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The rhetorical structure of highly cited articles in linguistics

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ABSTRACT

Writing scientific articles is a major concern for novice writers, and studying rhetorical moves is an appropriate approach to address this issue. This study aims to analyze rhetorical moves in 30 highly cited international journal articles in the field of linguistics and to examine the pattern arrangements in the Introduction, Methods, and Results-Discussion-Conclusion (RDC) sections. Using a qualitative content analysis combined with frequency analysis across various frameworks, the study is grounded in Swales' (1990) theory, which conceptualizes rhetorical moves as functional components in academic writing. The findings reveal that the most frequently occurring rhetorical moves consist of eight: three in the Introduction, two in the Methods, and three in the RDC section. Each move comprises specific steps: the Introduction includes three steps, the Methods section also includes three steps, and the RDC section consists of eight detailed steps. The pattern arrangements identified are [M1 M2 M3] and [M1 M3] in the Introduction, [M1 M2 M1 M2] in the Methods, and [M3 M4 M3 M4 M5] in the RDC section. These findings highlight the importance of move-pattern awareness in academic writing and offer practical guidance for novice writers seeking to emulate effective rhetorical structures in scholarly discourse

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INTRODUCTION

Publishing scientific articles in national and international journals is a form of global knowledge sharing that reflects various perspectives on academic writing, particularly in relation to retention and promotion (Friginal & Mustafa, 2017). Scientific articles are generally structured using the IMRD

model, which consists of Introduction, Method, Results, and Discussion, followed by a Conclusion. This structure evolves and may be adapted to incorporate new theories, more sophisticated methodologies, or recent research findings (Martín, 2002). Recently, there has been growing concern among novice writers, including university students, about composing scientific articles used as final assignments (Tardy, 2019). The IMRD structure helps authors understand how to organize their writing effectively.

The IMRD model plays an important role in each part of the article, such as the introduction, which is typically the shortest section of a scientific article, yet it plays a crucial role in determining whether readers will engage with the entire text (Grant & Pollock, 2011). Often comprising five to seven paragraphs or spanning the first two to three pages, the introduction functions to emphasize the originality and novel contributions of the research. Additionally, this section identifies the gap between existing studies and current research, aiming to capture the reader's interest and encourage continued reading (Ahlstrom, 2017). According to Flowerdew (2001), the most significant challenge faced by writers lies not in surface-level linguistic errors, such as grammar, but in effectively structuring the introduction section. The methods section provides a detailed account of the procedural steps undertaken and offers sufficient information to allow for replication (Cotos et al., 2017). Authors are also encouraged to reference relevant prior studies (Bazerman, 1988) and to articulate the rationale behind key methodological decisions made during the research process (Bazerman, 1984; Gladon, Graves, & Kelly, 2011; Smagorinsky, 2008) In the IMRD structure, the results, discussion, and conclusion sections are sometimes combined into a single section. This practice aligns with Swales (1990) observation that such integration often includes a brief reference to an additional component, namely the conclusions, implications, or applications of the research findings.

Swales (1990), the originator of rhetorical move analysis, emphasizes that move analysis is a key component of genre analysis used to investigate the underlying structure of research articles, particularly in relation to rhetorical steps for pedagogical purposes. Rhetorical move analysis offers a formalized structure that supports the coherent communicative function of written academic texts (Swales, 2004). One of the most widely recognized models of rhetorical moves is the CARS model, which provides a framework for organizing the rhetorical moves in texts. The CARS model is presented in Table 1.

Table 1. CARS model Swales (1990)

Move 1: Establishing a territory	*Step 1: Claiming centrality*
	Step 2: Making topic generalization(s)
	Step 3: Reviewing items of previous research
Move 2: Establishing a niche	*Step 1A: Cunter-claiming*

	Step 1B: Indicating a gap
	Step 1C: Question-raising
	Step 1D: Continuing a tradition
Move 3: Occupying the niche	*Step 1A: Outlining purpose*
	Step 1B: Announcing present research
	Step 2: Announcing principal findings
	Step 3: Indicating RA structure

The CARS model has inspired numerous studies that apply its framework to analyze research articles across various disciplines (Alamri, 2020; Anthony, 1999; Geng et al., 2023; Lewin, 2001; Maswana, 2015; Posteguillo, 1999; Samraj, 2002). The explanation of the CARS model aligns with Briones (2012), who states that the primary purpose of a rhetorical move is to highlight the role or function of specific parts within a discourse. The importance of citation reputation as an indicator of article quality significantly influences a journal's attractiveness to both authors and readers. As noted by Bornmann and Marx (2013), one way to identify a journal's popularity is by examining the average number of citations received per article within a given year.

Previous studies have examined rhetorical moves in scientific articles within the field of linguistics (Ahmadi, 2022; Alamri, 2020; Geng et al., 2023; Kurniawan et al., 2019). However, few have conducted a comprehensive move-step analysis across all IMRD sections in highly cited articles from top-tier international linguistics journals. Highly cited articles are typically recognized for their quality, influence, and methodological rigor, making them ideal models for understanding effective academic writing practices. This study addresses that gap by analyzing the rhetorical structure of 30 highly cited linguistics articles, focusing on the frequency and arrangement of rhetorical moves in the Introduction, Methods, and Results–Discussion–Conclusion (RDC) sections. Specifically, it addresses the following research questions:

1. How do the frequencies of rhetorical moves reflect the communicative strategies used in linguistics research articles published in highly cited, reputable international journals?
2. To what extent do the patterns in the arrangement of rhetorical moves across IMRD sections contribute to the clarity, coherence, and persuasiveness of academic writing in these journals?

LITERATURE REVIEW

Rhetorical move analysis has become a central tool in genre-based studies of academic writing, particularly following Swales' (1990, 2004) development of the Create-A-Research-Space (CARS) model. This framework identifies

functional rhetorical moves in the introduction section and has been widely adopted to examine how writers establish context, identify research gaps, and present their contributions. Subsequent scholars have extended move-step analysis to other sections of research articles. Hopkins and Dudley-Evans (1988) proposed a model for the discussion section, while Yang and Allison (2003) developed a framework for analyzing moves in results and discussion sections. These models provide a theoretical foundation for understanding how academic texts achieve coherence, persuasion, and disciplinary alignment.

Building on these foundations, Alamri (2020) examined rhetorical moves across all sections of applied linguistics articles published in Saudi national and international journals. His study revealed that nationally indexed journals exhibited more variable and extended rhetorical structures, while internationally indexed journals favored linear and concise patterns. Although this study highlights cultural influences on rhetorical strategies, it does not address how these patterns relate to citation impact or academic visibility.

