

Strategic Pro-environmental Persuasion: Use of Hedges in Chinese Environmental Commentary

Luying Zhang and Yang Chen

Abstract—This paper presents an analysis of hedges in Chinese environmental news commentaries. The study focuses on the way in which hedges contribute to achieving persuasion in texts and promoting pro-environmental awareness among readers. First, a quantitative approach was applied to identify the distribution of hedges in 30 texts of environmental commentaries from People's Daily. Second, a textual analysis was conducted to explore how hedges enhanced ethos, pathos, and logos to achieve persuasion. Research results reveal that (1) authors used a high percentage of epistemic adjectives/adverbs (318, 50.56%) and modal verbs (206, 32.75%); (2) hedges contributed to enhancing ethos, pathos, and logos through establishing a negotiable persona, generating resonance, and strengthening reason and logic. This study provides an innovative angle of understanding hedges in journalistic discourse and extends existing knowledge on strategic environmental communication with hedging devices.

Index Terms—Chinese news commentary, hedge, persuasion, pro-environmental.

I. INTRODUCTION

China has been paying ecological environment cost for its dramatic economy booming and unprecedented urbanization process in past several decades [1]. After years of fast development, China has become the second largest economy entity in the world [2]. However, it is facing severe environmental challenges as its ecological resources, like land, water, and atmosphere are suffering from destruction at different levels. Recently, Chinese government has been putting forward a series of policies on environmental regulations to balance its industrialization process and sustainable development [3]. Meanwhile, different forms of Chinese media are covering more and more ecological environment topics and trying to influence public opinions of pro-environment continuously and imperceptibly.

Mass media plays an important role in people's life and can shape their lifestyles, value systems, and political views [4]-[7]. From the public sphere of news media, individuals can perceive the environment deterioration that they may not experience personally [8]. Under such circumstances, numerous studies have been conducted to investigate how ecology-related information is articulated and presented in the news media [9]. Existing research findings pointed out that creative use of language in environmental communication makes significant differences in promoting people's pro-environmental decision making [10].

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Specifically, the application of many rhetorical strategies such as metaphor, simile, and euphemism in environmental news discourse has been analyzed [11], [12]. However, as a rhetorical resource with considerable persuasive effects, hedges have been overlooked in research of environmental communication and news discourse.

Considering the potential contribution that hedges could possibly make to pro-environmental communication under current Chinese publicity backgrounds, it is of great research and practical value to understand how hedges are used and how they realize the persuasive functions of awakening people's environmental awareness and persuading pro-environmental behaviors in Chinese journalistic discourse. Therefore, for addressing the research gaps, the present study proposes the following research questions:

- (1) What hedging devices are adopted in the Chinese environmental commentaries?
- (2) How do the adopted hedging devices achieve persuasion?

II. LITERATURE REVIEW

A. Functions of Hedges in Journalistic Discourse

According to Lakoff [13], hedges are words that make things more or less fuzzy. Allowing authors to express tentativeness and possibility, hedges have been referred as one of the prominent strategies of mitigating viewpoint expression in different contexts, such as medical discourse [14], academic discourse [15], legal discourse [16], and economic discourse [17], [18]. In journalistic discourse, previous studies addressed the issue of hedges within the metadiscourse framework and explored the functions of hedges in rendering texts persuasive [19]-[22].

Journalistic discourse was considered to have adequate examples of persuasive writing and even "setting up standards for written persuasion" [23]. Especially, editorials and commentaries intend to "present the opinions of the newspaper about recent issues that are of social or political significance" [24]. However, despite the persuasive nature of the texts, "automatic acceptance of the presented ideas does not always occur" [19]. As pointed by Dafouz-Milne [19], "the key to an effectively persuasive text is the artful combination of weakening expressions (i.e. hedges) and strengthening ones (i.e. certainty markers and/or attitudinal markers) with the final intention of producing a discourse that is neither too assertive nor too vague." In practice, journalists and commentators often employ hedges to display vague degree or quantity for reducing the degree of their commitments to assertions [15], [25]. Acknowledging the

limits of what can be concluded from existing information, hedges exhibit authors' uncertainty in fact description [26]. But they also indicate authors' endeavor of conveying facts as objectively as possible instead of making arbitrary statements, which increases texts' authenticity and reliability. According to Jensen [20], "journalists were viewed as more trustworthy (a) when news coverage of cancer research was hedged (e.g., study limitations were reported) and (b) when the hedging was attributed to the scientists responsible for the research (as opposed to scientists unaffiliated with the research)".

