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Struggling for Quality: An Investigation of Disclaimers in Research Articles of Hard and Soft Disciplines

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Abstract: To ensure the quality and integrity of propositions in research articles, academic writers employ disclaimers to refine the linguistic and methodological choices that might otherwise lead to potential misinterpretation or misuse. Disclaimers serve as a metadiscursive tool to delineate the scope of claims, clarify limitations, and enhance the precision of scholarly communication. To gain a deeper understanding of how disclaimers are utilized in academic prose, a corpus of 80 research articles (RAs) from the disciplines of English Language Teaching (ELT) and Biology was analyzed. The findings revealed a notably higher prevalence of disclaimers in ELT articles compared to those in Biology, suggesting disciplinary variations in metadiscursive strategies. Moreover, the results, discussion, and conclusion (RDC) sections were identified as containing significantly more disclaimers than other subsections, underscoring their critical role in framing cautious and nuanced interpretations of findings. Qualitative analysis further indicated overlapping types of disclaimers with recurring patterns, highlighting the need for meticulous examination of each proposition to ascertain the precise nature of what is disclaimed. These insights suggest that disclaimers offer valuable metadiscursive options for enhancing precision and clarity in academic writing, enabling scholars to construct more robust and credible arguments while fostering effective communication within their respective fields.

Keywords: Academic Writing, Argument credibility, Metadiscourse, Metadiscursive Strategies, Propositional Clarity

Introduction

Language is far more than a tool for communication, it fundamentally shapes how we think and perceive the world around us. Early linguists like Sapir (1921) and Whorf (1956) argued that our thoughts are molded by the structures of our languages, a perspective that Johnstone (2018) extends by highlighting language's power to construct our perceptions of the world. Within this dynamic, academic discourse emerges as a force, framing how knowledge is produced, debated, and understood. As different academic settings have distinct norms and conventions that govern the production and sharing of knowledge (Swales, 1990, 2016), conventional use of language plays an important role in persuading members of specialized discourse communities.

The need to utilize language more efficiently by different academic discourse communities presupposes the possession of different ideologies that have gradually led to different conventionalized ways of using language (Johnstone, 2018; Swales, 2016). The conventionalized use of language mostly includes the use of specific grammar, lexis, logic, and rhetoric that ends up in

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developing a shared identity by the members of a discourse community, encouraging taking similar actions (Swales, 1990; Swales & Feak, 2004).

The need for and the use of different ways of communication within and across discourse communities gives rise to different genres (Swales, 1990). Genre can be considered as a method of accomplishing a specific communication goal that emerges in response to some epistemological and rhetorical needs, and it will change in answer to the change in those needs (Dudley-Evans, 1994). As a genre developed among academicians, research articles (RAs) are of great importance among the members of academic community for exchanging ideas, facilitating the growth of knowledge in different fields, encouraging collaboration among academic members (Salager-Meyer, 2014; Swales, 1990), and finally shaping the world. Genres also have had a crucial role in language studies and education (Xia, 2020). By exploring the languages of various genres, researchers can deepen their understanding of the social, cultural, and communicative purposes that shape text conventions (Hyland, 2007). This understanding can provide help for educators to teach text construction more effectively and for members of different communities to gain use of appropriate strategies.

Academic writing (specifically RAs as said) is a vital mechanism for constructing and disseminating knowledge within disciplinary frameworks, where conveying the truth and maintaining precision are indispensable for scholarly integrity and influence. Truth, as a socially negotiated construct, relies on writers adhering to community-sanctioned practices and engaging transparently with peers to establish credible, intersubjective knowledge (Hyland, 2000). Precision complements this by requiring meticulous language and rhetorical choices to accurately reflect disciplinary contexts, ensuring clarity and alignment with established norms (Swales, 1990). Bazerman (1988) emphasizes that such precision shapes arguments into persuasive forms recognizable within specific fields, avoiding vagueness that could undermine their validity. Together, these principles enable academic writing to serve as a reliable conduit for ideas, balancing the communal nature of truth with the exacting demands of disciplinary discourse.