Nasirizadeh et al. (2022) conducted a move analysis of forestry research articles published in five high-impact journals, identifying consistent rhetorical patterns across IMRD sections. Their findings suggest that adherence to conventional rhetorical structures contributes to successful publication in prestigious outlets. However, the study focused on disciplinary norms and journal prestige, without examining how rhetorical strategies correlate with citation frequency a key indicator of scholarly influence.

While these studies offer valuable insights into rhetorical variation across disciplines and publication contexts, they fall short of connecting rhetorical structure with academic impact. Moreover, few studies have conducted a comprehensive move-step analysis across all IMRD sections in highly cited linguistics articles. This gap is significant, as citation frequency may reflect not only research quality but also the effectiveness of rhetorical presentation.

The present study addresses this gap by analyzing rhetorical moves and their patterns in 30 highly cited linguistics research articles from reputable international journals. Drawing on established frameworks such as Swales' CARS model for introductions and adapted models for methods, results, and discussion-conclusion sections, this study aims to uncover rhetorical strategies that contribute to clarity, coherence, and scholarly visibility. The findings are expected to enhance understanding of move-step analysis in high-impact writing and offer practical guidance for linguistics researchers seeking publication in top-tier journals.

METHOD

Research Design

This study employs a qualitative research design supported by frequency analysis of move occurrences. This design is appropriate for addressing the research objective, which is to examine the arrangement of rhetorical moves in the IMRD sections of highly cited, reputable journal articles.

Instruments and Procedures

The Introduction section is examined using the move structure framework developed by Swales (2004), which extends the original CARS model introduced in Swales (1990), which remains among the most widely adopted frameworks for analyzing discourse strategies within research article introductions. Methods are analyzed following the framework proposed by Cotos et al. (2017), while RDC sections are investigated using the model introduced by Moreno and Swales (2018). These two frameworks were selected because they specifically address research in applied linguistics within the broader field of social sciences, aligning closely with the scope and disciplinary context of the present study.

The integration of multiple frameworks is methodologically justified, as each model was developed to capture rhetorical conventions unique to specific sections of a research article. Employing a combination of specialized models allows for a more comprehensive and section-sensitive analysis, ensuring that the rhetorical structures of the IMRD format are accurately and appropriately interpreted in accordance with their communicative purposes.

Table 2. Move analysis in the introduction of Swales's (2004) model

Move-step
Move 1 Establishing a territory (citations required) via topic generalizations of increasing specificity
Step 1: Topic generalizations of increasing specificity
Move 2 Establishing a niche
Step 1A Indicating a gap or
Step 1B Adding to what is known
Step 2 Presenting positive justification
Move 3 Presenting the present work (citations possible)
Step 1 Announcing present research descriptively and/or purposively
Step 2 Presenting RQs or hypotheses
Step 3 Defitional clarifications
Step 4 Summarizing method
Step 5 Announcing principal outcomes
Step 6 Stating the value of the present research
Step 7 outlining the structure of the paper

Table 3. Move analysis in the method of Cotos et al.'s (2017) model

Move-Step
Move 1, Contextualizing Study Methods
Step 1 Referencing previous works
Step 2 Providing general information
Step 3 Identifying methodological approach
Step 4 Describing the setting
Step 5 Introducing the subjects
Step 6 Rationalizing pre-experiment decisions
Move 2, Describing the study
Step 1 Acquiring the data
Step 2 Describing the data
Step 3 Delineating experimental/study procedures
Step 4 Describing tools
Step 5 Identifying variables
Step 6 Rationalizing experiment decisions
Step 7 Reporting incrementals
Move 3, Establishing credibility
Step 1 Preparing the data
Step 2 Describing data analysis
Step 3 Rationalizing data processing/analysis

Table 4. Move analysis in RDC Moreno & Swales's (2018) model

Move-Step
Move 1 (AF) Announcing (function)
Step 1: (SEC)
Announcing (sub)sections
Step 2: (EXT)
Announcing or referring the reader to external sources
Step 3: MSP
Announcing moves, steps or propositional meaning
Move 2 (BGI) Background information
Step 1 (KFS)
Re-stating key features of the current study
Step 2 (RWC)
Reporting background information with citations
Step 3 (POC)
Providing background information without citations
Move 3 (SUM) Summarizing or restating key results
Step 1 (RES)
Presenting results neutrally
Step 2 (CRES)
Contrasting with other results in the study
Step 3 (HRES)
Highlighting results
Move 4 (COMM) Commenting on key results or other features
Step 1 (MEAN)
Establishing the meaning of results
Step 2 (COMP)
Comparing with previous research
Step 3 (EXPL)

Explaining results or discussing effects
Step 4 (PRED)
Making predictions
Step 5 (REACT)
Reacting to results or other features
Move 5 (EV) Evaluating the current study or other research or practice
Step 1 (LIM)
Pointing out negative features or limitations of the current study
Step 2 (STATE)
Evaluating the state of knowledge or practice in broad terms
Step 3 (CONTR)
Stating the contribution of the current study
Step 4 (POS)
Pointing out positive features of the current or proposed study
Step 5 (GAD)
Noting specific gaps in knowledge or deficiencies in other research or practice
Move 6 (IMP) Drawing implications
Step 1 (REC)
Making recommendations for future research or practice
Step 2 (APP)
Suggesting the applicability of results or usability of outcomes
Step 3 (HYP)
Hypothesizing for future research
Move 7 (ELF) Elaborating (function)
Step 1 (JUST)
Justifying what is stated in a neighboring proposition
Step 2 (EXEM)
Exemplifying what has been stated in a previous proposition
Step 3 (CLAR)
Clarifying what has been stated in a previous proposition

The analysis technique involves the manual identification of move-step structures. To systematically determine the boundaries of each step which can range from a single clause to a whole paragraph a combination of linguistic cues guided the coding process. The primary determinant was semantic content, identifying clear shifts in rhetorical purpose. This was further supported by linguistic signals such as discourse markers (e.g., *however, in conclusion, for example*) and significant shifts in grammatical features like verb tense.

To ensure consistency and address potential ambiguities where text could fit multiple steps, a rigorous inter-rater reliability process was implemented. Expert raters coded 30% of the dataset, achieving a high agreement score of 92.84%. Any discrepancies were resolved through discussion to establish a shared and reliable coding framework. Furthermore, the analysis accounts for the cyclical repetition of moves; each instance of a move was coded as a distinct occurrence to capture its function every time it appeared.

