

Research on Pragmatic Realization of Human and Machine Translation of the Expressive Marked Publicity Discourse

Qianqian Yu*

East China University of Science and Technology, Shanghai, China

* Corresponding Author

Abstract

This study focuses on the translation of expressive marked discourse in Chinese publicity materials as the object of research and examines the comparison of the pragmatic realization effects of human and machine translation, as well as the influence of markedness theory, cooperative principle, relevancy theory, and politeness principle on the pragmatic translation. The results show that human translations have higher pragmatic value and that the effects of the markedness theory and cooperation principle are higher than those of the relevance theory and politeness principle. Therefore, when translating marked statements, translators should pay attention to the achievement of discourse markers and the application of the relevant linguistic principles to maximize the pragmatic equivalence of translation.

Keywords

Human Translation and Machine Translation, Expressive Discourse, Pragmatics, Marked Discourse.

1. Introduction

In the age of globalization and information, international communication and understanding have become increasingly important. However, there are barriers to communication between different languages, especially when it comes to reporting international events, which includes those expressive statements. As the world's largest developing country and the world's second-largest economy, China plays an important role in the international arena, and the discourse revealing its attitude toward international affairs can have a huge impact on the building of international relations. Therefore, whether translations accurately convey attitudes and opinions is of great research value.

Austin first classified discourse, and then Searle revised Austin's classification of speech acts, he divided speech acts into the following five categories: representative, directive, commissive, expressive, and declarative. As one of the five categories of speech acts classified by Searle, expressive speech act refers to "a certain mental state expressed by the speaker while expressing the propositional content of the discourse" [18]. Based on this, this study adopts both quantitative and qualitative research methods, aiming to explore the differences between human and computer translations of expressive statements in Chinese publicity discourse and to investigate the influence of the relevance theory, cooperative principle, and politeness principle on the achievement of pragmatic translation. In this study, the expressive discourse is classified as marked and unmarked discourse. Through this study, both machine translation and human post-translation editing ability can be improved with higher accuracy and effectiveness to promote communication and cooperation between different countries. To this end, this paper takes Chinese publicity discourse as the research corpus and focuses on whether there is a significant difference in the pragmatic realization of expressive marked publicity discourse between human and machine translation.

2. Theoretical Framework

2.1. Expressive Speech Act

In recent years, related speech act research mainly focused on the analysis of commissive and declarative discourse, and there is little research on the discourse of expressive speech. Many scholars concentrate their focus on the specific speech acts in different countries and nations, including their daily conversation, public speech, and diplomatic strategies. Yuan Zhoumin and other scholars [17] examined the pragmatic features of Chinese governmental apology discourse from two aspects, namely the apology strategies and the use of illocutionary force-indicating devices (IFIDs). Han Dan [3] explores the linguistic realizations, pragmatic strategies, and pragmatic functions of the construction in performing the speech act of refusal in diplomacy. Fan Xiaoling and Hu Fanzhu [15] studied the deep relationship between commissive and directive speech acts. Li Jianxue [6] discussed the structuring of hypothetical space introduced by if-conditionals in performing commissive acts and its characteristics. Therefore, given that a lot of existing literature and pragmatic value, it is essential to conduct deeper research on speech acts.

Searle [10] defines the illocutionary point of expressives as expressing the psychological state specified in the sincerity condition about a state of affairs specified in the propositional content. The difference lies in that there is no direction of fit in expressives, and the truth of the proposition expressed in an expressive is presupposed. [10] According to Searle, its symbolic expression is $E\emptyset(P)(S/H + \text{property})$, where “E” indicates the illocutionary point common to all expressives, “ $\emptyset$ ” is the null symbol indicating no direction of fit, P is a variable ranging over the different possible psychological states expressed in the performance of the illocutionary acts in this class, and the propositional content ascribes some property (not necessarily an action) to either S or H . Searle has criticized Austin's list of classifications not to classify the illocutionary acts but to classify the English illocutionary verbs [10], therefore, the verb is not the focus of his system of speech act classification. Searle lists a total of six paradigm expressive verbs: thank, congratulate, apologize, condole, deplore, and welcome. The verb in the deep structure of the expressive act is “I show you” (“我向你表示”), not “I tell you”, (“我跟你说话”或“我告诉你”), which confirms that $E(P)$ is an independent mode of speech and psychological state.[1]