From among different logical and rhetorical conventions employed to enhance the persuasiveness in academic interactions, metadiscursive strategies are widely used and examined in the literature (Abdi et al., 2010). Metadiscourse investigates how writers try to interact with readers and help them understand the text easily and quickly in each genre (Hyland, 2018). It also helps them show their stance, guide interpretation, organize the text, and shape the relationship between the interpreter and the speaker/writer (Hyland, 2018; Ädel, 2006; Crismore & Farnsworth, 1990). Such an approach views writing as a social process and shows the ways through which the writer can engage readers throughout the text (Hyland & Tse, 2004). In view of the above, exploring and understanding the use of metadiscourse (how writers interact with readers) and discourse (the actual language used to convey meaning), considering them as a whole unit acting together to produce a more persuasive text, has a considerable impact on both learning and teaching academic writing. Meanwhile, disclaimers as a kind of metadiscursive strategies introduced by Abdi (2012) in the light of such a unitary perspective to discourse and metadiscourse, play an important role in propositional accuracy and helps the readers to identify the intended meaning in a clearer way closer to the intention of the author by preventing misinterpretations and misunderstandings from happening. However, no attention has been paid to the amount and how disclaimers (as metadiscursive strategies) function within research articles considering the model of metadiscourse proposed by Abdi (2010). Thus, we aim this study of disclaiming as a quality-enhancing metadiscursive strategy helps teachers in teaching and incoming academic members in learning how to use such strategies to let their readers catch the intended meanings in their propositions. We investigate the use of disclaimers as a quality-enhancing metadiscursive strategy, aiming to compare their frequency and function in ELT as a representative example of soft science and Biology as a representative example of hard science.

Literature Review

Discourse Analysis

Throughout history in general, and more specifically due to the "linguistic turn" in the 20th century, the role of language has considerably qualified in our lives. As Johnstone (2018) believes, language cannot be considered alone as it happens in the complicated context of use among the members of different societies, meaning that communication is more than just exchanging information in an act of discourse. It involves serious social and cultural engagement and reflects the speaker/writer's thoughts and attitudes (Saidian, 2023). As a method to explore the language-related aspects of discourse, discourse analysis aims to show how varying choices of wording can generate different sociopolitical structures, specifically in academic fields. Some examples are the works of Hyland (2000, 2009) where the focus is on the way different disciplinary communities affect the formation of discourse and the way language is used within academic fields. He highlights the fact that discourse includes more than just linguistic structures, including the dynamic role of conventions and communicative purposes that widely differ among disciplines. These disciplinary variations shape how writers frame and limit their claims within their RAs.

Metadiscourse

Effective communication anticipates the expectations of the audience and involves them in the text to help them understand the text more quickly and more easily (Amiryousefi & Rasekh, 2010, Abbasi Aghdam & Mahdavirad, 2024). Metadiscourse employs strategies to facilitate the ways writers/speakers interact with readers/listeners, by organizing the text and establishing interpersonal relationships (Yue, 2020, Rostami Aboo Saeedi et al., 2023). While discourse encompasses the ways language is used to convey the intended meaning, metadiscourse includes the ways language is used to evaluate and guide the discourse (Martin & White, 2005). Metadiscourse strategies play a crucial role in establishing interactive and interpersonal relations, thereby aiding the persuasion of the audience regarding the value and tenability of the research findings. To master writing practices specific to a particular field, it is important to comprehend and utilize metadiscourse in a more proficient and productive manner (Heidari Tabrizi, 2017). Different metadiscourse models have been introduced in order to facilitate understanding and use of metadiscourse (e.g., Crismore, 1989; Vande Kopple, 1985; Hyland, 2005a; Adel, 2006), the most recent of which is a model based on Grice's (1975) cooperative principle proposed by Abdi et al. (2010). This model proposes a strong relationship between discourse and metadiscourse where the cooperative principle influences every choice in both levels of discourse and metadiscourse.