Once coded, the frequency of each move was calculated. Following an established methodological precedent in genre analysis (Kanoksilapatham, 2005), moves with an occurrence rate above 30% were classified as

conventional, and those below 30% as optional. While any frequency threshold is inherently a heuristic, this established cutoff provides a consistent and replicable basis for distinguishing between high frequency rhetorical norms and less frequent strategic choices within this specific corpus. The terms "conventional" and "optional" are therefore used in this study as descriptive labels of frequency, not as a definitive judgment on the rhetorical importance of less common moves.

Data Analysis Procedures

The data for this study consisted of 30 highly cited reputable journal articles, explicitly focusing on the Introduction, Method, Results, and Discussion (IMRD) sections. The selection of 30 articles for move-step analysis is considered sufficient to ensure data quality and reliability (Kanoksilapatham, 2005). The articles were selected through a systematic search in the Scopus database using the keyword "English language articles" and filtered for the subject area "Linguistics." The selection criteria were as follows: (1) published in reputable, peer-reviewed journals indexed in Scopus, (2) classified in the field of linguistics, and (3) having high citation counts (ranging from 753 to 2054 citations at the time of data collection). The journals from which these articles were sourced are listed in the Appendix of this manuscript.

Inter-rater reliability

Inter-rater reliability refers to the consistency of measurement results obtained by multiple raters and reflects the extent to which a measurement can be reliably reproduced. In this process, raters assess the same subjects, which is often referred to as a trial or replication (Gwet, 2021). In this study, the researchers involved lecturers who are experts in rhetorical move analysis as raters. Using 30% of the dataset, the inter-rater reliability score reached 92.84%, indicating a high level of agreement even higher than that reported by Kanoksilapatham (2005).

FINDINGS

This section intends to address the research questions: (1) How are the frequencies of rhetorical moves realized in linguistics research articles published in highly cited, reputable international journals? Furthermore, (2) what patterns can be identified in the arrangement of rhetorical moves in linguistics research articles from highly cited, reputable international journals? The analysis results of the rhetorical moves realized and patterns in

the introduction, method, and RDC in linguistic research articles from international journals that are highly cited.

Rhetorical moves

The findings regarding rhetorical moves in all parts of the article will be explained in each section, along with their occurrences and example sentences that illustrate moves with conventional status.

Introduction

The findings in the introduction show the occurrence of moves above 60% with conventional status, as seen in M1: Establishing a territory, M2: Establishing a niche (Step 1A: Indicating a gap), and M3: Presenting the present work (S1: Announcing present research descriptively and/or purposively). The results of the analysis on the other moves are presented in Figure 1.

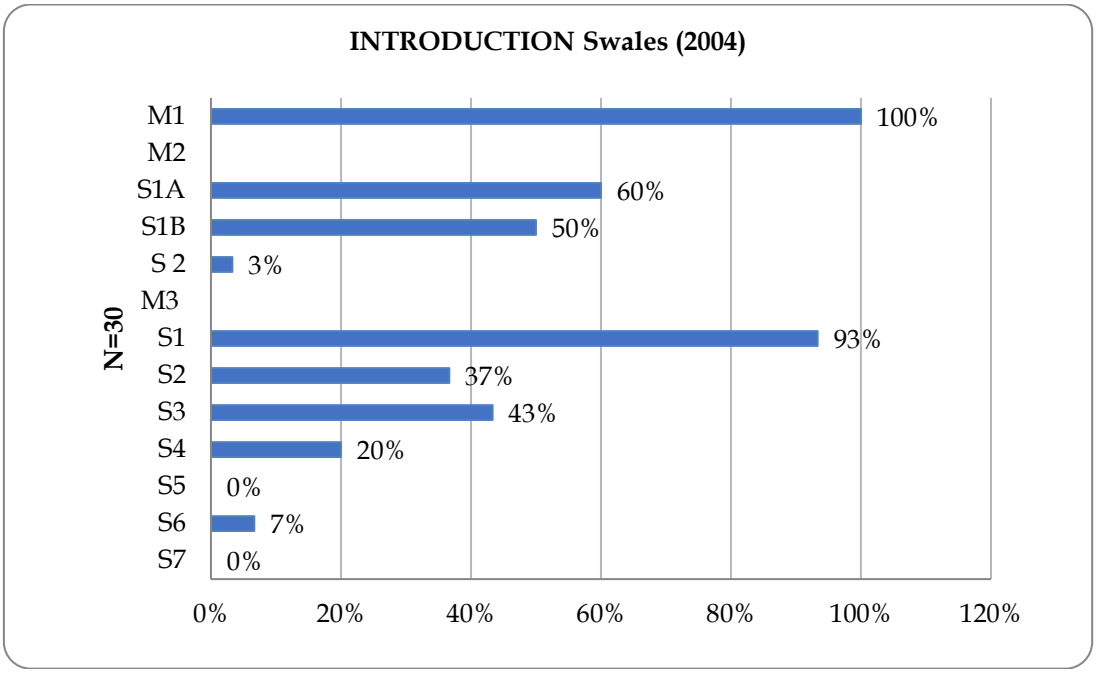

Figure 1. Occurrence moves rhetorical in introduction

Based on the figure above, M1: Establishing a territory has the highest occurrence, at 100%, which means that this move appears in all data. The following is an example sentence that illustrates M1, taken from article 8 in the appendix.

> *"The generality versus specificity of cognitive abilities, mechanisms, and structures has triggered lively debate throughout psychology's history, for*

> *example, it surrounds questions of general versus multiple intelligences…… Evidence for the distinction between verbal and visuospatial storage comes from numerous empirical dissociations in dual-task, neuropsychological, and neuroimaging studies (see Henson, 2001; Jonides et al., 1996; Logie, 1995)*".

In this step, writers introduce the broader research field and demonstrate its relevance by presenting general statements about current knowledge or ongoing debates. The paragraph begins with a broad topic, the tension between generality and specificity in cognitive abilities, highlighting its long-standing significance in psychological research. This introduces readers to the foundational issue being addressed. The paragraph then narrows its focus to a more specific topic: the empirical distinction between verbal and visuospatial storage systems. This shift from a general theoretical issue to a more defined subtopic reflects the "increasing specificity" that characterizes this step—moreover, the inclusion of multiple citations.

M2: Establishing a niche (Step 1A: Indicating a gap) occurs in 60% of the data. This finding shows that only Step 1A is considered a conventional step within M2. The following is an example sentence that illustrates M2S1A, taken from article 8 in the appendix.

