

Research on the Translation of Ganpo Culture-loaded Words Based on Intelligent Algorithms

Xin Yu

Nanchang Business College of Jiangxi Agricultural University, Nanchang, China

Keywords: Intelligent Algorithms; Ganpo Culture; Load Word Translation

Abstract: The translation of culture-loaded words in Ganpo has always been a difficult problem in translation circles, and there has been a lack of scientific and normative reference in the selection of translation methods and strategies. In order to promote Ganpo culture to the world, the author should try his best to use intelligent algorithm in translation of Ganpo culture-loaded words. It also makes an analysis of the cultural factors affecting the translation of culture-loaded words. The research shows that the main contradictions in the choice of translation techniques of culture-loaded words must be grasped in order to get the translation of culture-loaded words out of the labyrinth of "rule of man" and onto the track of "rule of law". At the same time, it is pointed out that the translator's cultural background knowledge plays an important role in the accurate translation of such words.

1. Introduction

With the deepening of foreign exchanges, the translation of Chinese culturally loaded words has attracted more and more attention [1]. It not only requires students to have a strong comprehensive language ability, but also requires cross-cultural communication skills, especially a certain understanding of Chinese traditional culture and characteristic culture [2]. Translation is not easy, in large part because language carries cultural information on the one hand, and is subject to the culture it carries on the other hand [3]. This shows the importance of retaining the communicator's own culture in intercultural communication, and both parties must respect each other's language and culture [4]. At the same time, the translation theory of the twentieth century focused on the techniques of character conversion, only in the middle of the twentieth century. It is only in this way that cultural factors are brought into the scope of translation studies [5]. Traditional translation theories are vague and ineffective. Most of them are based on experience. Although they occasionally have penetrating insights, it is difficult to form an independent theoretical system. Some scholars have said that "for a truly successful translation, it is even more important to be familiar with two cultures than to master two languages, because words are meaningful only when they are used in a particular culture" [6]. Modern western translators creatively use linguistics as the theoretical basis of translation, borrow linguistic concepts and terminology, and study translation through the study of language, forming the linguistic theory of translation [7].

Translatology is an interdisciplinary study. It is mainly divided into three parts: philosophical thinking system, linguistic symbolic system and social and cultural system. Among them, linguistics is the most prominent one. It is a powerful tool for translatology to explain and analyze the translation process [8]. In the translation of loaded words, translators inevitably encounter a lot of culture-loaded words, including two kinds of words which are unique in English culture and are vacant in Chinese culture, and those which have different cultural connotations in English and Chinese. Their correct translation depends on the translator's accurate understanding and grasp of cultural background knowledge [9]. With the further development of global integration and the increasing frequency of cultural exchanges among different ethnic groups, the influence of cultural differences on translation has become more and more obvious. The translation industry has become more and more concerned about cultural factors. However, due to the imbalance of the overall

national strength of countries in the world today, various cultures are actually unequal in international exchanges, some cultures are in a strong position, and some are in a weak position [10]. Different ethnic groups have different or different differences in their culture due to differences in national history, social systems, lifestyles and geographical environment. Foreign journalists attending the conference cannot truly understand China's national conditions and thus accurately judge the true meaning of the word.

2. Methodology

Culturally loaded words are words that carry certain cultural information, including words, phrases, idioms, idioms, and allusions that mark unique things in a culture. The English translation of culturally loaded words is the focus and difficulty of the English translation of "Treatise on Febrile Diseases". Whether the treatment method is appropriate or not will affect the translation quality of the entire text. Cultural-specific terms refer to words that contain rich socio-cultural meanings in terms of original meaning or conceptual meaning, involving human history, religious beliefs, and social customs. Eco-translatology believes that the essence of translation is "the translator's choice to adapt to the translation of the ecological environment", which is a process in which the translator is the center and the translator adapts and chooses. Therefore, the translator must first convey the accurate information of the source language, and then seek the equivalent words of the word in the target language. In many cases, how to deal with the culture in the language often becomes a headache for translators in the process of translation, which to a large extent becomes the key to the success of the translation. Although China's international status has risen with the improvement of China's economic strength, it is still in a weak position in international exchanges compared with the cultures of western developed countries.

