

A Study on the Persuasive Functions of Interactional Metadiscourse in TED Talks

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ABSTRACT

Public speaking requires not only clear information delivery but also building an interactive relationship with listeners to achieve persuasion. Combining Hyland's interactional metadiscourse model and Aristotle's rhetoric, this study examines the usage and persuasive function of stance and engagement markers in environmental TED Talks (2020-2024). Quantitative and qualitative analysis of 20 transcripts shows that speakers use stance markers to establish authority, while strategically employ engagement markers to foster connection with listeners. The analysis demonstrates how these markers achieve ethical, emotional, and rational appeals. The findings elucidate the relationship between interactional metadiscourse and persuasive effectiveness, providing guidance for speakers on how to enhance persuasiveness.

KEYWORDS

Interactional metadiscourse; TED talks; Persuasive function

1 Introduction

Metadiscourse, defined as linguistic resources for organizing discourse, engaging readers, and expressing stance (Hyland, 2005), is crucial for achieving persuasive goals. Within the taxonomies of metadiscourse, interactional metadiscourse is particularly significant. It manages speaker-audience interaction and structures coherence, and conveys interpersonal attitudes (Conley, 1983). Crucially, this interaction inherently fulfill a rhetorical function, facilitating the transmission of viewpoints and the construction of persuasive appeals.

Environmental protection is fundamental to human survival and sustainable development (Harris, 1959). Thus, it requires sophisticated rhetorical strategies for communicating complex challenges and mobilizing public action. Public speaking on such high-stakes themes is thus a critical domain for examining persuasion. However, while research on interactional metadiscourse is well-established in academic contexts, its role and persuasive function in public speaking, particularly within thematically focused environmental advocacy speeches, remain significantly under-explored.

TED Talks are a highly influential platform for disseminating ideas. Their environmentally themed presentations translate scientific knowledge into accessible narratives to mobilize action. To address the identified gap, this study analyzes 20 environmental TED Talks. Employing Hyland's (2005) framework and Aristotle's model of rhetorical persuasion, it investigates how interactional metadiscourse serve persuasive function within this specific genre of environmental advocacy.

2 Literature review

2.1 Interactional metadiscourse

Since Harris first proposed the concept of metadiscourse, it has gained significant attention in applied linguistics. Hyland further developed the concept of interactional metadiscourse. Hyland & Tse (2004) categorized metadiscourse into two primary types: interactive and interactional. Interactive metadiscourse refers to the author's organization of the text to guide reader comprehension. Interactional metadiscourse involves the author expressing stance and evaluation to engage the reader in discourse interaction. Hyland subdivided interactional metadiscourse into stance markers and engagement markers. This classification has become the dominant framework for analyzing interactional metadiscourse in discourse. Stance markers include hedges, boosters, attitude markers, and self-mentions, collectively reflecting the author's viewpoints and attitudes. Engagement markers encompass reader pronouns, directives, shared knowledge, questions, and personal asides, aiming to achieve effective interaction with the reader. Given the oral nature of public speaking, this study adopts the analytical framework proposed by Qiu and Jiang (2021), as illustrated in Figure 1.

2.2 Rhetorical theory

Aristotle's Rhetoric systematically analyzed persuasion, defining rhetoric as the faculty of observing in any given case the available means of persuasion (Liu, 2023). Central to this are three primary means of persuasion: ethos (speakers'

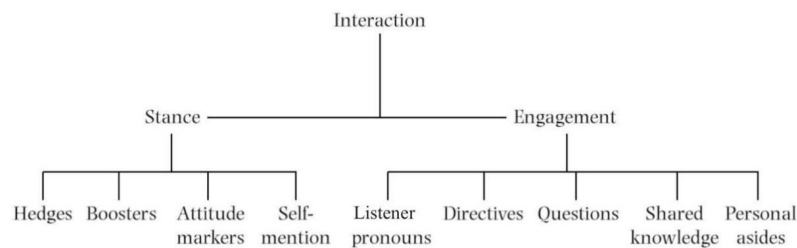


Figure 1 Research framework (Qiu & Jiang, 2021)

credibility), pathos (appeals to listeners' s emotions), and logos (appeals based on reason and logic)(Lin & Jiang, 2021).

In persuasive oratory like TED Talks, speakers strategically deploy linguistic resources, including interactional metadiscourse, to construct these appeals. Specifically, interactional metadiscourse serves as a key mechanism for building ethos, evoking pathos, and foregrounding logos, thereby enhancing overall persuasiveness and facilitates co-construction of meaning between speakers and listeners.