> "*We see the diverse findings reviewed above as compelling evidence that WMC reflects primarily a domain-general, attentional construct that is important to a range of intellectual abilities. Our view thus conflicts with the findings discussed previously that suggest a strong dissociation between verbal and visuospatial WMC and reasoning (Daneman & Tardif, 1987; Friedman &Miyake, 2000; Handley et al., 2002; Morrell & Park, 1993; Shah & Miyake, 1996). However, we believe there are good reasons to be skeptical of the evidence for a strong domain specificity in WMC".*

In the given text, the authors clearly position their viewpoint in contrast to earlier findings, as seen in the statement*: "Our view thus conflicts with the findings discussed previously..."* This signals an explicit disagreement with studies that support a domain-specific interpretation of working memory capacity (WMC). Furthermore, by stating "we believe there are good reasons to be skeptical of the evidence for a strong domain specificity in WMC," the authors express doubt about the robustness or conclusiveness of those findings. This skepticism serves to expose a conceptual gap in the literature—namely, that the assumed dissociation between verbal and visuospatial WMC may not be as well-founded as previously thought. Additionally, the paragraph reinterprets existing evidence as supporting a domain-general, attentional construct of WMC, which further emphasizes the need for renewed investigation. In this way, the authors effectively establish a research

niche by challenging prevailing assumptions and setting the stage for introducing their own study in the next step.

M3: Presenting the present work (S1: Announcing present research descriptively and/or purposively), which is the second move with the highest occurrence at 93%, appears in 28 introductory sections in the data. The following is an example that illustrates M3S1. The phrase *"In this study, we examined…"* clearly signals that the authors are now shifting focus from prior literature to their own research. This is a defining feature of Move 3. The sentence *"Our goal was to clarify…"* directly states the purpose of the study. This makes the paragraph not only descriptive (explaining what the study involved) but also purposive (explaining why the study was done), fully satisfying the requirements of Step 1.

Method

In the methods section, the moves with conventional occurrences are found in M1: Contextualizing Study Methods (S5: Introducing the subjects/participants) and M2: Describing the Study (S1: Acquiring the data; S3: Describing experimental/study procedures). The overall results of the move occurrences are presented in Figure 2

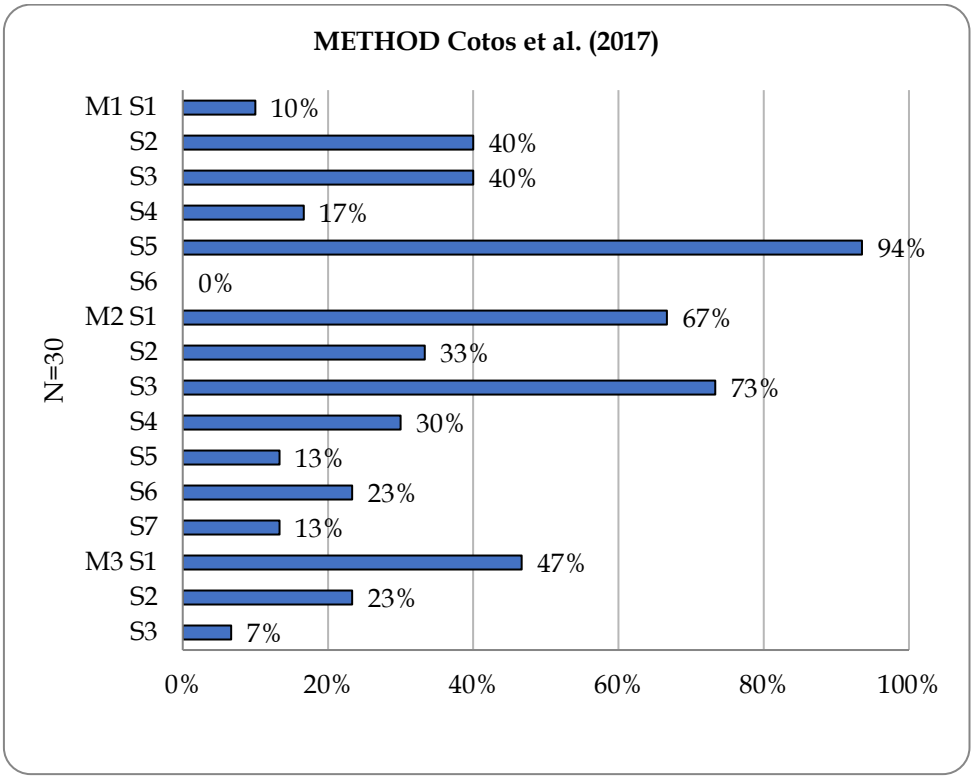

Figure 2. Occurrence moves rhetorical in method

Based on Figure 2, the occurrence of move-steps in the methods section varies greatly. However, the move-step with an occurrence above 60% is found in M1: Contextualizing Study Methods (S5: Introducing the subjects/participants), which shows 94%. The following example illustrates M1S5, taken from article 6 in the appendix.

> "*Subjects were 46 native Chinese or Korean speakers who learned English as a second language. Chinese and Korean were chosen as the native languages because of their typological dissimilarity to English. (For consideration of the effects of the first language on the second, see Discussion.) No differences were found in the results for the two language groups, so they will be presented together throughout the paper*".

The paragraph begins by specifying the participants: "*Subjects were 46 native Chinese or Korean speakers who learned English as a second language,"* clearly identifying the group being studied in terms of both linguistic background and second-language status. It then explains the rationale for selecting these groups, noting their "*typological dissimilarity to English,"* which establishes methodological relevance and justification. Furthermore, the note *("For consideration of the effects of the first language on the second, see Discussion") *demonstrates awareness of broader theoretical implications while staying within the scope of participant description. The final sentence addresses an important methodological detail by stating that "*no differences were found in the results for the two language groups,"* justifying why their data will be treated as a single group. Collectively, these elements fulfill the rhetorical function of introducing and contextualizing the study's participants in line with the expectations of Step 5 in Move 1.

M2: Describing the Study (S1: Acquiring the data) appears in 67% of the data. The following is an example that illustrates M2S1 taken from Article 27 in the appendix.

> *"After receiving a brochure describing the project, interested parents contacted us by phone, website, or reply card. Parents were then interviewed by phone about their child's language background, health history, and family history of language disorders. Qualifying families were invited to join the study if the child was not regularly exposed to a language other than English. Six additional participants were excluded from final analyses because the families could not attend the 24-month testing session or did not complete both language questionnaires*

The paragraph illustrates Step 1: Acquiring the data by describing how participants were recruited and screened. Interested parents contacted the

researchers after receiving a brochure. They were then interviewed by phone to gather information about the child's language background and health history. Only families whose children were not exposed to other languages were included. Some participants were excluded later because they missed sessions or did not complete the questionnaires. This reflects the initial stage of data collection in the study.

S3: Describing experimental/study procedures appears in 73% of the data and is mostly found in the methods section, serving as the final step in preparing the research article methods. The following example illustrates M2S3, taken from article 9 in the appendix.