Wu Aihua [1] considers the characteristics of Chinese expressive speech acts and revises Searle's deep semantic structure to IV (express+emotion/volition) you+I/You VP/gerundial noun. The psychological states should be emotion and volition, which are referred to as affective verbs in linguistics. Furthermore, she argues that propositional truth is a prerequisite for expressive speech acts and does not appear in the declarative part of the proposition. Regarding the logical semantics of predicates, cognitive verbs are closely related to perceptual verbs [5], while verbs that express emotion and willingness are more similar, which are termed affective verbs in linguistics. Generally, psychologists categorize mental states into cognitive mental states, affective mental states, and volitional mental states, which are usually labeled cognition, emotion, and volition. Two scholars, Zhang Jijia and Lu Aitao [7], assert that the linguistic representations of cognition, emotion, and volition encompass various types of psychological vocabularies, that is, psychological verbs, psychological adjectives, and psychological nouns. Among these, Chinese psychological verbs can be divided into cognitive psychological verbs (feel, understand, imagine, guess, etc.), positive emotional psychological verbs (thank, satisfy, sympathize), negative emotional psychological verbs (condole, worry, anger), positive will psychological verbs (agree, favor, support, welcome, respect, concern, care, appreciate), and negative will psychological verbs (oppose, doubt, protest). Psychological adjectives often share homomorphic qualities with verbs in Chinese, such as happy, thankful, angry, as well as common psychological nouns, such as apology, respect [7].

By reading the Chinese publicity discourse, it is found that the frequently used expressive vocabularies include thanks, congratulations, welcome, concern, happy, and worry. Based on the Markedness Theory, marked words carry obvious stylistic functions, while unmarked words do not carry them; in other words, their stylistic functions potentially implicitly exist in the lexical meanings [16], and therefore can be classified into explicit marked expressive expressions and implicit unmarked expressive expressions. Chinese marked expressions such as honor, favor, support, welcome, respect, concern, please, thank, etc. Based on the aforementioned information, this thesis collects 10 groups of expressive statements (English and Chinese), including 5 groups of marked and unmarked statements, and obtains the corresponding machine translations with the help of ChatGPT 3.5 to carry out the relevant analysis and research.

2.2. Pragmatic Markedness Equivalence Principle

Markedness Theory was first proposed by the Prague School. Xu Shenghuan [11] believes that in the whole language system, some of the components of various linguistic units are basic, and their loaded meanings are neutral; the other part of the components, based on this kind of neutral meanings, adds certain characteristic meanings, thus gaining the “markedness”. Markedness theory can help us to analyze the features of language and then use it correctly. Scholar Liu Liyan [8] classified discourse markers by form, context dependency, and function. Scholar Yin Shulin [12] examined the functions of discourse markers from the perspectives of four major pragmatic theories: coherence theory, relevance theory, speech act theory, and adaptation theory. In the book *A New Approach to Translation Evaluation*, Hou Guojin [4] points out the application and value of the Markedness Equivalence Principle in comparing two translations, and then he proposes relevant criteria for evaluating the quality of translation that the closer the translation is to the original text in terms of discourse markers, the better the translation will be. Then, he brings forward the Pragmatic Markedness Equivalence Model and mentions the relation between markedness theory, cooperative principle, and the politeness principle.

American linguist and translation theorist Eugene A. Nida [9] put forward “dynamic equivalence”, which has had a revolutionary impact on the translation industry from the 1960s to the present. As Nida says, “Equivalence cannot be understood in its mathematical meaning of identity, but only in terms of proximity, i.e. based on degrees of closeness to functional identity”. The effect produced by the translated text on the readers is as close as possible to the original text. Grice believes that people's interaction will follow the cooperative principle which includes the criterion of quantity, quality, relation, and manner. Later, Leech brought forward the politeness principle to complement the cooperative principle, arguing that people violate certain cooperative principles driven by politeness. Sperber & Wilson [13] proposed the relevance theory, which is linked to the relation criterion within the cooperative principle and became the highlight of the Neo-Grice pragmatics with greater explanatory power. It emphasizes that communication is an ostensive-inferential process and that there is informative intention and communicative intention behind communication.

