Eng vs. Sp-Sp, Z = -3.57; Eng-Eng vs. Eng-Sp, Z = -2.78). This might indicate a certain difficulty in the handling of mitigation by Spanish speakers, as suggested in prior research (Divasson Cilveti & León Pérez, 2006) but it may as well result from deliberate choices by Spanish speakers. In the same line, the inclusion of self-mentions in Eng-Sp corpus (3.9%, compared to 2.5% in Eng-Eng corpus) may as well indicate alternative interaction strategies by Spanish speakers when participating in international spheres of scientific communication, although this contrast is not statistically significant.

When the distribution of metadiscourse along the rhetorical structure of abstracts in each corpus is contrasted (Figure 5), a somewhat parallel pattern is evident in abstracts published in English written by either dominant or additional language users; metadiscourse prevails in moves 4 and 5 to synthesize findings and to discuss them, but metadiscourse is also used to present the research background or contextualize it (move 1), regardless of the authors' first language; contrasts in the use of metadiscourse across moves in Eng-Sp and Eng-Eng are not statistically significant.

As for Spanish abstracts, interaction patterns resemble those found in English, with most metadiscourse elements concentrated in moves 4 and 5, which might be accounted for in terms of the main abstract function. In fact, while Spanish-written texts use a considerable amount of interactive metadiscourse (mostly code glosses and frame markers) to describe the research methodology (move 3) and English-written texts attribute greater importance to contextualizing research (move 1), these contrasts are not statistically significant. This suggests that the distribution of metadiscourse across abstracts' moves may be determined by rhetorical and disciplinary patterns rather than by dominant or publication languages.

Figure 5
Metadiscourse distribution per 1,000 words along the rhetorical organization of abstracts per corpus
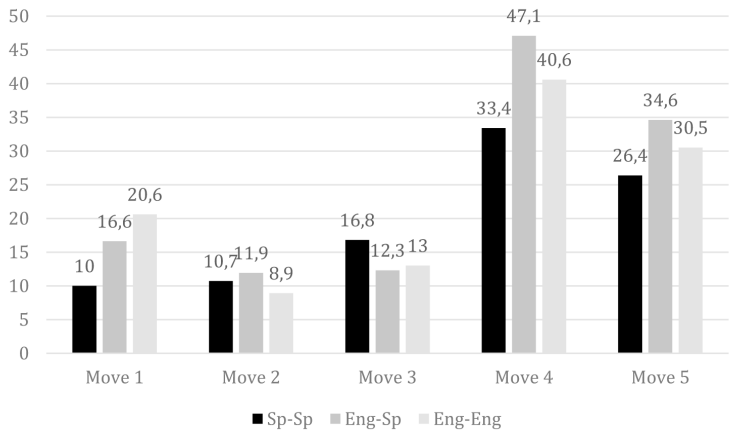


Source: Own elaboration

## Conclusions

The current study was aimed at exploring interaction in the writing of abstracts based on the assumption that discourse patterns are neither static nor generalizable to all fields and languages. Upon such premise, a contrastive analysis of interaction as evidenced through metadiscourse was conducted with a compiled corpus of abstracts in Soil Science, a discipline which has remained unaccounted for despite its relevance for developing countries in particular. Findings contributed to better understanding preferred discourse choices in the field, as influenced by equally important factors shaping writing, such as writers' perceived demands from the discourse community.

On the one hand, writers' awareness of the persuasive function of the genre was evidenced both in the prevailing use of boosters as the main interpersonal feature and in the rhetorical complexity associated to the presentation and discussion of research outcomes. On the other hand, their understanding of writing as social practice was manifested in their apparent sensitivity to contextual features. As far as Spanish speakers are concerned, it is such sensitivity to context that possibly influences decisions to amalgamate with interac-

tion patterns in central spheres of scholarly publication. Rhetorical choices identified when corpora were contrasted suggest that Spanish speakers' decisions can by no means be explained in terms of mere linguistic preferences, but are likely grounded in deeper issues at stake, such as the influence exerted by socio-rhetorical aspects of the target discourse community. That is, writers' perception of fiercer demands and expectations from an international readership may at least in part account for the shift identified from Spanish discourse patterns to English patterns of interaction dominating international scholarship; despite the overall tendency towards accommodation or amalgamation to English preferences of interaction, few divergencies were observed, including more self-mentions and less hedging, which may indicate coexisting communication patterns and deliberate participation strategies by Spanish speakers in Soil Science.

Despite corpus size limitation, findings represent a contribution to Discourse Analysis and Intercultural Rhetoric, with pedagogical implications for guiding novice writers' choices in English for Research Publication Purposes. Ethnographic studies could further explore writers' motivations, expectations, and experiences when adjusting their abstracts to varied audiences.

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# Appendix

## Metadiscursive resources in abstracts published in English and Spanish in Soil Sciences[2]

| | | English | Spanish |
|---|---|---|---|
| Interactive | Frame markers | aim<br>objective/s<br>numbering (1, 2, 3, i, ii, iii) | objetivo |
| | Transition markers | however<br>also<br>but<br>while<br>therefore<br>thus | mientras / mientras que<br>sin embargo |
| | Endophoric markers | that, this, these, those<br>which<br>both (or its equivalent "the two")<br>each<br>respectively"<br>other / the other<br>the latter | este/a/o/os<br>lo/a cual, los cuales, lo/s que, donde<br>ambas/os (or its equivalent "los dos")<br>respectivamente |
| | Code glosses | ()<br>:<br>,<br>i.e or e.g | ()<br>:<br>, |
| | Evidentials | names (models, indexes, programs, methods | names (models, indexes, programs, methods) |

| Interactional | Hedges | indicate (indicate/s, indicated, indicating) suggest (suggest/s, suggested, has been suggested) potential (as noun or adj)/-ly may (may be, may not be) could (could be) only can (can be) would (would be) associated (associated with) whether / if clauses related to likely appear (appear, appears) relative/relatively | poder (en presente "puede/n" o condicional "podría") |
|---|---|---|---|
| | Boosters | show (showed, shows, has shown to be) lead to (led to) significant/-ly high/higher/ the highest enhance found (was/were found) all wide/ly also (with intensifying function) increase (increased, increasing) great (greater, the greatest) will (will differ, will be reduced, will be explained, etc) more, the more, the most | mostrar (mostró) presentar (presentó, presentaron) mayor (la, el mayor, mayores) más (más o la más...) también (como también) with intensifying function |

| Interactional | Attitude markers | important /-ly (in)effective/-ly | -- |
|---|---|---|---|
| | Self-mentions | we our | -- |
| | Engagement markers | should (+ verb active or passive voice) certain expressions with "it is ADJ + to infinitive (it is unwise to ignore, it is necessary / important...) | permite (+ infinitivo) |

Source: Own elaboration