> "*Tasks were individually administered by trained research assistants in the fall of the kindergarten through the third-grade years and in the spring of the fourth-grade year. Task order was randomized for each child, and the tasks were administered over three to four sessions within a 2-week interval to provide optimal performance on all tasks".*

The paragraph provides specific information about how the tasks were administered—individually by trained research assistants and specifies the time points of administration, from kindergarten through third grade in the fall, and again in the spring of fourth grade. The paragraph also describes how the procedure was structured, including the randomization of task order for each child and the scheduling of three to four sessions within a two week interval. This careful arrangement reflects a well-controlled and systematic study design. Moreover, the stated purpose of ensuring optimal performance on all tasks reinforces the procedural clarity and experimental rationale. Overall, the paragraph effectively fulfills the communicative function of Move 2 Step 3 by detailing how the study was conducted in practice.

RDC

This section represents the core of the research, presenting findings that address the research questions, followed by a discussion that interprets these findings, and concludes with a summary of the results. The results of the analysis indicate that the moves with conventional status are **M2: *Background information*** *(S2* Reporting background information with citations; S3 Providing background information without citations) M3 ***Summarizing or restating key result (S1*** Presenting results neutrally; S2 Contrasting with other results in the study and S3 Highlighting results) and M4: ***Commenting on key results or other features*** *(S1* Establishing the meaning of results; S2Comparing with previous research; and S3 Explaining results or discussing effects).

The occurrence of moves is presented in Figure 3.

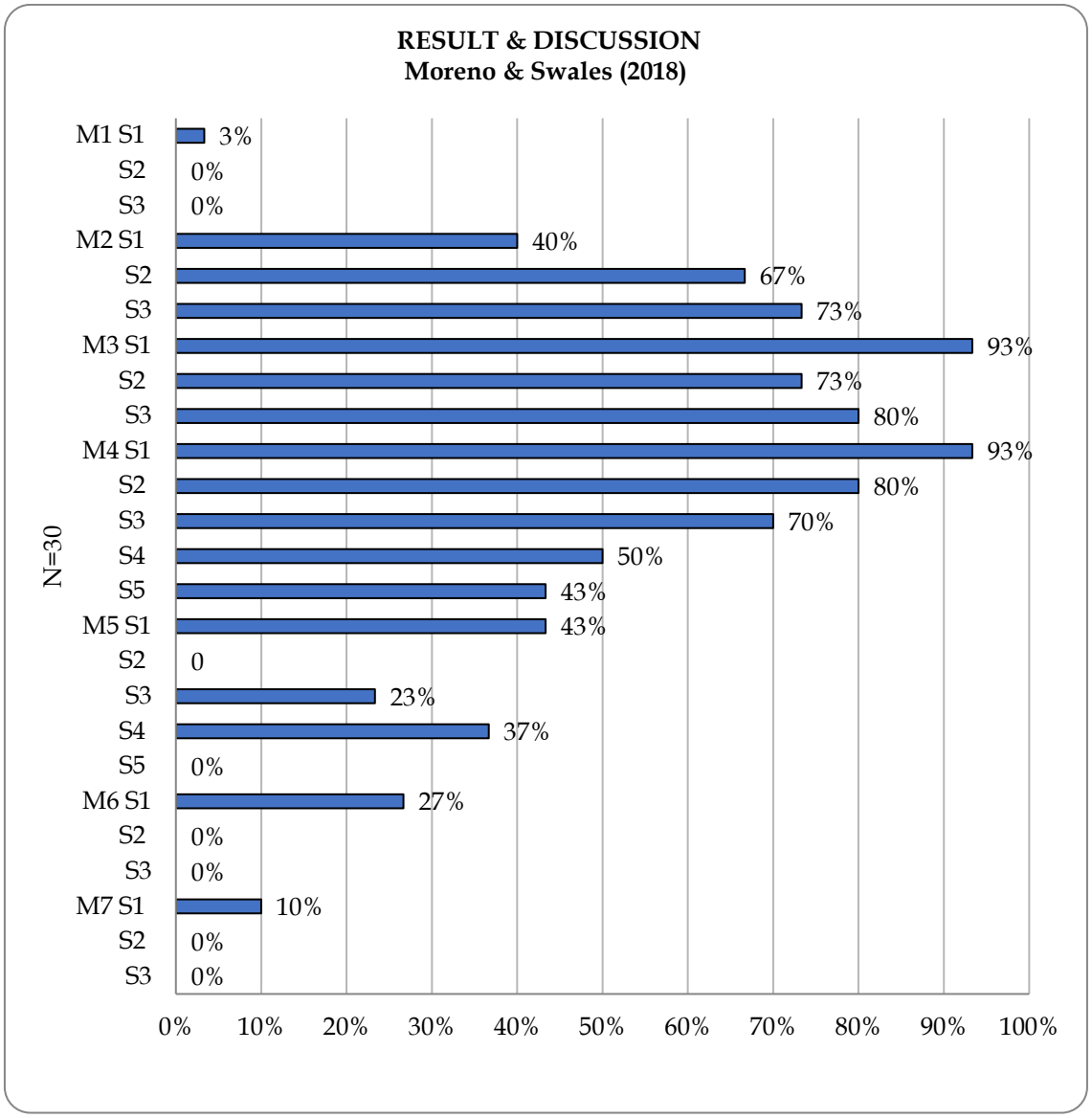

Figure 3. Occurrence moves rhetorical in RDC

M2: Background Information (S2: Reporting background information with citations) occurs in 67% of the RDC sections. The following is an example illustrating M2S2, taken from article 2 in the appendix.

> *"This comparison provides a replication test of previously reported findings using similar stimulus contrasts (Démonet et al., 1992; Zatorre et al., 1992; Binder et al., 1997), and allows the location of these regions to be compared with those associated with simple temporal processing (Tones–Noise) in the same subjects".*

Introduces prior studies (Démonet et al., 1992; Zatorre et al., 1992; Binder et al., 1997) to establish an empirical foundation for the comparison being made in the current research. By referring to these past works, the authors offer contextual grounding and reinforce the relevance of their replication test. The paragraph's dual function, highlighting both the continuity with prior findings and the methodological extension (comparing temporal processing in the same subjects), makes it a clear example of how background literature is used to position new research within an ongoing scientific dialogue. Thus, this paragraph performs the rhetorical role of S2 by reporting essential prior information to support and motivate the present study.

S3: Providing background information without citations shows the highest occurrence within M2 at 73%, compared to the other two steps. The following example illustrates M2S3, taken from Article 22 in the appendix.