In addition, the persuasiveness of editorials demands "conscious structuring of the text in order to create a bond between the author and the readers" [22]. Peterlin and Moe [21] found that news reporters can adopt hedges to establish a dialog with the audience so that the persuasive effect will be enhanced. Although the persuasive functions of hedges in journalistic discourse have been recognized in academia, there is little evidence on how hedges work particularly in a specific context of journalistic discourse, which limits a more rational and efficient utilization of hedges in commentaries concerning pro-environmental persuasion.

B. Strategic Persuasion

Generally, persuasion refers to the process of changing someone's beliefs and attitudes [27]. Psychological theories have been proposed to explain how persuasion works, including Hovland-Yale model [27], [28], elaboration likelihood model [29], [30], and cognitive dissonance paradigm [31]. As a type of human communication, persuasion is not only a psychological phenomenon, but also a linguistic one. The attractiveness and strength of arguments and how the speaker sustains an idea all influence the effects of persuasion [32]. In other words, how language is used to present and frame ideas is an important factor in determining whether persuasion is successful or not. Therefore, the analysis of linguistic expressions in a particular context is essential to interpret the mechanisms of persuasion.

Many studies exploring persuasion strategies were conducted based on the classic framework proposed by the Greek philosopher Aristotle [33]. This framework contains three important methods of persuasion: ethos, logos, and pathos. Ethos, meaning character, refers to the establishment of a trustworthy persona. The speaker or writer needs to use appropriate language to gain the psychological recognition and trust of the audience [27], [33]. Pathos is the emotional appeal, moving people by feeling to generate resonance and identification [27]. It is used to make the audience "feel what the speaker or writer would like them to feel" [34]. Logos means the persuasion is achieved by using logic and reason. Quoting facts and statistics and citing convinced authorities on a subject can form logos [34]. It has been found that ethos, pathos, and logos are enhanced through the strategic use of language to achieve persuasion in various genres, such as public speech [34], social/environmental reports [35], workplace request emails [29], and policy documents [36]. As mentioned, hedges have been studied in journalistic discourse and prove to have persuasive effects in news texts. These previous studies only explored the persuasive functions of hedges by interpreting their meaning and

authors' intention in context, but the relationship between hedges and specific persuasion strategies was not clearly revealed. To understand this, the present study investigates how ethos, pathos, and logos are built by using hedges.

III. RESEARCH METHODS

A. Corpus Construction

This study built a corpus consisting of Chinese environmental commentaries from a public media *People's Daily Online* (人民网), a platform constructed by *People's Daily* (人民日报) which is regarded as one of the most influential newspapers in China. *People's Daily Online* is known as a website with diverse and in-depth content, including news covering, online commentary, online interview, community interaction, live broadcast, and mobile news release. *People's Daily Online* circulates versions in Chinese, English, Russian, French, Spanish, and Arabic. The commentaries in this study were selected from the Chinese version. With 35,677 characters in total, the current corpus comprised 30 news commentaries between November 2018 and November 2019, each of which was 1,000 to 1,500 characters in length. Table I shows the topics and the number of the collected environment-related commentaries.