After examining previous research, it is found that many scholars have focused on the study of marked discourse and emphasized the close connection between discourse markers and pragmatic theories. Therefore, this thesis focuses on assessing the degree of pragmatic realization of human and machine translation of expressive discourse from the aspects of the markedness theory, relevance theory, cooperative principle, and politeness principle.

3. Research Design

3.1. Research corpus

Ten groups of expressive publicity discourse and their corresponding translations were selected for the study, including five groups each of marked and unmarked statements. Then, ChatGPT3.5 was used to translate these sentences into English and compare the pragmatic realization of the human translation (Translation 1) and the machine translation (Translation 2).

3.2. Research subjects

The research subjects consist of 148 university students with an average age of 19.5 years old. Among them, 54.73% were male and 45.27% were female. The reasons why choosing university students as the respondents are as follows: firstly, university students have a higher educational background in general, stronger acceptance and comprehension of the language, and can complete the test more effectively; secondly, choosing students to answer the questionnaire is more generous in time and serious in attitude, and relevant pragmatic theories, background and purpose of the test can be briefly introduced before the test, which is more conducive to improving the reliability of the answers. Finally, in terms of statistics and analyses, we summarized all the data obtained in an Excel table, containing the respective scores of Translation 1 and Translation 2 to compare them more prominently.

3.3. Research Tools

(1) **Questionnaire on the Pragmatic Realization of Human and Machine Translation of Chinese Expressive Publicity Discourse.** This study uses a web-based questionnaire to collect relevant data and then imports it into SPSS to further analyze. The questionnaire is in the form of a Likert Five-Level Scale, including testing scopes as the markedness theory, relevance theory, cooperative principle, and politeness principle, each with a relevant scoring question, and the subjects are asked to score one by one. To let the subjects better understand the process and requirements of the test, it is accompanied by relevant instructions and divided into five scoring levels: "5", "4", "3", "2", and "1". The Cronbach's coefficient of the questionnaire was 0.992.

(2) **Analytic hierarchy process.** The analytic hierarchy process (AHP) is a decision-making procedure originally proposed by Saaty [14] in the mid-1970s, which is a systematic, separable, and hierarchical analysis method of direct subjective measurement similar to the classical psychophysical ratio-scaling approach, its primary use is to offer solutions to decision and estimation problems in multivariate environments [2]. With this approach to relative measurement, a scale of priorities is derived from pairwise comparison measurements only after the elements to be measured are known. [14] To apply this method to solve questions, the questions would be divided into four levels: objective, decision makers, criteria, and alternatives. In this study, the relative measurement of the four decision markers is set through SPSS analysis, then Saaty's hierarchical analysis was used to determine the proportion held by each principle in the scores of the pragmatic translation, and then the total final translation scores will be calculated. Finally, the scores will be imported into SPSS to adopt descriptive statistics analysis to observe the overall differences in the effect of the pragmatic realization of human-machine translations.

4. Results and Discussion

The collected data were summarized in Excel and imported into SPSS for data analysis. The relevant variables: translation, relevance theory, cooperative principle, politeness principle, and pragmatic markedness realization were set, with pragmatic markedness realization as the

dependent variable. Under the questionnaire reliability test, Cronbach's $\alpha = 0.992$, which displays a higher reliability.

1. Descriptive statistics and relevant analysis of the pragmatic realization of human and machine translation

Firstly, the two variables of the translation and pragmatic markedness realization were tested for normal distribution, and it was found that the two variables were all $P > 0.05$, which means they are in conformity with the normal distribution.

Then the Independent Samples T-test in SPSS was used to further analyze whether there was a significant difference between human and machine translation in the aspect of pragmatic markedness discourse. The results show that $t(18) = 2.869$, $P < 0.05$; there is a significant difference between the two different translations of pragmatic realization.

The Mean Comparison Analysis in SPSS was used, and the results are shown in Table 4. It was found that Translation 1 (human translation) has a higher score of 4.09, while Translation 2 (machine translation) is 3.83. There is a great difference between the scores of the two translations, in which the absolute maximum of Translation 1 is 4.50 and the absolute minimum is 3.67, while Translation 2 is 4.00 and 3.67 respectively, which concludes that the highest score of Translation 1 is higher than that of Translation 2, and the lowest score of the two translations is the same. The standard deviation of Translation 1 is 0.25 and that of Translation 2 is 0.14, which shows that the score distribution of Translation 2 is closer, while scores of Translation 1 are more scattered.

