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An Analysis of Grammatical Cohesion in TED Speech Texts: A Case Study of Teach Girls Bravery, Not Perfection

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Abstract: Based on the cohesion theory of Halliday and Hasan, this study analyzed the application of cohesion devices and explored the significant characteristics of their frequency and distribution in a TED speech "Teach girls bravery, not perfection". Through quantitative and qualitative analysis, it is found that reference is the most frequently used grammatically cohesive device, mainly due to the high frequency of personal reference in the whole speech text, which refers to both the speaker and the audience. And in the subcategory of conjunctions, additive conjunctions are the most frequently used, and the simplest form "and", is used to add some new information and promote the development of the speech content. Finally, substitution and omission were used in a limited way.

Keywords: TED speech; Cohesion theory; Grammatical cohesive device; Frequency and distribution

1. Introduction

Many scholars have conducted in-depth studies on TED Talks from different academic perspectives. Wang Wei (2021) explored the register features of English TED Talks from a linguistic perspective and revealed the uniqueness and diversity of the language use. Meanwhile, Jiang Hui (2020) studied the types and pragmatic functions of audience meta-discourse in TED Talks based on meta-pragmatic theory, uncovering the meta-pragmatic awareness reflected. Despite the remarkable achievements of TED Talks in disseminating valuable insights, research on the coherence features of them from the perspective of cohesion is still insufficient.

Therefore, this study takes the TED Talk "Teach Girls Bravery, Not Perfection" as the research object. Based on Halliday and Hasan's cohesion theory, it analyzes the application of cohesive devices and explores their significant features in frequency and distribution. Through quantitative and qualitative analyses, the study aims to address the following questions: 1) What types of grammatically cohesive devices are employed in this speech text? 2) What are the significant features of these cohesive devices in terms of frequency and distribution?

2. Overview of Cohesion Theory

Halliday and Hasan(1976) introduced the cohesion theory in *Cohesion in English*, and the term "tie" to refer to a specific instance of cohesion, namely, the occurrence of two elements that are interrelated. IA text refers to the actual use of language units, a linguistic whole constituted by a series of continuous segments or sentences in the communication process (Zhu Lili, 2016).The book elaborates on different types of "ties": grammatical cohesion is established through grammatical structures, specifically including reference, substitution, ellipsis, and conjunction.

3. Analysis of Grammatical Cohesion in *Teach girls bravery not perfection*

3.1 Reference Analysis

Reference plays a crucial role in textual cohesion and there are three types of reference: personal reference, demonstrative reference, and comparative reference.

Table 3.1 Frequency and distribution of reference

Type of reference	Number	percentage
Personal reference	205	77%
Demonstrative reference	54	20%
Comparative reference	7	3%
Total	266	100%

Table 3.1 shows that personal references are the most frequently employed, accounting for a total of 205 occurrences and comprising 77% of all references. In contrast, comparative references are used the least frequently, with only 7 occurrences and a mere 3% share. De-

monstrative references total 54 occurrences and accounting for 20% of the references. TED speakers rely heavily on personal references to establish a personal connection with the audience, while still utilizing demonstrative references to point out specific concepts or ideas. The relatively low frequency of comparative references indicates that TED speakers tend to avoid using comparisons in their speeches, focusing instead on directly communicating their ideas and messages.

Example 1: *We cannot wait for **them** to learn how to be brave like **I** did when **I** was 33 years old. **We** have to teach **them** to be brave in schools and early in **their** careers...*

From the example 1, the high frequency of personal references can be primarily attributed to the prevalent use of the first and third persons, such as "I/We/our/they/them," which are employed to refer to the speaker and the female community, resonating with a broader audience of girls or women. Specifically, the use of "we," "they," and "our" helps establish a close relationship between the speaker and the female listeners, as they share a common ground and similarities. These pronouns thread through the entire speech text, contributing to its coherence and ease of understanding.

Example 2: *...But on election day, **the** polls were right, and I only got 19 percent of the vote, and **the** same papers...*

The first "the" and the subsequent "poll" refer to the "congressional election vote" that was just mentioned in the previous sentence. Here, "the" indicates recognizability and provides textual cohesion. This is an example of an anaphoric reference. The usage of the second "the" is similar, where "paper" refers to the newly established "New York Daily News," which has already been mentioned in the previous sentence.