TABLE I: TOPICS AND NUMBER OF TEXTS

Topic	Number	Topic	Number
Multiple themes	7	Illegal use of resources	2
Supervision and governance	5	Air pollution	2
Solid pollutants	5	Urbanization and environment	1
Protection of water resources	4	Contribution of government and individuals	1
Traveling and environment	2	Planting trees	1

B. Hedge Identification

Though the definition and classification of hedges have been discussed by many scholars [37]-[39], no existing inventory of Chinese hedges was available. Some Chinese researchers [26], [40] examined the hedges in Chinese articles based on the hedge definition of Hyland [15]. This study adopted the classification approach from the study by Yang [26], in which hedges were classified into modal verbs, epistemic adjective/adverb/noun, lexical verbs, and phraseological expressions. In addition, since it was pointed out by Holmes [40], [41] that form was rarely a sufficient basis in identifying hedges, a context-sensitive analysis was conducted for the identification of hedges. The complex meanings of Chinese characters and expressions made the analysis of context particularly important in investigating a Chinese corpus, as exemplified in the use of "需要" in the following examples:

- (1).....更好满足人民美好生活需要。
... meet people's needs in a better way.
- (2) (政府) 需要继续严格管控围填海。

(The government) *needs to* continue to strictly control reclamation.

“需要” in the above examples shared the same linguistic form. When the context was taken into consideration, it was found that “需要” in Sentence (1) was a noun, while in Sentence (2) it was a modal verb. Therefore, only the latter was identified as a hedge.

Examples of hedges in four types are as follows, and the translation provided is only for reference:

i. Modal verbs

我们应该在保护海洋的前提下改造和利用海洋资源。

We *should* protect the ocean when transforming and using marine resources.

ii. Epistemic adjectives, adverbs, and nouns

Epistemic adjectives:

村民反映了很多次。

Villagers complained about this *many* times.

Epistemic adverbs:

整治工作相当复杂。

Governance and administration are *quite* complicated.

iii. Lexical verbs

不久前的一项研究显示...

A recent study *shows* that...

iv. Phraseological expressions

我国海洋事业总体上进入历史上最好的发展时期。

In general, China’s marine undertakings entre the best time for development ever.

C. Data Analysis

The present study was conducted in three stages. In the first stage, hedges were first identified and labeled with the help of WordSmith Tools 7.0. Texts in the corpus were segmented and labeled on Online Corpus (<http://corpus.zhonghuayuwen.org/>), which provided a tool for segmenting Chinese texts and calculating the number of tokens. The segmented texts were then analyzed by WordSmith Tools 7.0 and the Concord tool was used to search hedges. An advantage of the Concord is to allow users to “see any word or phrase in context” [42], which is needed for identifying hedges. Therefore, whether the keyword could be identified as a hedge was finally decided after the manual analysis of context. To avoid missing any additional hedge, all the texts were manually checked to identify new hedges. All the hedges were tagged in the original texts and recorded by the linguistic forms and respective number of occurrences.

In the second stage, each hedge was examined in the texts to decide whether it was used to describe phenomena or to express comments and advocation. Hedges in statements exhibiting events and phenomena were labeled “E&P”, while those in comments and advocation were labeled “C&A”. The number of hedges in E&P and C&A was calculated respectively.

Based on the quantitative results in the previous two stages, the textual analysis was conducted in the last stage. The persuasive effects of hedges were analyzed by discussing how ethos, pathos, and logos were enhanced through the use of four types of hedges. Examples were extracted from the corpus for elaboration.

IV. RESULTS

All hedges identified in the corpus were classified into four major types and the percentage of each type is shown in Table II. Generally, of four different types of hedges, epistemic expressions (318, 50.56%) were adopted most frequently, accounting for half of all hedges in the corpus. Another type that exhibited a high percentage was modal verbs (206, 32.75%). The rest two, lexical verbs (73, 11.61%) and phraseological expressions (32, 5.09%), showed a much lower frequency of occurrence compared with the other two types.

TABLE II: NUMBER OF FOUR TYPES

Types of hedges	No. of occurrence
Epistemic adj. adv. & n.	318(50.56%)
Modal verbs	206(32.75%)
Lexical verbs	73(11.61%)
Phraseological expressions	32(5.09%)
Total	629(100%)

The percentage of four types of hedges varies with genres. In Yang’s study, it was found that in Chinese-authored research articles, hedges from the most frequent to the least frequent were epistemic adverbs, adjectives and nouns, lexical verbs, modal verbs, and phraseological expressions [26]. In this study, epistemic words still topped the four types, but modal verbs were at a higher percentage than lexical verbs. The observed difference in two studies can be explained by the fact that the genres under investigation are different. According to Bhatia [36], [43], genres enable professionals to perform their everyday tasks and language is used in a conventionalized communicative setting to achieve specific communicative goals. In general, research articles aim to disseminate research findings, while news commentaries intend to convey information about news events and propose relevant opinions. More lexical verbs are needed to illustrate new findings in research articles. Modal verbs are used more frequently in news commentaries to show authors’ attitudes. The distribution of hedges in two genres assists to fulfill the different communicative goals.