Hard and Soft Disciplines

Although logic and rhetoric shape every act of communication, disciplines follow different methods and rules due to their philosophical positions. In the hard sciences, scientists try to eliminate personal biases and subjective interpretations by relying on measurable data and rigorous experiments (Popper, 1959). This aligns with positivism's emphasis on empirical evidence and scientific method. The aim is to produce knowledge that can be widely applied, aiming to identify universal laws and principles that are generalizable to various situations (Shapin, 1996). Soft sciences, or social sciences, explore human behavior, society, and the systems created by humans. Unlike the hard sciences, the subject matter of soft sciences often involves complex phenomena that are challenging to measure quantitatively (Storer, 1967). In contrast to positivism, constructivism proposes that individuals create knowledge through subjective experiences and interactions. These epistemological and methodological distinctions also influence how scholars in each discipline communicate knowledge. In hard sciences, where objectivity and generalizability are valued, writers tend to minimize personal involvement to maintain an impersonal tone. In contrast, soft sciences, grounded in constructivist and interpretivist paradigms, often require writers to acknowledge multiple perspectives, uncertainty, and subjectivity.

Consequently, metadiscursive strategies such as disclaimers, are expected to occur more frequently in soft-science writing, where authors negotiate meaning and stance more explicitly. This distinction provides the rationale for comparing the use of disclaimers across disciplines in the present study

Cooperative Principle and Gricean Maxims

Human communication follows some rules and regulations, specifically in academic context. Grice's cooperative principle suggests that when participants engage in a conversation, they try to be cooperative, keep the goal of the conversation, and be informative and relevant. This principle is achieved through sticking to four maxims of quantity, quality, relation and manner (Table 1).

Table 1

The Categories of Cooperative Principle and Four Maxims

Category	Maxims
Quantity	1. Make your contribution as informative as is required. 2. Do not make your contribution more informative than required.
Quality	**Try to make your *contribution* one that is true:** 1. Do not say what you believe to be false. 2. Do not say that for which you lack adequate evidence.
Relation	**Be relevant.**
Manner	**Be perspicuous:** 1. Avoid obscurity of expression. 2. Avoid ambiguity. 3. Be brief. 4. Be orderly.

As outlined in the model of metadiscourse introduced by Abdi et al. (2010), to make an effective use of language in academic context, we need to adhere to the cooperative principle in order to make our text informative, truthful, relevant, organized and clear. Within this framework, metadiscursive strategies such as disclaimers play a key role in maintaining cooperation between writers and readers, as they help authors clarify meaning, manage precision, and prevent potential misinterpretations.

Disclaimers

Creating high-quality texts and improving comprehension levels are considered as primary objectives of developing academic texts by authors of different disciplines (Abdollahzadeh & Zolfaghari-Erdechi, 2012). As noted above, Abdi et al. (2010) proposed a new model of using metadiscourse, building upon Grice's cooperative principle, where building quality is a vital part of communication. As we were interested to investigate the employment of disclaimers as metadiscursice strategies, we chose to gain use of the mentioned model. Disclaimers, in this model, are considered as a metadiscursive strategy which enhances the quality maxim of the text. As proposed by Abdi (2012):

> As part of an attempt to promote quality, disclaimers are utterances in a variety of linguistic forms employed retroactively or proactively to disavow unintended interpretation, generalization, implication and/or application of ideas, which, as perceived by the writers, are likely to occur as a result of self and others' less than ideal linguistic and methodological choices. (Abdi, 2012, p. 366)

Disclaimers can appear anywhere in a text. As disclaimers are used to soften or negate certain statements, they are normally expressed negatively. It means that while we use other strategies to say what something is, disclaimers say, in the first place, what something is not (Abdi, 2012). He carried out an investigation of disclaimers in 120 RAs from different journals of pure and applied social and natural disciplines and identified six binary categories of disclaimers. Each binary type is mutually exclusive, that is, a disclaimer can be overt or covert; excluder or includer, etc. Meanwhile, the six types each serve specific perspectives and functions, as illustrated in Table 2.