Example 3: *...Bright boys, **on the other hand**, found the difficult material to be a challenge.*

"On the other hand" refers to a comparison between boys and girls. In the preceding context, we can observe that girls tend to give up quickly. "On the other hand" then introduces the specific behavior of boys when faced with difficult material, creating a cohesion that contributes to the coherence of the TED speech.

3.2 Analysis of Substitution and Ellipsis

Substitution involves "the replacement of one item by another" while ellipsis refers to "the omission of an item" (Halliday, Hasan, 1976).

Table 3.2 The frequency of the substitution and the ellipsis

Cohesive device	number	Percentage
Substitution	1 (verbal)	100%
Ellipsis	0	0
Total	1	100%

In this TED speech, substitution occurs only once, and ellipsis is not utilized. The low frequency of substitution is attributed to the relatively formal nature of TED speeches. In public speaking, excessive substitution can lead to an inappropriate level of informality. Generally, most speeches are delivered in a formal style, with speakers being mindful of their language use to ensure that the audience can understand the content more clearly and easily.

Example 4: *...We cannot wait for them to learn how to be brave like **I did** when I was 33 years old...*

The verb substitute "did" is a full verb that replaces the verb phrase "ran for Congress" in the previous sentence. Through this verbal substitution, a cohesive link is formed.

3.3 Analysis of Conjunction

Table 3.3 The frequency and distribution of conjunction

Conjunction	Number	Percentage
Additive conjunction	45	64%
Causal conjunction	14	20%
Adversative conjunction	10	14%
Temporal conjunction	2	2%
Total	70	100%

The results indicate that coordinating conjunctions are used most frequently, accounting for a total of 45 occurrences and comprising 64% of all conjunctions. TED speakers employ the simplest form "and" to add new content and facilitate the progression of their speeches. Following closely are causal conjunctions, accounting for 20%. In TED speeches, the common and simple causal conjunctions "so" and "because" are used to express logical relationships such as reasons, purposes, or results. Adversative conjunctions, accounting for 14%, with the simple and frequently encountered contrastive form "but" being regularly utilized. Compared to other subtypes, temporal conjunctions are used the least frequently, accounting for only 2%, with limited occurrences of the words "since" and "then."

Example 5: ...*And so I need each of you to tell every young woman you know... because when we teach girls to be imperfect, and we help them leverage it...*

"So" and "because" express simple causal relationships here. "So" implies "because of this" or "due to this," referring to what was mentioned previously, and then the speaker conducted that experiment. The use of this simple causal conjunction creates a cohesive relationship. "Because" here represents the reverse form of the causal relationship, where the preceding sentence expresses the reason. This is also a form of cohesion between sentences.

Example 6: ...*Boys, on the other hand, are taught to play rough, swing high, crawl to the top of the monkey bars and just jump off headfirst.... but I, I worry about our bravery deficit....*

The basic meaning of adversative relationship is "contrary to expectations," thus, the last "but" appears in the sense of contrast. More specifically, the meaning here contrasts with "worrying about our federal deficit" and instead suggests that we should "worry about the bravery deficit among girls." This clarifies the logical relationship between the two sentences, making the speech easier to understand.

3.4 Summary of Cohesive Device

Table 3.4 The frequency and distribution of cohesive devices

Grammatical cohesion	Number		Percentage
Reference	266	79%	
Substitution; ellipsis	1	1%	
conjunction	70	16%	
Total	337	20%	

Table 3.4 reveals that reference has the highest usage frequency, accounting for 79%, followed by conjunction, 16%. Simultaneously, it is also evident that substitution and ellipsis have the lowest frequencies, comprising only 1% in total.

4. Conclusion

In the TED speech, grammatical cohesive devices are employed, and they exhibit distinct characteristics in frequency and distribution due to specific reasons. Firstly, reference in grammatical cohesion is the most frequently used cohesive device, primarily due to the high frequency of personal pronouns throughout the speech text, which refer to both the speaker and the audience. Second, conjunction in grammatical cohesion also holds a position of importance based on the frequency and distribution used by TED speakers. The results show that among the subcategories of conjunctions, additive conjunctions are the most frequently used. Finally, the study found that the instances of substitution and ellipsis are quite limited, accounting for only a small portion of the overall cohesive devices. This is because excessive use of substitution and ellipsis can reduce the formality of public speaking.

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