As the most frequently used hedges in the corpus, epistemic adjectives and adverbs were found to serve either as a quantity modifier or as a modifier confining the extent of expressions. It is shown in Table III that there were more modifiers related with extent (176, 55.35%) than those related with quantity (142, 44.65%).

TABLE III: EPISTEMIC WORDS IN THE CORPUS

Function	Number	Examples
Quantity	142(44.65%)	超过(over), 近(nearly)
Extent	176(55.35%)	相当(quite), 极其(extremely)
Total	318	

Modal verbs, ranking second in terms of total number, had diverse linguistic forms. For example, the modal verb “应该”, meaning “should”, was expressed in the forms of “应”, “应该”, and “应当”. There were also circumstances in which one Chinese character expressed meanings of various modal

verbs. The example is the use of “要”, the meaning of which may vary with different contexts, as illustrated in the following sentences from the corpus:

(3) 良性发展既要懂得“生产”，更要学会“消化”。

For sound progress, we *need to* not only understand “production”, but also *need to* learn to “digest”.

(4) (政府) 要开展广泛的教育引导工作。

(The government) *should/must* extensively carry out the work of education and guidance.

Lexical verbs were not frequently used in the corpus, but this type of hedges played a unique role. Different from the other three types, lexical verbs led the flow of sentences instead of serving as modifiers or showing modality. The content following lexical verbs in environmental news commentaries was the statistics or speech from experts and officials. It is noteworthy that the subjects of lexical verbs in this study were citizens, experts, and government officials. Though the opinions or suggestions of the author were presented in the news commentaries, any reference to the author never served as the subjects of these lexical verbs. The last type, phraseological expressions, accounted for a small proportion of all hedges. These expressions occurred with conclusive sentences in texts, confining the perspective and scope of corresponding statements.

In news commentaries, the statements either objectively described news events or presented comments and advocacy of authors. The distribution of hedges in each circumstance demonstrated a considerable difference. As is shown in Table IV, only epistemic words occurred more frequently in statements describing events and phenomena. The other three types, modal verbs, lexical verbs, and phraseological expressions, exhibited a higher percentage in statements presenting comments and advocacy. This distribution pattern corresponds to meanings of hedges in each type. Epistemic words functioned in modifying quantity and extent of situation, so they were more frequently used in describing details of news events as modifiers. Most of modal verbs (73.30%) were adopted in presenting opinions and advocacy in that this type of hedges contained modality and attitudes. Lexical verbs and phraseological expressions, serving to demonstrate others’ opinions and modify conclusive statements, were necessary to support explanatory statements and comments given by the author. In general, the distribution of hedges in the part of E&P and C&A shows that authors of news commentaries keep a balance in using four types of hedges based on different focus in two parts and features of hedging devices.

TABLE IV: NUMBER OF HEDGES FOR DIFFERENT PURPOSES

	E&P	C&A	Total
Modal verbs	55(26.70%)	151(73.30%)	206(100%)
Epistemic adj./adv./n.	181 (56.92%)	137(43.08%)	318(100%)
Lexical verbs	33(45.21%)	40 (54.79%)	73(100%)
Phraseological expressions	12 (37.5%)	20 (62.5%)	32(100%)

E&P: events& phenomena

C&A: comments& advocacy

V. DISCUSSION

In a corpus with 30 environmental news commentaries, four major types of hedges were identified and examined in terms of the number and percentage of occurrence. The results show that epistemic words and modal verbs were more frequently used in texts. Lexical verbs and phraseological expressions accounted for a much lower percentage, but they each played a unique role by focusing on specific information. Lexical verbs were related with quotation from reliable sources and phraseological expressions were used to make conclusive statements. Based on these findings, this section conducted a textual analysis to explore how hedges in news commentaries enhanced ethos, pathos, and logos to achieve pro-environmental persuasion.