> "*When attempting to identify boundaries with Monmonier's algorithm, the best results will be obtained with regularly spaced populations, where the area under investigation approximates a convex polygon. Irregularly spaced populations can lead to ambiguous results because barriers tend to fall between the most widely spaced populations, which under an IBD model are logically expected to be significantly different from one another*".

The paragraph is an example of Step 3: Providing background information without citations because it presents a technical explanation of how Monmonier's algorithm generally works, without referencing any specific sources. The writer explains the ideal conditions and limitations of the method, such as the importance of evenly spaced populations and a convex study area. This information helps readers understand the methodological background, but since it is provided without citations, it clearly fits this step.

M3: Summarizing or restating key results (S1: Presenting results neutrally) appears in 93% of the RDC sections. The following example illustrates M3S1, taken from article 4 in the appendix.

> "*Altogether 2,385,204 ratings were collected. Around 4 % of the data were removed due to missing responses, lack of variability in responses (i.e., providing the same rating for all words in the list), or the completion of fewer than 100 ratings per assignment. Further cleaning involved lists for which the correlation with the MRC ratings of the control words was between − .5 and .2. (The ones with correlations below − .5 were assumed to come from participants who misunderstood the instructions and used the opposite ordering; these scores were converted. This was the case for 149 assignments or 2.5 % of the total number.) Nonnative English speakers were also removed*".

The paragraph is an example of Move 3 Step 1: Presenting results neutrally, as it reports the data collection and cleaning process objectively without interpretation. The author states the total number of ratings collected (2,385,204), the percentage of data removed (approximately 4%), and the criteria used for exclusion, such as missing responses, lack of response variability, and incomplete assignments. Additional filtering based on low correlations with control word ratings is also described, along with the handling of negative correlations and the removal of non-native English speakers. All information is presented factually and descriptively, aligning with the primary function of this step to report research findings in a concise and unbiased manner.

S2: Contrasting with other results in the study appears in 73% of the data. The following example illustrates M3S2, taken from article 2 in the appendix.

> "*Collapsing over the two orders of the problems, 55% of the subjects solved the permission problem correctly, whereas only 30% of the same subjects solved the card problem correctly. This difference was significant when tested with a binomial test of symmetry @ = .Ol). The order of the four alternative choices had no significant effect on the frequency of solving a problem correctly. The frequency of successfully selecting the not-q case reflects the same pattern of performance as the frequency of solving the entire problem correctly".*

The paragraph exemplifies Move 3 Step 2: Contrasting with other results in the study by comparing two outcomes within the same experiment. It highlights that 55% of participants solved the permission problem correctly, while only 30% solved the card problem, with the difference confirmed by statistical testing. This direct contrast between findings clearly fulfills the rhetorical function of this move.

S3: Highlighting results occurs in 80% of the data. The following examples illustrate M3S3, taken from article 6 in the appendix.

> "*The findings obviously lead to the important question of what factors affect the variability in the strength of the relation between language ability and false-belief understanding. The analysis shows that this variability is not due to general demographic characteristics of the participants, such as their mean age or the male/female ratio in the sample".*

The paragraph is an example of Move 3 Step 3: Highlighting results, as it emphasizes the significance of the findings. The author points out that the

results raise an important question about what influences variability in the relationship between language ability and false belief understanding. By explicitly ruling out demographic factors, the paragraph highlights the meaningfulness and implications of the result, rather than merely reporting it, which is characteristic of this rhetorical step.

This move demonstrates that all its steps have conventional status, indicating that the RDC section in highly cited, reputable international journal articles in linguistics employs all the steps of M3: Summarizing or restating key results.

M4 Connecting on key results or other features (S1 Establishing the meaning of results) in 93%of the RDC sections. The following examples illustrate M4S1, taken from article (28) in the appendix.

> "*Conduction aphasics also were incapable of using syntactic algorithmic processes [see also Saffran & Mat-in (in press) and Scholes (in press)]. The question arises, therefore, as to whether syntactic operations also rely oncortical regions posterior to Broca's area or whether the conduction deficit should be considered within a disconnection framework, that is, as the severing of a connection to Broca's area (Geshwind, 1970). Given the impressive arguments offered by Geshwind, we are presently satisfied in treating it as a problem of disconnection, but a disconnection from an area that subserves sytactic processes.*"

The sentence illustrates M4S1 because the author connects the key result "*the inability of conduction aphasics to use syntactic processes*" to a relevant neurological theory. The author interprets this finding as a *disconnection* from the area responsible for syntactic processing.

S2 Comparing with previous research occurs in 80% of the data. The following examples illustrate M4S2, taken from article (28) in the appendix.

> "*With respect to neurolinguistic theories, the results are contrary to the view that Broca's aphasics have retained a normal tacit knowledge of their language. The present data together with the previously reported metalinguistic data (Zurif & Caramazza, 1975) suggest that, at least for the Broca's aphasics, brain damage affects a general language processing mechanism that subserves the syntactic component of both comprehension and production*"

The paragraph represents S2, comparing with previous research, because it contrasts the current findings with earlier views on Broca's aphasia and relates the present data to prior studies (e.g., Zurif & Caramazza, 1975) to highlight how this research extends or challenges previous interpretations.

S3 Explaining results or discussing effects occurs in 70% of the data. The following examples illustrate M4S3, taken from article (10) in the appendix.

> "*One might well wonder, at this point, whether these same ambiguities with the transitive and intransitive frames end up hampering rather than helping the verb learner. How is a child to know, when she hears a verb in a transitive frame, whether the action is to be interpreted as specifically causal or more generally 'acting-on'?*"

The paragraph belongs to S3 Explaining results or discussing effects because it questions and explores the possible impact of verb frame ambiguities on language learning, indicating a discussion of the findings' effects.

Patterns Structure in Journal Articles

This section addresses the second research question by describing the patterns found based on the occurrence of rhetorical moves. Each part is discussed in detail below.

Introduction

There are nine patterns in the preparation of the introduction section, each occurring with varying frequencies. The explanation of these patterns and their occurrences is presented in Table 5.

Table 5. Occurrence patterns in the introduction

No.	Patterns	F	%
1	[M1 M2 M3]	8/30	26,67%
2	[M1 M3]	8/30	26,67%
3	[M1 M2 M3 M2 M3]	5/30	16,67%
4	[M1 M3 M1 M3 M2 M3]	2/30	6,67%
5	[M1 M3 M2 M3]	2/30	6,67%
6	[M1 M3 M2]	2/30	6,67%
7	[M1 M2]	1/30	3,33%
8	[M1 M3 M1 M3]	1/30	3,33%
9	[M1 M3 M2 M3]	1/30	3,33%

Based on Table 5, the most frequently occurring patterns are M1-M2-M3 and M1-M3, each with a 23.33% occurrence. The M1-M2-M3 pattern indicates that all three moves are arranged sequentially in the introduction section, while the M1-M3 pattern omits M2 in the arrangement. These two patterns are referred to as linear and semi-linear move types, respectively.