Table 2

The Types, Perspectives, and Functions of Disclaimers (Abdi, 2012, p.364)

Disclaimer types	Perspective	Function
Overt vs. covert	Pragmatic	Points to the (stated/implied) intended Meaning.
Excluder vs. includer	Semantic	Shows the specificity or generality of a disclaimer.
Internal vs. external	Referential	Indicates the referent of a disclaimer.
Warning vs. clarification	Illocutionary	Refers to what a disclaimer wants to do.
Antecedent vs. subsequent	Directional	Specifies the backward or forward direction.
Local vs. global	Scope	Designates the coverage of a disclaimer.

As introduced in Abdi (2012), a brief definition of the disclaimer types with examples is provided below for quick reference:

1. Overt vs. covert:

- Overt disclaimers refer to phrases which directly disclaim an utterance (usually by determining the scope of their proposition). Example: *"**The results cannot be generalized to …**"*

- Covert disclaimers are phrases that indirectly disclaim an utterance. Example: *"These results are **based on uncontrolled** case reports"*

2. Excluder vs. includer:

- Excluder disclaimers function to block untenable interpretations or exclude the exceptional cases. Example: *"**It does not necessarily suggest that …**"*

- Includer disclaimers function to specify and determine what is allowed. Example: *"The **only** straightforward prediction is …"*

3. Internal vs. external:

- Internal disclaimers are disclaimers that have internal reference, that is, they refer to the paper which is being written. Example: *"**This study included only** three task types"*

- External disclaimers have external reference, meaning that they refer to other studies like "However, **they conclude, these results do not imply that …"**

4. Antecedent vs. subsequent:

- Antecedent disclaimers refer to what is going to be said later. Example: *"**These findings are not related to …"***

- Subsequent disclaimers refer to what has already been said. Example: *"**This study did not address …**"*

5. Warning vs. clarification:

- Warning disclaimers are used as warning and are explicit caution words. Example: *"These results **should be interpreted with caution"***

- Clarification disclaimers are used to make the statement clearer. Example: *"These findings **do not necessarily mean…"***

6. Local vs. global

- Local disclaimers refer to statements that are quite close to (occurring immediately before or after) the disclaimer. Example: ***"This statement does not imply that …"***

- Global disclaimers do not refer to specific statements; rather, they address a section or the whole manuscript. Example: ***"In this paper, the aim is not to …"***

In accordance with the objectives of the study, the researchers formulated the following research questions:

Research Question One: Is there any difference in use of disclaimers between the fields of ELT and Biology?

Research Question Two: Are there any principles patterns that can provide guidance in the way the disclaimers are employed?

Methodology

Design and Procedure of the Study

The study adopted a mixed-method design, investigating the disclaimers from both quantitative and qualitative perspectives as it was assumed it could provide a more plausible explanation to the nature of this metadiscursive strategy (Morse, 2016).

This study aims to investigate the use of disclaimers as a metadiscursive strategy in two disciplines from hard and soft sciences. The rationale behind considering the two disciplines was that they arguably differ in underlying theories and methodologies, with the former focusing primarily on objective methods and the latter on more subjective ones (Kirk, 1995). As some of the RAs needed to be purchased, the free access RAs were selected to be investigated. For this purpose, convenience sampling was followed to select RAs. Two disciplines of ELT and Biology, and five journals from each were chosen. A further criterion for choosing journals was the credibility of the journals judged by their indexing information. Then, eight most recent RAs were selected from each journal, totaling to 80 RAs from the two disciplines. This size was considered appropriate for the purpose of the study. The aim of this research was not to achieve large-scale generalization, but to identify patterns of disclaimer use within representative samples of two disciplinary contexts. As the three sections of introduction, method, and RDC were to be studied following Swales (1990), the articles with different formats were excluded. Also, in order to roughly adjust the length of the corpus, we tried to select RAs with almost similar word counts from each discipline.

Qualitative and quantitative data were gathered according to the linguistic token and markings introduced by Abdi (2012). These coding categories served as the basis for both the frequency analysis and qualitative observations. The authors consistently discussed the examples with each other to ensure that they are analyzed as objectively as possible. To ensure the objectivity of the analysis, ten research articles from each discipline were independently examined by three experts. The 95% agreement between their evaluations and our data confirmed the reliability and objectivity of the analysis process. Some examples are selected while examining the corpus to be discussed in the qualitative section of the discussion. Each example is numbered, the disclaimers are underlined, and the journal's name is mentioned at the end of each example. The journals' name is mentioned in the appendix section of the article. Following the list of tokens and markers and through examining the corpus (See Abdi, 2012 for the list), the frequency of different categories of disclaimers were obtained. While examining the corpus, we noted the fact that the function of tokens as disclaimers was context-dependent.