A. Ethos and Hedges

Ethos refers to the projected character of authors and concerns their authority and credibility in texts [35], [44]. To make texts persuasive, authors should construct a trustworthy and reliable persona. The author of news commentaries used hedges to create negotiability. Although authority was weakened, a negotiable persona made it easier for readers to accept the message. Modal verbs and some epistemic adjectives and adverbs played a part in establishing such a persona. See two examples below:

(5) 这样的奖励政策有点简单化。

Such an award policy is *a little* simple.

(6) 需要每位公民成为生态文明建设的参与者。

Every citizen *needs to* participate in the construction of ecological civilization.

In Sentence (5), the hedge was an epistemic adverb “有点 (a little)” and in Sentence (6), the hedge was the modal verb “需要 (need)”. The presence of such hedges created negotiability in the statements. “有点 (a little)” modified the adjective “simple”. This modifier showed not only the seriousness of the phenomenon but also left the space for negotiation about the degree. Without this hedging device, this statement would be more like a conclusion to inform readers, thus making the author superior to readers. In Sentence (6), the occurrence of “需要 (need)” enabled the statement to be an advocacy rather than an order. This advocacy provided the space for negotiation so that readers would not find they were forced to take the suggestion to protect the environment.

In conclusion, hedges in the news commentaries contributed to creating a negotiable persona by leaving space for negotiability. In other words, the author did not choose linguistic strategies to make themselves as authoritative as experts or officials. This preference can be explained by the implicitness in Chinese communication. As suggested by Fang and Faure [45], Chinese tend to use small “modifiers” to condition their meanings and by doing so, a harmonious atmosphere is created among the parties involved. The negotiable persona established by hedges was more likely to persuade Chinese readers than a persona with authority. This distinguishes environmental news commentaries from laws and regulations related with the environment, exposing readers to environmental problems and encouraging pro-environmental behaviors in a mitigating way.

B. Pathos and Hedges

Pathos emphasizes feelings and concerns how to trigger emotions like happiness, sadness, pity, or fear [35], [46]. This means the author needs to engage readers in texts and evoke empathy among them. In this study, pathos was enhanced mainly by epistemic adjectives and adverbs. See one example below:

(7) 塑料餐具、塑料盒等塑料制品的消费量也十分可观。

Consumption of plastic products such as plastic tableware and plastic boxes is *rather* considerable.

The epistemic adverb “十分 (rather)” strengthened the degree of the fact described in the sentence and contained strong emotions. The sentence intended to emphasize the seriousness of pollution and the hedge “十分 (rather)” made the message salient when the attitudes of the author were also passed to readers.

In the news commentaries of this study, the epistemic adjectives and adverbs, especially those showing degree, functioned in building pathos to evoke the emotions and generate resonance among readers. Meanwhile, the environmental problems were properly presented. In the context of environmental communication, framing environmental problems correctly is crucial and will motivate and engage people in environmental protection [47]. As Barr [48] put it, there is “a perceived necessity to convince individuals that there are significant environmental problems that require individual behavioral responses. Raising awareness, it is argued, motivates individuals to act”.

C. Logos and Hedges

Logos stresses logic and clarity of the argument [49] appealing to reason. In the news commentaries, lexical verbs, phraseological expressions, and some epistemic words all served to enhance the logos of texts. Lexical verbs like “表明 (indicate)” and “估计 (estimate)” in the corpus were followed by speech or findings from the third party. The major function was to provide supporting details from reliable sources, including speech of officials, governmental documents, or findings from experts.

Besides the quotation of facts realized by lexical verbs, logos was also established by modifiers like epistemic words and phraseological expressions. The two sentences below are instances adopting the two types:

(8) 事实上, 我国大中城市“垃圾围城”的问题已经得到了较好的解决。

In fact, the problem of “garbage siege” in China's large and medium cities has been better solved.

(9) 涉及海域面积仅约2.15公顷。

The sea area involved is only *about* 2.15 hectares.