2. Correlation analysis of the relevance theory, cooperative principle, and politeness principle on the pragmatic translation

The questionnaire was used to further collect the scores of human and machine translations of expressive discourse in terms of the relevance theory, cooperative principle, and politeness principle, and then imported into SPSS to explore the influence of these three principles on the pragmatic translation. First of all, the variables were tested for normal distribution, $P > 0.05$, which is consistent with normal distribution, so the Pearson Correlation Test was chosen here. The results of the correlation analysis in Table 5 show that the relevance theory and cooperative principle have a significant correlation with the pragmatic translation of marked discourse ($P < 0.01$), while the principle of politeness does not have a significant correlation.

Finally, Regression Analysis was used to analyze the data; the results show that the cooperative principle has a significant effect on the pragmatic realization of expressive marked discourse, $P < 0.01$; the relevance theory is less significant. At the same time, $VIF = 1.000$, there is no obvious collinearity between those variables.

Preliminary findings show that there are significant differences between human and machine translations of publicity statements of Chinese leaders. These differences can be attributed to a variety of factors such as language, culture, and linguistic context. Among them, scores of human translations are relatively higher, and readers can easily understand and acquire the information. However, machine translation has relatively lower scores, which means readers need to make more effort to get the correct pragmatic information. The results of the relevant analysis show that the cooperative principle has a significant effect on the pragmatic realization of expressive discourse, and the relevance theory has a certain effect, while the politeness principle has a negligible effect.

3. Comparison of Pragmatic Realization between Human and Machine Translation

To evaluate the pragmatic realization of marked discourse translation, it is assumed that the markedness theory is the most important. Then, according to the above data analysis, the factors that correlate with it are the cooperative principle, the relevance theory, and the politeness principle in the order of their relevance. Therefore, concerning the importance

criteria obtained, the overall pragmatic results of the two translations were examined by using Saaty's hierarchical analysis.

After the calculation, it is found that $CI \approx 0.0028 < 0.1$, which shows that the matrix is consistent, so the result is reliable to a certain extent. Then, the proportions of markedness theory, cooperative principle, relevance theory, and politeness principle in the evaluation of pragmatic translation were calculated to be 52%, 26%, 13%, and 9%, respectively. According to these proportions, the total scores of the 20 groups of human and machine translations are calculated according to the data collected from the questionnaires, and then the final data is imported into SPSS for Descriptive Statistics.

By comparing the statistics of these two sets of data, we can have a preliminary understanding of their differences and distribution. The maximum of Translation 1 is 4.45, and the minimum is 3.63, while Translation 2 is 4.20 and 3.55, and their average scores are 4.08 and 3.94, respectively. Therefore, it can be seen that the average score of the total scores of Translation 1 is higher. The conclusion can be drawn that the pragmatic value of human translation is higher than that of machine translation overall; however, the scores of Translation 2 have a smaller standard deviation, which indicates that the distribution of its scores is more concentrated. This is also consistent with the results of the preliminary analysis above.

This study focuses on the quality of human and machine translations in terms of the pragmatic realization of expressive discourse and further analyzes the significance and influence of the markedness theory, the cooperative principle, the relevance theory, and the politeness principle on pragmatic translation. After the correlation analysis, the Markedness theory and Cooperative Principle have more significant effects, followed by the relevance Theory, and the Politeness Principle is negligible. Therefore, in the evaluation of the pragmatic realization of translations, various aspects should be considered and analyzed, and the pragmatic differences between human and machine translation can be found out finally. However, this study also has some shortcomings and deficiencies, and the reliability of its results needs to be further studied in the future.

5. Case Analysis

Example 1. 首先，我对金砖新成员国领导人表示欢迎，感谢拉马福萨总统和南非政府为这次会晤所作的努力。当前形势下，金砖国家就巴以问题发出正义之声、和平之声，非常及时、非常必要。

Translation 1: Before I speak about the issue of our discussion, I **wish to extend a warm welcome to** leaders of new BRICS members and **express my thanks to** President Ramaphosa and the South African government for your efforts that have made our meeting possible. Given the current circumstances, it is very timely and very important that we meet and speak up for justice and for peace on the Palestinian-Israeli issue.