Data Analysis

The quantitative section involved analysis of the corpus to identify the frequency and distribution of disclaimers, which in turn revealed discipline-specific and section-specific patterns of use in RAs. Then, the chi-square test was used as an inferential analysis to determine the significance of differences in the frequency of use. In the qualitative part, on the other hand, we sought to identify any specific and noteworthy employment of disclaimers while examining the data. A diary was kept during the data collection to record and identify such instances.

Results and Discussion

Quantitative Section

In order to answer the first research question, the results of the quantitative analysis appear in Table 3 below. The x2 values are calculated across the disciplines, the subsections and also across the disclaimer types. All x2 values exceed critical values with the relevant degrees of freedom of 1, 2 and 5 respectively, which shows a significantly different distribution.

The Use of Disclaimers Across Discipline

The analysis (Table 3) reveals that the ELT corpus contained 838 disclaimers, compared to 320 in the Biology corpus, with chi-square tests confirming a significant difference both in amount of disclaimer employment across disciplines and in employment of six disclaimer categories across disciplines. This suggests that authors' tendencies to either include or avoid disclaimers, and how they do so, driven by the nature of their propositions, differ significantly across fields, reflecting distinct disciplinary influences on rhetorical choices.

Table 3

Frequency and Chi-square values of the Disclaimers across Disciplines, Subsections and Types

	Introduction		Methods		RDC		Total				x^2 across subsections	
Disclaimer types	ELT	Biology	ELT	Biology	ELT	Biology	ELT*	Biology*	x^2 across disciplines	Total	ELT	Biology
Overt/Covert	29	2	8	7	172	55	209	64	77	273	228.65	80.27
Excluder/Includer	124	28	37	12	191	153	352	193	46.38	545	101.61	185.28
Internal/External	53	2	8	3	28	10	89	15	52.64	104	34.26	7.6
Antecedent/ Subsequent	4	0	4	2	29	9	37	11	14.08	48	33.77	12.2
Local/Global	26	0	11	2	58	12	95	14	60.18	109	38.97	17.73
Warning/ Clarification	24	4	6	3	26	16	56	23	13.78	79	31.98	13.65
Total	260	36	74	29	504	255	838	320	231.71	1158	332.96	344.79

* X^2 value across the six types of disclaimers is 515.48 for ELT and 478.03 for Biology.

The observed difference in disclaimer use aligned with what we had generally expected, given that Biology and ELT represent distinct domains, hard and soft sciences, respectively. Biology, rooted in the positivist paradigm of hard sciences, prioritizes objectivity and impersonality, reducing subjective

interpretations and yielding more standardized findings with fewer "rough edges" (to put it in Abdi's (2012) words) requiring disclaimers (Mertens, 2014). Conversely, ELT, aligned with the constructivist paradigm of soft sciences, embraces subjective perspectives and explores complex, context-dependent phenomena like language learning and sociocultural factors (Borg, 2013), necessitating more disclaimers to address inherent uncertainties and nuances. Each paradigm and perspective in academic writing possesses distinct strengths and limitations in effectively conveying information and crafting persuasive arguments (Miller, 2002). Although no particular finding aligns with this finding, Hyland (1988) and Hyland (2005b) informed that the use of hedges was more in soft domains of knowledge than hard as the claims have to be expressed more cautiously. Hedges do not serve the same function as disclaimers. However, both serve to express the claims in a more cautious way.