Method

There are 12 patterns identified in the organization of the methods section. The complete list of patterns and their frequencies is presented in Table 6.

Table 6. Occurrence patterns in the method

No.	Patterns	F	%
1	[M1 M2 M1 M2]	8/30	23,33%
2	[M1 M2 M3]	4/30	13,33%
3	[M1 M2 M1]	4/30	13,33%
4	[M1 M2]	4/30	13,33%
5	[M1 M2 M3 M2 M3 M1]	2/30	6,67%
6	[M1 M2 M1 M2 M3]	3/30	10,00%
7	[M2 M1 M2 M3 M1 M2 M3 M1]	1/30	3,33%
8	[M1 M3]	1/30	3,33%
9	[M1 M2 M3 M1 M2]	1/30	3,33%
10	[M1 M2 M1 M3 M1 M2]	1/30	3,33%
11	[M2 M1 M3]	1/30	3,33%
12	[M1 M2 M3 M2 M3 M2 M1 M3]	1/30	3,33%

Based on Table 6, the most frequently found pattern is [M1 M2 M1 M2], occurring 23.33% of the time. This pattern shows repetition, a phenomenon known as the cyclical move**.**

RDC

There are 29 patterns identified in the organization of the RDC section, as it contains more points compared to other parts of the article. These patterns are presented in Table 7.

Table 7. Occurrence patterns in RDC

No.	Patterns	F	%
1	[M3 M4 M3 M4 M5]	2/30	6.67%
2	[M2 M3 M4 M5 M4]	1/30	3.33%
3	[M3 M5 M6 M5]	1/30	3.33%
4	[M3 M4 M3 M4]	1/30	3.33%
5	[M3 M4 M6 M4]	1/30	3.33%
6	[M3 M4 M2 M3 M4 M5]	1/30	3.33%
7	[M3 M4 M3 M4 M3 M2 M3]	1/30	3.33%
8	[M3 M4 M3 M2 M3 M6 M2]	1/30	3.33%
9	[M2 M3 M4 M3 M2 M4 M5]	1/30	3.33%
10	[M1 M3 M4 M3 M4 M2 M3 M4]	1/30	3.33%
11	[M2 M4 M2 M3 M4 M3 M2 M4]	1/30	3.33%
12	[M3 M2 M3 M4 M3 M2 M3 M4]	1/30	3.33%
13	[M3 M4 M2 M7 M5 M1 M2 M5 M4 M6]	1/30	3.33%
14	[M3 M2 M4 M7 M3 M4 M5 M6 M3 M5]	1/30	3.33%
15	[M2 M3 M4 M5 M6 M3 M4 M5 M3 M4]	1/30	3.33%
16	[M2 M3 M4 M3 M2 M4 M3 M5 M2 M3]	1/30	3.33%
17	[M3 M2 M3 M2 M3 M4 M6 M5 M4 M6]	1/30	3.33%
18	[M3 M2 M3 M4 M3 M2 M3 M5 M3 M4 M3]	1/30	3.33%

19	[M3 M4 M3 M4 M2 M3 M4 M5 M2 M4 M6]	1/30	3.33%
20	[M3 M4 M3 M4 M2 M4 M5 M2 M4 M3 M4]	1/30	3.33%
21	[M3 M4 M3 M4 M3 M2 M4 M3 M4 M2 M3 M4]	1/30	3.33%
22	[M2 M3 M4 M3 M2 M4 M3 M5 M6 M5 M3 M4]	1/30	3.33%
23	[M2 M3 M4 M3 M4 M2 M4 M3 M4 M2 M6 M3 M4]	1/30	3.33%
24	[M2 M3 M2 M3 M5 M4 M2 M7 M3 M4 M3 M5 M3]	1/30	3.33%
25	[M3 M4 M3 M2 M3 M2 M3 M4 M2 M3 M4 M5 M3 M4]	1/30	3.33%
26	[M3 M4 M3 M4 M3 M2 M4 M2 M5 M3 M4 M5 M6 M4]	1/30	3.33%
27	[M2 M3 M4 M3 M2 M3 M4 M1 M3 M4 M3 M5 M2 M3 M5]	1/30	3.33%
28	[M2 M1 M3 M1 M3 M4 M2 M3 M4 M2 M4 M3 M2 M3 M4]	1/30	3.33%
29	[M3 M4 M3 M4 M2 M3 M4 M3 M4 M2 M3 M4 M3 M5 M2 M3 M4]	1/30	3.33%

Based on Table 7, the pattern with the highest occurrence is [M3 M4 M3 M4 M5], appearing in only 6.67% of the data (two instances). This low frequency is influenced by the diverse organization of the RDC section, which varies according to the IMRD or IMRDC structure. The pattern found in the RDC section demonstrates a cyclical move type.

DISCUSSION

Based on the results of the analysis of rhetorical steps and patterns in highly cited, reputable international journal articles in linguistics, there are eight steps with conventional status. These include the introduction section with **M1: Establishing a territory (citation required) through generalization of increasingly specific topics; M2: Establishing a niche** (Step 1A: Showing gaps or); **and M3: Presenting current work** (S1 Announcing current research descriptively and/or purposively). This finding suggests that highly cited articles tend to follow a clear and consistent rhetorical structure, particularly in the introduction section, which may contribute to their academic impact. The use of these conventional steps indicates that successful authors often establish a broad research context, identify a specific gap, and then present their study as a direct response to that gap, thereby enhancing clarity, coherence, and persuasiveness for an international readership. Finding supports Swales' CARS model (2004), which is a widely recognized framework for analyzing rhetorical structure in introductions, as mentioned earlier. In addition, previous research by Alamri (2020), which employed move analysis in the introductions of two Saudi Arabian journal articles, showed a 100% occurrence of all three moves. Similarly, Wannaruk and Amnuai, (2016) in his study comparing two international journal corpora with a Thai corpus in the introduction section, reported frequencies of 96.66% for M1, 80% for M2, and 100% for M3.