Translation 2: Firstly, I **extend a welcome to** the leaders of the new member countries of the BRICS. I **appreciate** President Ramaphosa and the South African government for their efforts in organizing this meeting. In the current situation, the BRICS nations speaking out on the Israel-Palestine issue with voices of justice and peace is very timely and essential.

First of all, the sentence uses the positive volitional mental verb “欢迎” and the adjective “感谢”, which mainly conveys the positive and upward attitude of the Chinese leaders towards the new BRICS members in terms of welcoming them warmly and making progress together. The sentence containing words directly conveying emotions is also categorized as marked discourse. Therefore, when translating into English, the translator needs to restore the markers. Although the phrases “wish to extend a warm welcome to” and “express my thanks to” used in Translation 1 are not as concise as “extend a welcome to” and “appreciate” in Translation 2, the

former is more in line with the original discourse markers in terms of restoring the emotion, therefore, more relevant and easier to understand. The addition of the polite word “warm” in Translation 1 also conveys Chinese people’s politeness and warmth, and shows the positive attitude of China towards cooperation, while Translation 2 is relatively simple and direct, with a slightly bland expression.

Example 2. 加沙地区的冲突已持续一个多月，造成大量平民伤亡和人道主义灾难，并出现扩大外溢趋势，中方深表关切。

Translation 1: The conflict in Gaza is raging on into its second month. China **is gravely concerned that** the conflict is causing enormous civilian casualties and a humanitarian disaster and tends to expand and spill over.

Translation 2: The conflict in the Gaza Strip has been ongoing for over a month, resulting in a significant number of civilian casualties and a humanitarian crisis. **There is a growing concern** from the Chinese side about the escalating spillover trends.

The use of the positive psychological verb “关切” in this example sentence, modified by “深表”, highlights the Chinese people's sympathy and concern for the casualties in Gaza, and its direct emotional description can be categorized as marked discourse. In translating this expression, both “gravely” in Translation 1 and “growing” in Translation 2 can deepen the emotion conveyed by “concern” to different degrees. However, in terms of relevance, “gravely” in Translation 1 fits in with the extreme concern intended to be expressed in the original sentence, thus closer to the markers used in the original sentence, while the word “growing” is a bit milder and does not show the original meaning properly. Meanwhile, the sentence pattern of “There be” is slightly ambiguous, and it is clearer and easier for readers to catch the relevant information by directly using the subject “China”. The direct and smooth expression of Translation 1 is also much closer to the expression habits of the target language, conveying a positive willingness to communicate and cooperate in the target context.

Example 3. 构建人类命运共同体，并不是推倒重来，也不是另起炉灶，而是推进国际关系民主化，推动全球治理朝着更加公正合理的方向发展。

Translation 1: This **does not mean** that the international system should be dismantled **or** started afresh. **Rather, it means** promoting greater democracy in international relations and making global governance more just and equitable.

Translation 2: Building a community with a shared future for humanity **does not mean** starting from scratch **or** pursuing isolation. **Instead, it involves** advancing the democratization of international relations and steering global governance towards a more just and equitable direction.

In this example, although the psychological vocabulary is not used directly, however, we can feel the underlying emotional attitude from the sentence pattern “并不是...也不是...而是...”, thus, it can be categorized as an unmarked sentence. This sentence expresses the real concept and purpose of a community with a shared future that China is pursuing. Translation 1 uses “mean” twice, which is similar to the Chinese character “是”, and restores the repetitive elements in Chinese, though not as diversified as translation 2’s “mean” and “involve”, Translation 1 is more in line with the original version and more relevant in this context. Since neither of the two translations contains marked emotional elements, they both conform to the requirement of unmarked discourse, achieving the pragmatic markedness equivalence principle. In terms of the cooperative principle, both translations do not contain misleading or misunderstanding elements, and use concise and clear expressions, each with “rather” and “instead”, maintaining consistency and clarity with the original text, so that the readers can understand easily, showing a good translation quality.