3 Research design

This study investigates the persuasive function of stance and engagement markers in environmentally themed TED Talks. We employ Qiu and Jiang's (2021) framework of interactional metadiscourse (adapted from Hyland) within the theoretical perspective of Aristotelian rhetoric. The research addresses the following questions:

RQ1: What are the frequency and distribution patterns of stance markers and engagement markers in environmentally themed TED Talks?

RQ2: How do stance markers and engagement markers mediate appeals to ethos, logos and pathos among listeners?

3.1 Corpus

The corpus comprises 20 environmental TED Talks. (2020-2024). Transcripts were downloaded and compiled. Transcript errors were manually corrected to ensure data accuracy. Talks range from 9 to 14 minutes. Basic corpus information is presented in Table 1.

Table 1 Basic Information of the TED Talk Corpus

	Number	Total Tokens	Word Types	Average length
TED talk corpus	20	31123	4498	1556.2

3.2 Methodology

A mixed-methods approach combining quantitative and qualitative analysis was employed, following these key stages:

(1) Annotation and Classification: All instances of stance and engagement markers were manually identified and classified. Inter-coder reliability was ensured through independent annotation of a 30% random subset by a second trained annotator, achieving a Cohen's Kappa coefficient of 0.9. Discrepancies were resolved via discussion.

(2) Quantitative Analysis: The annotated corpus was processed quantitatively using AntConc 4.2.4 to analyze the frequency and distribution patterns across interactional metadiscourse category and sub-categories.

(3) Qualitative Rhetorical Analysis: Leveraging these quantitative findings, a qualitative rhetorical discourse analysis was conducted. This analysis explicitly applies Aristotle's concept of ethos, pathos, and logos to examine how the identified markers functioned persuasively within their discursive contexts. The aim was to elucidate the specific linguistic strategies that contribute to building speakers' credibility, engaging listeners' emotions and structuring logical arguments for environmental advocacy.

4 Research results and discussion

4.1 Frequency and distribution of interactional metadiscourse in environmentally themed TED talks

Statistical results (Table 2) show significantly higher frequency of stance markers than engagement markers. This predominance indicates speakers prioritize constructing authoritative stance and clear positions as foundational a persuasive strategy in environmental TED Talks.

Table 2 Overall Distribution of stance markers and engagement markers

Interactional Metadiscourse	Raw Frequency	Normalized Frequency (per 1000 words)	Percentage
stance markers	2398	77.0	56.8%
engagement markers	1825	58.6	43.2%
Total	4223	135.7	100%

4.1.1 Distribution of stance marker subcategories

Analysis of stance markers (Table3) shows that self-mentions occur with the highest frequency, followed by hedges, attitude markers, and boosters exhibiting the lowest frequency. The high incidence of self-mentions reflects speakers' active construction of an expert identity and a sense of shared responsibility.

Table 3 Distribution of Stance Markers

Stance markers	Raw Frequency	Normalized Frequency (per 1000 words)
Self-Mentions	1612	51.8
Hedges	303	9.7
Attitude Markers	261	8.4
Boosters	222	7.1
Total	2398	77.0

4.1.2 Distribution of engagement marker subcategories

Among engagement markers (Table 4), listener pronouns are the most frequent device, followed by directives, and questions. Shared knowledge and personal aside occur least frequently. The prevalence of listener pronouns indicates strategic effort to directly involve the listeners, fostering a connection and shared concern.

Table 4 Distribution of engagement markers

Engagement Markers	Raw Frequency	Frequency (per 1000words)
Listener Pronouns	1269	40.8
Directives	424	13.6
Questions	100	3.2
Shared Knowledge	24	0.8
Personal Asides	8	0.3
Total	1825	58.6

Through detailed analysis, we find that among all nine subcategories of interactional metadiscourse, self-mentions and listener pronouns exhibit the highest frequencies, at 51.8 and 40.8 per 1000 words respectively. This highlights the central role of strategies aimed at establishing speakers' identity and credibility and fostering direct listeners engagement within environmentally themed TED Talks. This quantitative pattern provides a crucial foundation for the subsequent qualitative examination of how these and other markers function to realize appeals to ethos, pathos, and logos in specific discursive contexts.