“事实上 (in fact)” at the beginning of Sentence (8) served as a sign of transition, indicating the content was a further explanation or a conclusion of the previous information. Therefore, this type of hedges signaled the progression of meanings and specified the perspective or range of the following information.

In Sentence (9), the author added “约(about)” before an accurate number. It seems that introducing information about quantity in this way shows the uncertainty of details. Actually, modifiers like “约 (about)” reflected the prudence of the author in presenting information. The authors honestly

demonstrated their uncertainty about such details by using epistemic words which modified quantity. The preciseness of information was ensured and logos was enhanced.

To summarize, news commentaries built logos by lexical verbs, phraseological expressions, and some epistemic adjectives/adverbs. Reliable supporting details and prudence in describing statistics strengthened the reason of texts and transition in meaning signaled by phraseological expressions enhanced the logic. The establishment of logos contributed to the coherence of texts, making it easier for the audience to process information and have a better understanding of authors' intention.

VI. CONCLUSION

The present study has conducted quantitative research and textual analysis in order to find out how hedges are used in Chinese news commentaries to achieve persuasion. Results show that four major types of hedges varied in their number of occurrences. Epistemic adjectives/adverbs and modal verbs exhibited a relatively higher percentage among all hedges in the corpus. The textual analysis found that pro-environmental persuasion was achieved (1) by enhancing ethos to persuade readers into protecting the environment with a negotiable persona; (2) by enhancing pathos to generate resonance about the seriousness of environmental problems and urgency of environmental protection; and (3) by enhancing logos to provide convincing details and achieve transition in meaning. The study has filled in a gap in the study of ecological discourse and provided a new research perspective that linguistic devices like hedges can also make a difference in persuasiveness in the context of ecological discourse.

One limitation of this study is the lack of diversity in the source of articles. Though the commentaries all focus on the environment, there should be more sub-topics to see whether the distribution of hedges varies with topics. Another limitation is that the present study is simply based on theoretical analysis. The effectiveness and persuasive effects of the texts should be proved by empirical studies among the readers. How readers react to the environmental information conveyed in news commentaries and whether the use of hedges affects the effectiveness need further exploration.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Luying Zhang conducted the research; Dr. Yang Chen supervised and guided the research; both authors had approved the final version.

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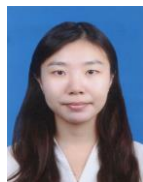
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REFERENCES

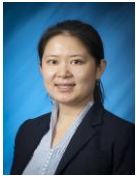
- [1] T. Shi, S. Yang, W. Zhang, and Q. Zhou, “Coupling coordination degree measurement and spatiotemporal heterogeneity between