Consequently, the choice to employ or forgo a specific rhetorical strategy should not be deemed imprudent for academic writers. The overall effectiveness of academic writing hinges on several critical factors, including rigorous research, the writer's expertise, and their capacity to communicate ideas clearly and persuasively throughout the manuscript development process (Day & Gastel, 2016). It is crucial to recognize that although the authors of Biology RAs did not employ disclaimers as much as it is employed by the authors of ELT RAs, members of the biological academic community do care about their statements and propositions; rather, these should be assessed in the context of various influencing factors, including the broader disciplinary norms and the specificity of the propositions themselves. As noted by Swales and Feak (2012), quality is an indispensable element of academic writing, essential for the successful conveyance of complex information and ideas. Hence, academic communities generally prioritize high-quality writing and exhibit careful precision in their language use. Ultimately, authors are acutely aware that their statements will undergo scrutiny first by gatekeepers and subsequently by peers and the wider community. these findings extend previous work on disciplinary variation in metadiscourse strategies (Hyland, 2005b) by demonstrating that disclaimers, as a distinct metadiscursive resource, follow similar disciplinary patterns but perform different rhetorical functions. Specifically, this study provides new evidence that disclaimer use is not merely a stylistic preference but a reflection of disciplinary epistemologies and communicative expectations. This reinforces the view that disciplinary discourse practices are shaped by underlying beliefs about knowledge, certainty, and authorial responsibility.

The Use of Disclaimers Across the Subsections

Table 3 highlights that disclaimers are employed far more frequently in the RDC sections in both disciplines, leading to significant differences in amount of disclaimer employment across each corpus subsections. This trend may arise because the Introduction and Method sections typically present straightforward, less controversial content, clearly outlining the study and its methods (Glasziou et al., 2014). On the other hand, the RDC sections, rich with critical findings, interpretations, and implications, carry the most valuable insights (Gustavii, 2017; Şanlı et al., 2013). Subject to intense scrutiny from the research community for their role in gauging study quality (Kallestinova, 2011), these sections often prompt authors to include disclaimers to clarify limitations or biases, aiding readers in assessing the research's quality and relevance for informed decision-making. Moreover, in ELT research, where arguments often involve subjective interpretations of language learning, teaching contexts, and human interaction, authors may rely more heavily on disclaimers to acknowledge the interpretive nature of their analysis and to manage the inherent uncertainty in qualitative claims. In contrast, Biology's more empirical and standardized methodology allows for greater objectivity, reducing the perceived need for extensive qualification in reporting results

Another chi-square test revealed a significant difference in the use of the six disclaimer categories between subsections of each of the two disciplines, suggesting that subsection-specific factors influence the use of particular disclaimer categories. Trying to be more specific, the results in Table 3 also show that the excluder/includer category of disclaimers is the most frequently used across all subsections and disciplines, likely due to its core function of excluding the unintended while

including the intended, which is actually the defining feature of a disclaimer. This prevalence highlights its utility in ensuring clarity and specificity. These findings may indicate that disclaimer use varies by subsection goals, confirm the importance of disclaiming in RDC sections, and show the dominance of the excluder/includer category.

In addition, our analysis of the ELT corpus revealed that the use of all categories of disclaimers, except for internal/external disclaimers in the Introduction section, was significantly more prevalent in the RDC sections compared to both the Introduction and Methods sections. This trend contrasts with findings from the Biology corpus, where the employment of disclaimers was highest across all six categories in the RDC sections. One potential explanation for this disparity is the inclusion of a Review of the Literature section in ELT research articles, which tends to be extensive. In this section, authors commonly cite the works of others and may use disclaimers to differentiate their contributions. Although some Biology research articles also feature a literature review, these sections are generally much shorter, potentially limiting the opportunity for disclaimer use in that discipline.

All in all, it can be said that each subsection of RAs serves a different rhetorical goal (Bordage, 2001) and has different word counts. Therefore, they may reasonably require different types and numbers of disclaimers. For instance, in the Introduction sections, authors may utilize disclaimers to address the limitations of their or other's study. Within the Method sections, disclaimers may center on potential limitations or biases of the research design and methodology. In the RDC sections, on the other hand, authors may employ disclaimers to emphasize the potential limitations of their findings and accordingly suggest future research to compensate. In addition, disciplinary conventions and subsection objectives in different fields may lead to different patterns of disclaimer employment, both in terms of amount and category, in different fields.