4.2 Persuasive functions of interactional metadiscourse in environmentally themed TED talks

Following the detailed analysis of the frequency and distribution of interactional metadiscourse, this section explores their persuasive function in selected TED Talks. As effective rhetorical strategies, interactional metadiscourse fulfill their persuasive purpose through three appeals: ethical appeal, emotional appeal, and rational appeal. Corpus analysis of environmentally themed TED Talks reveals that by strategically using interactional metadiscourse, speakers construct a sincere and prudent persona and evoke listeners' emotional resonance. Furthermore, these markers optimize speech structure for logical coherence and persuasiveness, thereby maximizing persuasive impact.

4.2.1 Ethical appeal

Ethical appeal pertains to speakers' character, authority, and credibility. On the TED platform, listeners' trust relies solely on the speech itself rather than on prior knowledge of the speaker's background. Consequently, the strategic deployment of interactional metadiscourse by speakers, particularly for crafting their persona and establishing listeners' trust, is critically important.

(1) Boosters

Boosters strengthen assertions and highlight the significance of viewpoints. In environmentally themed TED Talks, their use signals the speakers' firm conviction, amplifying content persuasiveness and fostering listeners alignment.

Example 1: Plastics and their chemical additives are really a climate problem.

In Example 1, the booster “really” intensifies the assertion that plastics constitute a climate problem. This conveys the speaker’s viewpoint and serious stance on the climate issue, thereby enhancing the speech’s persuasiveness. The booster emphasizes and confirms the claim, allowing the listeners to perceive the speaker’s concern and urgency. This, in turn, facilitates greater acceptance of the perspective and significantly contributes to building the speaker’s credibility by projecting conviction and commitment.

(2) Hedges

Hedges indicate speakers’ cautious stance towards the propositional content and respect for potential divergent viewpoints. In TED Talks, their use helps project prudence and responsibility, thereby enhancing the credibility of their statements and achieving greater persuasive impact. For example:

Example 2: Well, the good news is every day the Earth receives 163,000 terawatts of energy from the sun. About half of that bounces back to space, but about 80,000 terawatts arrive at the Earth in a form we can use.

In Example 2, the hedge “about” conveys an approximation of the solar radiation energy data. This reflects the speaker’s cautious attitude towards data precision and respect for listeners’ comprehension. Consequently, it enhances the credibility and persuasiveness of the content. The hedge signals the speaker’s prudence in handling complex scientific data while offering the listeners a more accessible information reception.

4.2.2 Emotional appeal

Emotional appeal pertains to listeners’ affective state. Speakers achieve their persuasive aims by evoking emotional responses from their listeners. In environmentally themed TED Talks, speakers strategically deploy interactional metadiscourse to evoke emotions, thereby fostering emotional resonance and alignment. Through these strategies, speakers not only convey information but also establish an emotional connection with the listeners. Thereby, it makes listeners feel that the speaker stands with them both rationally and emotionally. Such resonance is key to persuading listeners to accept the viewpoint.

(1) Listener pronouns

Listener Pronouns serve as an effective interactional metadiscourse strategy. By directly addressing listeners, they make listeners feel included as part of the discourse, thereby bridging the distance between speakers and listeners. For example:

Example 3: If we are to prevent a global disaster, we need to do two things. As we know, we need to reduce emissions of greenhouse gases to almost zero. In Example 3, the repeated use of “we” inclusively encompasses both listeners and the speaker. This usage fosters a sense of collective responsibility, making listeners feel they jointly confront the problem and seek solutions with the speaker, heightening listeners’ sense of participation and urgency. Consequently, listeners become more receptive to the viewpoint and more inclined to take action.

(2) Attitude markers

Attitude markers express speakers’ personal feelings and stances, allowing them to directly and explicitly convey their position. Attitude markers can influence listeners’ attitudes, prompting them to adopt emotional stances aligned with those of the speaker. For example:

Example 4: Should countries trust each other? And one of the most surprising things I think I’ve learned from this project is that I think the answer is yes. In Example 4, the attitude marker “surprising” expresses personal astonishment at the findings. This direct expression of emotion conveys the speaker’s deep topic engagement and suggests the finding may contradict listeners’ expectations, thereby stimulating their curiosity and interest. By sharing personal feelings and discoveries, the speaker invites listeners into their thought process, establishing an emotional connection that significantly enhances persuasiveness.