- economic development and ecological environment — Empirical evidence from tropical and subtropical regions of China,” *Journal of Cleaner Production*, vol. 244, Article 118739, Jan. 2020.
- [2] Y. Wu, V. W. Tam, C. Shuai, L. Shen, Y. Zhang, and S. Liao, “Decoupling China’s economic growth from carbon emissions: Empirical studies from 30 Chinese provinces (2001–2015),” *Science of the Total Environment*, vol. 656, pp. 576-588, Mar. 2019.
- [3] B. Yuan and Y. Zhang, “Flexible environmental policy, technological innovation and sustainable development of China’s industry: The moderating effect of environment regulatory enforcement,” *Journal of Cleaner Production*, vol. 243, Article 118543, Jan. 2020.
- [4] E. DellaVigna and E. Kaplan, “The Fox News effect: Media bias and voting,” *Quarterly Journal of Economics*, vol. 122, pp. 1187-1234, Aug. 2007.
- [5] R. Enikolopov, M. Petrova, and E. Zhuravskaya, “Media and political persuasion: Evidence from Russia,” *American Economic Review*, vol.101, pp. 3253-3285, Dec. 2011.
- [6] R. Jensen and E. Oster, “The power of TV: Cable television and women’s status in India,” *Quarterly Journal of Economics*, vol. 124, pp. 1057-1094, Aug. 2009.
- [7] M. Tu, B. Zhang, J. X. and F. Lu, “Mass media, information and demand for environmental quality: Evidence from ‘Under the Dome’,” *Journal of Development Economics*, vol. 143, Article 102402, Mar. 2020.
- [8] T. Maniou, I. Photiou, N. Eteokleous, and I. Seitaniadis, “The utilization of journalistic sources in the national press: Communicating the transition from economic crisis to sustainable,” *Central European Journal of Communication*, vol. 10, pp. 98–113, Apr. 2017.
- [9] R. Alexander and A. Stibbe, “From the analysis of ecological discourse to the ecological analysis of discourse,” *Language Sciences*, vol. 41, pp. 104-110, Jan. 2014.
- [10] M. Platonova, “Applying emotive rhetorical strategy to environmental communication in English and Latvian,” *Procedia-Social and Behavioral Sciences*, vol. 236, pp. 107-113, Dec. 2016.
- [11] X. Guo and X. Li, “Green advertisement, ‘Greenwash’ rhetoric and its ideological criticism in the context of environmental communication,” *Journal of Hunan Normal University*, vol. 47, pp. 149-156, 2018.
- [12] X. Guo, “A critical analysis of euphemistic discourse in environment communication,” *Journal of News and Communication*, pp. 25-33, 2012.
- [13] G. Lakoff, “Hedges: A study in meaning criteria and the logic of fuzzy concepts,” *Journal of Philosophical Logic*, vol. 4, pp. 458–508, 1973.
- [14] F. Salager-Meyer, “Hedges and textual communicative function in medical English written discourse,” *English for Specific Purposes*, vol. 13, pp. 149-170, 1994.
- [15] K. Hyland, *Hedging in Scientific Research Articles*, Amsterdam: John Benjamins, 1998.
- [16] H. Vass, “Lexical verb hedging in legal discourse: The case of law journal articles and Supreme Court majority and dissenting opinions,” *English for Specific Purposes*, vol. 48, pp. 17-31, Oct. 2017.
- [17] A. I. Moreno, “The explicit signaling of premise-conclusion sequences in research articles: a contrastive framework,” *Text*, vol. 18, pp. 545–585, Jan. 1998.
- [18] P. M. Dueñas, “A contribution to the intercultural analysis of metadiscourse in business management research articles in English and Spanish: a corpus-driven approach,” Unpublished Ph. D dissertation, Universidad de Leon, 2007.
- [19] E. Dafouz-Milne, “The pragmatic role of textual and interpersonal metadiscourse markers in the construction and attainment of persuasion: A cross-linguistic study of newspaper discourse,” *Journal of Pragmatics*, vol. 40, pp. 95-113, Jan. 2008.
- [20] J. D. Jensen, “Scientific uncertainty in news coverage of cancer research: Effects of hedging on scientists’ and journalists’ credibility,” *Human Communication Research*, vol. 34, pp. 347-369, July 2008.
- [21] A. P. Peterlin and M. Z. Moe, “Translating hedging devices in news discourse,” *Journal of Pragmatics*, vol. 102, pp. 1-12, Sept. 2016.
- [22] L. Khabbazi-Oskouei, “Propositional or non-propositional, that is the question: A new approach to analyzing ‘interpersonal metadiscourse’ in editorials,” *Journal of Pragmatics*, vol. 47, pp. 93-107, Feb. 2013.