In the methods section, the moves with conventional status are as follows **M1: Contextualizing Study Methods** (S5: Introducing the subjects/participants) and **M2: Describing the Study** (S1: Acquiring the data; S3: Describing experimental/study procedures). his finding supports the

results of Cotos et al. (2017), who state that in the field of Linguistics, the most frequently occurring move is M2, followed by M1 and then M3. These findings are presented in the move distribution table for the Applied Linguistics field of study, coded as APL (Cotos et al., 2017). Meanwhile, the RDC section contains three moves with conventional status, namely ***M2 Background information*** *(S2 Reporting background information with citations; S3 Providing background information without citations)* ***M3 Summarizing or restating key result*** *(S1 Presenting results neutrally, S2 Contrasting with other results in the study, S3 Highlighting results)* dan ***M4 Connecting on key results or other features*** *(S1 Establishing the meaning of results, S2 Comparing with previous research; S3 Explaining results or discussing effects).*

The findings on the steps in the RDC section show similar results despite using different frameworks. For instance, Wannaruk and Amnuai (2016) analyzed the steps in the Discussion of Results section by adapting the pattern proposed by Yang and Allison (2003), while Hashemi and Gohari Moghaddam (2019) examined the steps in the Discussion section in the field of Applied Linguistics using the framework of Lin and Evans (2012). Both studies revealed steps with conventional status, consistent with the findings of the present study.

The arrangement of patterns based on the occurrence of moves in this study varies considerably. In the introduction section, two frequently appearing patterns were identified: the M1 M2 M3 pattern consisting of Move 1: Establishing a territory (citations required), Move 2: Establishing a niche (citations possible), and Move 3: Presenting the present work and the [M1] [M3] pattern consisting of Move 1: Establishing a territory (citations required) and Move 3: Presenting the present work. Both of these patterns are classified as types of linear patterns, which are characterized by clear and regular sequences of moves. However, the [M1 M3] pattern is considered a development of linear moves or interpreted as a semi-linear move, as it consists of a move sequence that includes fewer than the specified rhetorical moves (Canet et al.., 2016).

The most frequently occurring pattern in the methods section is [M1 M2 M1 M2], consisting of [M1: Contextualizing Study Methods] and [M2: Describing the Study]. This pattern is categorized as cyclical, meaning it consists of a sequence of moves that repeat. Based on the author's interpretation of the analysis, this repetition is influenced by the writer's need to develop and articulate ideas in order to fulfill the communicative purpose of the section. A similar finding is reported in the study by Nasirizadeh et al. (2022), who, using Swales's (1990) framework, analyzed forestry research articles and identified two obligatory moves in the methods section: Move 4: Describing materials and Move 5: Describing experimental procedures. The

most frequently occurring pattern in the methods section also corresponds to these two moves, namely [M4 M5], with a frequency of 97.5%.

The RDC pattern is the most frequently identified in this study. In addition to being the core section of the research, this part is structured according to either the IMRD or IMRDC format, depending on the journal's template. One pattern found in two journal articles is [M3 M4 M3 M4 M5], which includes Move 3: Summarizing or restating key results, Move 4: Commenting on key results or other features, and Move 5: Evaluating the current study or other research or practice. The pattern found in the Results, Discussion, and Conclusion sections in this study is classified as a rhetorical move of the cyclical type because these sections need to develop and articulate ideas in order to fulfill the communicative purpose of the section, resulting in repetition in each composition, which refers to the framework of Moreno and Swales (2018).

This cyclical structure was also found in the study by Asari and Kurnia (2018), who analyzed the rhetorical structure of the Results, Discussion, and Conclusion sections in English language teaching research articles using Swales' (1990) CARS model. They identified a recurring or cyclical pattern in the form of [M2 M5 M4 M7], which includes Move 2: Statement of Research Results, Move5: Explanation, Move5: Reference to Previous Research, and Move 7: Deduction and Hypothesis.

Based on the discussion above, this finding addresses the issue outlined in the background, specifically the rhetorical challenge of articulating ideas clearly and coherently during the article preparation process. This challenge is evident even in highly cited articles published in reputable journals, as effective scholarly writing often requires iterative development and refinement of ideas to meet the communicative purposes of each section. The eight moves with conventional status identified in this study are commonly found in highly cited, reputable international journal articles. As such, they offer a valuable reference for novice writers in structuring their articles based on these findings. Based on the findings of this study, using various analytical frameworks, moves that appear with a frequency above 60% are considered to have conventional status. These are presented in Table 8.

Table 8. Rhetorical moves in highly cited Linguistics research articles

	INTRODUCTION
M1	***Establishing a territory (citations required) via topic generalizations of increasing specificity***
S1	*Topic generalizations of increasing specificity*
M2	***Establishing a niche***
S1	*Indicating a gap or*
M3	***Presenting the present work (citations possible***

S1	*Announcing present research descriptively and/or*
	METHOD
M4	***Contextualizing Study Methods***
S1	*Introducing the subjects*
M5	***Describing the study***
S1	*Acquiring the data*
S2	*Describing experimental/study procedures*
	RESULTS, DISCUSSION AND CONCLUSION
M6	***Background information***
S1	*Reporting background information with citations*
S2	*Providing background information without citations*
M7	***Summarizing or restating key results***
S1	*Presenting results neutrally*
S2	*Contrasting with other results in the study*
S3	*Highlighting results*
M8	***Commenting on key results or other features***
S1	*Establishing the meaning of results*
S2	*Comparing with previous research*
S3	*Explaining results or discussing effects*

CONCLUSION

The findings reveal eight moves with conventional status: three in the introduction, two in the methods section, and three in the Results-Discussion-Conclusion (RDC) section. This classification is based on their occurrence rates exceeding 60%. The patterns identified are highly diverse, with nine patterns in the introduction, two frequently appearing patterns were identified: the [M1 M2 M3] pattern consisting of Move 1: Establishing a territory (citations required), Move 2: Establishing a niche (citations possible), and Move 3: Presenting the present work and the [M1] [M3] pattern consisting of Move 1: Establishing a territory (citations required) and Move 3: Presenting the present work. 12 in the methods section, the pattern with the highest occurrence is [M1 M2 M1 M2], consisting of [M1: Contextualizing Study Methods] and [M2: Describing the Study] and 29 in the RDC section, one pattern found in two journal articles is [M3 M4 M3 M4 M5], which includes Move 3: Summarizing or restating key results, Move 4: Commenting on key results or other features, and Move 5: Evaluating the current study or other research or practice

These findings contribute to the analysis of rhetorical moves by offering insights into the stages involved in composing highly cited and reputable international journal articles in the field of linguistics. However, this study is limited to a specific set of highly cited articles within a single discipline and does not account for variations across other fields or less cited publications. Future research may expand this investigation by incorporating a broader range of disciplines, comparing highly and less cited articles, and examining additional rhetorical and linguistic features such as author stance,

engagement markers, and intertextual strategies that influence citation impact and rhetorical effectiveness.

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APPENDIX

Articles	Highly Cited	References
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