4.2.3 Rational appeal

Rational appeal is a crucial persuasive strategy in public speaking, relying on logically rigorous arguments, compelling evidence, sound conclusions, and effective reasoning. In environmentally themed TED Talks, the strategic deployment of interactional metadiscourse enhances the speech’s logical coherence and aids listeners in better understanding and accepting the viewpoint. Achieving rational appeal not only depends on the logical soundness of the content but also involves the systematic organization and coherence of the discourse structure. Through meticulously crafted discourse, speakers transform logical arguments into listeners’ identification, so as to achieve effective persuasion.

(1) Self-mentions

Self-mentions are strategies where speakers directly articulate their viewpoints, enhancing the credibility of the discourse by showcasing expertise and experience, thus strengthening the persuasiveness of logical argumentation. For example:

Example 5: We need to end global poverty. And here, I’m not talking about raising everyone above a two-dollar-a-day

poverty line. That is simply not good enough. In Example 5, the speaker clarifies that ending global poverty extends beyond the basic poverty line standard. Through the use of the self-mention “I’m not talking about”, the speaker precisely defines the scope of discussion and preempts potential misunderstandings. This bolsters the speech’s logical structure and demonstrates the speaker’s in-depth understanding of the issue, consequently increasing the speech’s persuasiveness.

(2) Questions

Questions serve as tools for speakers to guide listeners’ thinking and engage them in the speech. In TED Talks, rhetorical questions stimulate curiosity and lead listeners to follow the speaker’s logical path. For example:

Example 6: How do we do that? How do we become the First Generation? First, our low-carbon technologies need to become the default. In Example 6, the sequential questions prompt reflection, followed immediately by answers. This strategy not only engage listeners cognitively but also allows the speaker to present logical reasoning. By constructing a rigorous and engaging argument, the speaker effectively guides listeners to accept his or her viewpoint. Questions here act as transitional devices, summarizing preceding points and paving the way for subsequent arguments. This contributes significantly to making the speech more coherent and persuasive.

5 Conclusion

This study systematically analyzes interactional metadiscourse in environmental TED Talks, revealing its distribution and rhetorical mechanisms. Speakers heavily rely on stance markers to establish their authority and position, and strategically employ engagement markers to cultivate collective agency and responsibility. Detailed discourse analysis demonstrates how metadiscourse work synergistically to achieve persuasion through ethos, pathos, and logos. For instance, self-mentions bolster logos in argumentation while potentially enhancing ethos and pathos. We build community and logically necessitates collective action.

The findings offer concrete implications for environmental protection communication: speakers should strategically combine metadiscourse, such as using self-mentions for credible expertise, inclusive pronouns for listeners’ engagement and empathy, hedges for data rigor, boosters for emphasis, and questions to guide reasoning. This conscious orchestration enhances persuasive efficacy and action-oriented engagement. Limitations include the exclusive focus on environmental themes and the relatively small corpus size. Future research could explore diverse TED themes and conduct diachronic studies.

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References

- [1] Conley, M. (1983). *Interpersonal Communication*. Urbana-Champaign: University of Illinois Press.
- [2] Harris, Z. (1959). *Linguistics Transformations for Information Retrieval*. Berlin: Springer Netherlands.
- [3] Hyland, K. (2005). *Metadiscourse*. London: Continuum.
- [4] Hyland, K. & P. Tse. Metadiscourse in academic writing: A reappraisal. [J]. *Applied Linguistics*, 2004, 25 (2), 156-177.
- [5] Qiu Xuyan & Jiang Feng. Stance and engagement in 3 MT presentations: How students communicate disciplinary knowledge to a wide listeners. [J]. *Journal of English for Academic Purposes*, 2021, 51, 100976.
- [6] Aristotle. H. Lawson-Tancred (trans.). (1991) *The Art of Rhetoric*. London: Penguin Books.
- [7] Yan, W. J., & Han, J. Value Demands and Path Selection of Ecological Civilization Education in Colleges and Universities in the New Era. [J]. *Journal of School Party Building and Ideological Education*, 2023, 07, 91-93.
- [8] Liu, L. D., & Liu, M. T. Interactional metadiscourse and science popularization speeches: persuasion and rhetoric in the context of contextual reset. [J]. *Foreign Language Research*, 2023, 02, 42-47.
- [9] Lin, M. X., & Jiang, H. A study on metadiscourse in TED Talks from the perspective of Aristotelian rhetoric. [J]. *Language Education*, 2021, 03, 53-59.
- [10] Cui, X. L., & Zhao, X. Rhetorical studies in the context of AI large language models. [J]. *Contemporary Rhetoric*, 2024, 03, 24-36.