Quantitative Section

The Use of Disclaimers Across the Subsections

Besides the quantitative section, we had a look at the disclaimer-containing propositions in the corpus to capture any point that in one way or another could have a significance in better understanding and using disclaimers. We tried to see whether some pattern of use for disclaimers of different kind can be recognized in order to answer the second research question. Thus, the following findings offer some insights into overlapping disclaimers as well as some patterns of appearance which can provide a deeper understanding of the nature of disclaimers and how they are employed.

Overlapping Disclaimers

As defined by Abdi (2012), the two components of each binary type in the six categories of disclaimers are all mutually exclusive. For example, a disclaimer can be categorized as either *local* or *global*, but not both simultaneously. However, a closer examination of the data reveals that, in practice, some categories tend to overlap when certain disclaimer tokens are used. For instance, a single token such as "our findings do not imply …" can be classified as an *antecedent* disclaimer, while simultaneously functioning as a *global* and *excluder* disclaimer, thereby serving multiple rhetorical purposes. Considering the overlaps happening among the six categories, no comprehensive overlapping pattern was identified except that *includers* containing the term "only" were mostly *local* as in 1, except when accompanied by expressions such as "findings of this study" or "in this paper …", which are indicators of *global* disclaimers, accompany "only", where they can be considered both *includer* and *global* (2):

(1) For coleopterans, the metal ions effect on pectinolytic activity has <u>only</u> been determined for the *R. ferrugineus* crude extract, …. *Journal of Applied Biology & Biotechnology*

(2) Findings of this study is only generalizable to the EFL immigrants of China as…. *The Modern Language Journal*

Furthermore, *external* disclaimers identified in the corpus were mostly at the same time *overt/covert*, and *excluder/includer*. Example 3 contains a disclaimer which is *external*, *overt* and *includer* at the same time. That is, it refers to the other research, determines the scope in terms of its limitations, and says what was included. Example 4, on the other hand is both *external* and *excluder* and example 5 is both *external* and *covert*.

(3) As previous kitchen projects have only used Western-based languages, they are not free from criticism…. *Language learning and Technology*

(4) Recent work by Hiver and Al-Hoorie (2020) indicates that intended effort is best conceptualized as a predictor variable, rather than a criterion variable, of the ideal… . *Studies in Second Language Acquisition*

(5) In a recent study, Beaudrie et al. (2019) … the authors noted that these items showed inadequate reliability and that further research is needed to validly assess the behavioral aspects that may be associated with critical language awareness. *Studies in Second Language Acquisition*

Since *external* disclaimers are used to refer to others' works, it is often used to avoid misunderstandings from them, determine what is included or excluded, and/or determine their limitations in terms of scope. Thus, based on the function and definition of *external* disclaimers, it can be expected that it would overlap with the categories of *excluder/includer* and *overt/covert* disclaimers. The overlapping disclaimers shows how the different functions of disclaimers might overlap and disclaim the sentence from different perspectives in both kinds of disciplines.

Covert Disclaimers

In Biology RAs, *covert* disclaimers were mostly employed by authors to compare their own findings with those reported by other researchers, often highlighting unexpected or anomalous results (6). Furthermore, authors provided explanations for these unexpected outcomes. On the other hand, in ELT RAs, *covert* disclaimers took a different function. Rather than making direct comparisons with prior studies, authors predominantly used covert disclaimers to acknowledge limitations within the RDC sections (7-8). These sections serve to show the challenges and complexities that the writers face during the research process.

(6) This result is at variance with studies showing a negative influence of DAG on insulin action (61, 62). One explanation could be the short time of treatment with oleate (2 h), not long enough to allow the synthesis of the right detrimental DAG species. *Journal of Biological Chemistry*

(7) The fact that a single L2 talker supplied the stimuli for the present study reduces the generalizability of its results. *Studies in Second Language Acquisition*

(8) An inclusion of L1 listeners, which unfortunately exceeded the scope of this paper, would be equally desirable, to provide a more complete picture of international intelligibility. *Studies in Second Language Acquisition*

Excluder/Includer Disclaimers

In Biology RAs, *include* disclaimers mostly contained the term "only" (e.g., 9), whereas *excluder* disclaimers were mostly expressed in exception forms (10-11). Notably, disclaimers in exception forms contained minimal or no overlaps. In other words, *excluders* in the exception forms (including words like "except of" or "with the exception of") rarely co-occurred with other types of disclaimers. Overall, biology RAs demonstrated limited overlap among disclaimers, while the greater number of disclaimers observed in ELT RAs were partly attributed to the higher incidents of overlapping categories.