6. Conclusion

This study adopts a combination of quantitative and qualitative research methods, collects relevant data through questionnaires and the analytic hierarchy process, then imports them into SPSS for data analysis, and finally analyzes several specific case sentences. The research results show that there is a significant difference between human and machine translations in the pragmatic realization of expressive discourse, and the effects of the markedness theory and cooperation principle are higher than those of the relevance theory and politeness principle. Generally speaking, human translation is easier to understand and more acceptable for readers than machine translation. This study hopes to draw researchers' attention to and further develop the quantitative evaluation of pragmatic translation, which is of positive significance for future comparative studies of human and machine translations, and the results of this study will shed some light on the pragmatic translation of expressive discourse, to promote smooth communication between different languages and cultures. Given the results of the study, it is recommended that both human translators and artificial intelligence should try to maximize the restoration of discourse markers and pragmatic information in the translation process, especially in the translation of expressive discourse.

In addition, further research should be conducted to optimize the pragmatic realization of human and machine translation and improve the accuracy of machine translation to meet the needs of international communication and understanding. Through these efforts, more precise, accurate, and effective information transfer between different countries can be achieved. However, there are some shortcomings in this study, such as the reasons for the differences in human and machine translations that have not been analyzed in-depth, and the number of respondents is relatively small. In future research, the number and scope of samples can be further expanded; corpus research methods can be introduced to obtain more research materials; and the impact of certain specific pragmatic theories on pragmatic realization can be explored to further promote the development of pragmatic translation.

Acknowledgements

Natural Science Foundation.

References

- [1] Aihua, W. (2016). Semantic and Pragmatic Analysis of Expressives. *Foreign Language Research*, (6). (no pagination)
- [2] Bernasconi, Michele & Choirat, Christine & Seri, Raffaello. (2009). The Analytic Hierarchy Process and the Theory of Measurement. University of Venice "Ca' Foscari", Department of Economics, Working Papers. 56.
- [3] Dan, Han. (2021). The Speech Act of Diplomatic Refusal: A Construction Perspective. *Foreign Languages and Their Teaching*, (5), 37–46+148.
- [4] Guojin, H. (2005). *Pragmatic Markedness Theory and Application: A New Approach to Translation Evaluation* [M]. Sichuan University Press.
- [5] Hongru, L. (2003). The Speaker's Image in Utterances [D]. Heilongjiang University.
- [6] Jianxue, L. (2006). On Hypothetical Space Structuring and Its Characteristics in Performing Commissive Act. *Shandong Foreign Language Teaching*, (4), 27–32.
- [7] Jijia, Z., & Aitao, L. (2007). A Study of the Classification of Chinese Mental Verbs. *Journal of South China Normal University: Social Science Edition*, (2).
- [8] Liyan, L. (2011). *Research on Chinese Discourse Markers* [M]. Beijing: Beijing Language and Culture University Press.

- [9] Nida, E. A. (1999). *Language, Culture and Translating*[M]. Shanghai: Shanghai Foreign Language Education Press.
- [10] Searle, John R. (1979). *Expression and Meaning* [M]. Cambridge University Press.
- [11] Shenghuan, X. (1985). "Marked" and "Unmarked" in Language. *Shandong Foreign Language Teaching Journal*, (4), 1–10.
- [12] Shulin, Y. (2012). *Studies on Modern Chinese Discourse Markers* [M]. Beijing: China Social Sciences Press.
- [13] Sperber, D. & Wilson, D. (1995). *Relevance: Communication and Cognition*[M]. Oxford: Blackwell Publishing.
- [14] Thomas L. Saaty. (2005). Analytic Hierarchy Process. 15.
- [15] Xiaofan, F & Fanzhu, Hu. (2013). An Exploration of Relationship Between Promise and Command Speech Acts. *Journal of Shaanxi Normal University(Philosophy and Social Sciences Edition)*, 42(5), 79–83.
- [16] Yong, C. (2002). The Theory of Markedness in Linguistics Studies. *Foreign Language Research*, (6), 28–32.
- [17] Zhoumin, Y., Liangzi, L. & Chao J. (2022). Formulaicity and Rituality in Chinese Governmental Apology. [J] *Modern Foreign Languages*, 45(6), 756–766.
- [18] Ziran, H. (2015). *A New Introduction to Pragmatics* [M]. Beijing: Peking University Press.