- [23] U. Connor, *Contrastive Rhetoric. Cross-Cultural Aspects of Second Language Writing*, New York: Cambridge University Press, 1996, p. 143.
- [24] Y. Huang and W. Ren, “A novel multidimensional analysis of writing styles of editorials from China Daily and The New York Times,” *Lingua*, vol. 235, Article 102781, Feb. 2020.
- [25] W. J. V. Kopple, “Some exploratory discourse on metadiscourse,” *College Composition and Communication*, vol. 36, pp. 82-93, Feb. 1985.
- [26] Y. Yang, “Exploring linguistic and cultural variations in the use of hedges in English and Chinese scientific discourse,” *Journal of Pragmatics*, vol. 50, pp. 23-36, May 2013.
- [27] W. Hong, Z. Yu, L. Wu, and X. Pu, “Influencing factors of the persuasiveness of online reviews considering persuasion methods,” *Electronic Commerce Research and Applications*, vol. 39, Article 100912, Jan.-Feb. 2020.
- [28] C. I. Hovland and W. Weiss, “The influence of source credibility on communication effectiveness,” *Public Opinion Quarterly*, vol. 15, pp. 635-650, 1951.
- [29] V. Ho, “Using metadiscourse in making persuasive attempts through workplace request emails,” *Journal of Pragmatics*, vol. 134, pp. 70-81, Sep. 2018.
- [30] R. Petty and J. Cacioppo, *Central and Peripheral Routes to Attitude Change*, New York: Springer, 1985.
- [31] W. H. Cummings and M. Venkatesan, “Cognitive dissonance and consumer behavior: A review of the evidence,” *Journal of Marketing Research*, vol. 13, pp. 303-308, Aug. 1976.
- [32] C. Bențea and V. Anghelache, “Persuasion in the context of the efficient didactic communication,” *Procedia – Social and Behavioral Sciences*, vol. 63, pp. 145-151, Oct. 2012.
- [33] Aristotle and W. R. Roberts, *Aristotle: Rhetoric*, Modern Library, 1954.
- [34] A. Fanani, S. Setiawan, O. Purwati, M. Maisarah, and U. Qoyyimah, “Donald Trump’s grammar of persuasion in his speech,” *Heliyon*, vol. 6, article e03082, Jan. 2020.
- [35] C. Higgins and R. Walker, “Ethos, logos, pathos: Strategies of persuasion in social/ environmental reports,” *Accounting Forum*, vol. 36, pp. 194-208, Sep. 2012.
- [36] V. Ho, “Discourse of persuasion: A preliminary study of the use of metadiscourse in policy documents,” *Text & Talk*, vol. 36, pp. 1-21, Mar. 2016.
- [37] K. Hyland, *Metadiscourse: Exploring Interaction in Writing*, London: Continuum, 2005.
- [38] J. Holmes, “Expressing doubt and certainty in English,” *RELC Journal*, vol. 13, pp. 9-28, Dec. 1982.
- [39] J. Holmes, “Doubt and certainty in ESL textbooks,” *Applied Linguistics*, vol. 9, pp. 21-44, Mar. 1988.
- [40] G. Hu and F. Cao, “Hedging and boosting in abstracts of applied linguistics articles: A comparative study of English-and Chinese-medium journals,” *Journal of Pragmatics*, vol. 43, pp. 2795-2809, Sep. 2011.
- [41] J. Holmes, “Hedges and boosters in women’s and men’s speech,” *Language & Communication*, vol. 10, pp. 185-205, 1990.
- [42] B. F. Klimova, “Using corpus linguistics in the development of writing,” *Procedia – Social and Behavioral Sciences*, vol. 141, pp. 124-128, Aug. 2014.
- [43] V. Bhatia, *Worlds of Written Discourse*, London: Continuum, 2004.
- [44] E. J. Hartelius and L. Browning, “The application of rhetorical theory in managerial research: A literature review,” *Management Communication Quarterly*, vol. 22, pp. 13-39, Aug. 2008.
- [45] T. Fang and G. O. Faure, “Chinese communication characteristics: A Yin Yang perspective,” *International Journal of Intercultural Relations*, vol. 35, pp. 320-333, May 2011.
- [46] J. A. Aho, “Rhetoric and the invention of double entry bookkeeping,” *Rhetorica: A Journal of the History of Rhetoric*, vol. 3, pp. 21-43, 1985.
- [47] D. A. Bakar, “Good, the bad and the ugly: Framing the country development through environmental communication,” *Procedia – Social and Behavioral Sciences*, vol. 168, pp. 8-12, Jan. 2015.
- [48] S. Barr, “Are we all environmentalists now? Rhetoric and reality in environmental action,” *Geoforum*, vol. 35, pp. 231-249, Mar. 2004.
- [49] R. Holt and A. MacPherson, “Sensemaking, rhetoric and the socially competent entrepreneur,” *International Small Business Journal*, vol. 28, pp. 20-42, Jan. 2010.

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