(9) Only by simultaneously combining mutations from both branches could one achieve complete suppression of the paqr-2 mutant phenotypes. *Journal of Biological Chemistry*

(10) The small difference between genotypic and phenotypic coefficients of variation for most traits, with the exception of SDI, may indicate a very low environmental influence on these traits. *Biology*

(11) In the present work, all studied tomato genotypes were resistant against both the TSWV and ToMV except S. *arcanum* 1346, …. *Open Biology*

"Not" and "Only" as Disclaimers

Disclaimers are employed to avoid implausible interpretation or application of propositions where otherwise there could be misunderstandings or wrong generalizations. Thus, they mostly consist of negative statements to avoid, warn and/or make it clear. In essence, while other choices in an academic writing tend to define the nature of what something is, disclaimers primarily try to determine what something is not (Abdi, 2012). Accordingly, many disclaimers in the corpus were *includers* and contained "only" (as in example 12 which tries to avoid readers considering more than what is exactly intended), or were *excluders* and contained "not" (as in example 13 which avoids readers from considering what is not intended). However, it is important to note that not all "not"s and "only"s were disclaimers (as in example 14 in which they simply deliver facts in the real world).

(12) ...the LREs that were coded in the present study only reflect one aspect of interaction… *Language Learning & Technology*

(13) A possible justification for the considerable attention given to word choice (and not morphosyntax or orthography) in this study may stem from... *Language Learning & Technology*

(14) We did not concern ourselves with these two interaction terms because only a small number of learners in our data contributed 112/113 writings. *Language Learning Journal*

Conclusion and Implications

As a general rule, it is important to bear in mind that when creating a written or spoken text in various genres, particularly in academic writing, the aim is to produce a text with high quality and professional accuracy. Quality, as defined by Grice (1975), entails presenting something in any interaction which we believe is true. This is an important feature in academic writing in which the aim of doing research is to convey true information about how the world works (Hofman, 2022) and keep our statements precise. A way to demonstrate this quality requirement in writing is by using metadiscursive devices as proposed by Abdi et al. (2010). One of these devices is disclaimer through which we can purge inadmissible edges. Having six categories, each based on different perspectives and functions, disclaimers significantly contribute to raising the quality of propositions in academic writing.

This paper investigated the employment of disclaimers in RAs within the fields of Biology and ELT. Considering the findings about the amount and the variety in disclaimer employment within and between the two chosen disciplines, the study has suggested that disclaimers play a crucial role in academic communication, serving as a barrier against misinterpretations and misunderstandings, particularly in soft sciences. This study explored the use of disclaimers as metadiscursive devices in academic writing across two disciplines, Biology and ELT. The findings showed that disclaimers were more prevalent in ELT research articles, reflecting the interpretive nature of soft sciences compared to the objectivity of hard sciences. Additionally, the RDC sections contained more disclaimers than other sections, emphasizing the authors' awareness of potential limitations and interpretive claims.

Theoretically, this research contributes to understanding how disciplinary paradigms shape rhetorical practices in research writing as well as revealing the different patterns that might occur in

using disclaimers (as mentioned in qualitative section). Pedagogically, it provides insights for teaching academic writing, helping novice writers use disclaimers effectively to convey appropriate levels of certainty and responsibility. However, this study is limited in scope, focusing only on 80 research articles from two disciplines. Future research could expand the corpus to include other fields such as social sciences or engineering, or explore cross-linguistic comparisons to see whether writers in different linguistic or cultural contexts employ disclaimers differently. It would also be valuable to investigate how disclaimer use evolves across publication stages (e.g., from drafts to published articles) or in non-research genres such as grant proposals or reviews.

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Declaration of Conflicting Interests

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