As a global search algorithm, intelligent algorithm can effectively avoid local optimum. When the length of the switching path decreases, the following conditions are satisfied:

$$\ln\left(\frac{K}{(Nt)} - 1\right) = a - bt \quad (1)$$

Pheromone global update: only pheromones on the best path are updated according to the following formula:

$$\sigma = \sigma_o (\Phi - \Phi_c)^t, \text{ for } \Phi > \Phi_c \quad (2)$$

In order to verify the performance of the intelligent algorithm based on pheromone diffusion, this paper chooses the intelligent algorithm and the basic ACA algorithm to compare the eil51 problem.

Table 1. Basic ACA algorithm, compared with the experimental results of the intelligent algorithm in this paper

Project	Intelligent algorithm		Basic ACA algorithm	
Index	Eil51	St70	Eil51	St70
Best solution	437	694	465	732
Worst solution	462	715	484	745

Thoughts and expositions on translation have emerged with the emergence of translation activities. Thus, contextual factors play an important role in communication. In his view, semantics is the sum of language and non-language, and context determines meaning. In addition, there are numerous articles on culture and translation scattered in other publications such as China Translation. In addition, the global expansion of Western movies seems inevitable, but few Chinese movies can move to Western screens. Some scholars point out that the translator should not only be a real cultural person, but also constantly compare the two cultures, because translation is a dynamic process. The biggest and most direct difficulty that the translator faces in translation is the difference between the two cultures. Teachers should guide systematic explanations and case analysis of

demographic skills and strategies in a timely manner in the classroom, using factual illustrations to explain to students where and how to properly translate, and a large number of intensive exercises of similar corpus are also necessary. Load word translation studies propose a "three-dimensional transformation" method, which is to transform the three-dimensional adaptive selection of language, communication and culture. By analyzing the relationship between translation strategies and cultural load words, and exploring the influence of different meaning correspondences on translation strategies, we can clearly translate the effects of strategies and solve problems in translation.

To further validate the algorithm, the algorithm is used to solve st70, and the intelligent algorithm and the basic ACA algorithm are still compared. The result is shown in Figure 1.

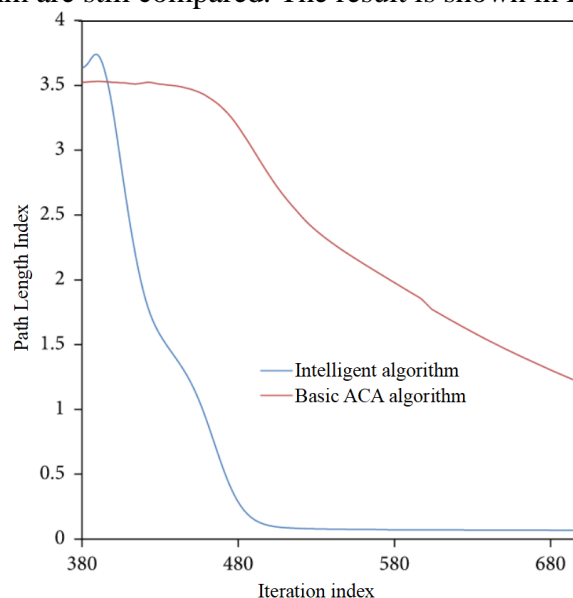


Fig. 1. Optimal deconvolution graph of ST70

The reform of the four-level translation questions of College English 4th and 6th grades and English majors puts forward higher requirements for students' Chinese-English translation ability. The text contains historical allusions or cultural backgrounds with Chinese characteristics, so in the process of translation, we must pay attention to the communication of language and culture to improve cultural sensitivity. Deep people understand the background of the times, folk customs, cultural traditions and value orientation. Both Chinese modern literary works and today's social life contain a large number of vocabulary reflecting traditional Chinese culture. For example, there are far more original English books and their Chinese translations published in China than Chinese books or their foreign language translations published abroad. When discussing specific translation techniques, the relevant articles have made useful explorations, which can be summed up as follows: literal translation, word addition, substitution, free translation, or generalization of domestication and foreignization. We call these two kinds of words and expressions with special cultural color as culture-loaded words, which are the products of different social and cultural contexts. Since there is no equivalent of the word in Chinese culture, it is difficult for the target readers to understand the specific meaning of the word without definitions, and even less to understand the relevant knowledge of the medical security system reflected by the word in British and American cultures.

In order to verify the performance of the intelligent algorithm, three TSP problems, pcb442, pr1002 and fl1400, are experimented with the intelligent algorithm to solve the optimal path. The parameter settings are shown in Table 2.

Table 2. Parameter setting of intelligent algorithms for different tsp problems

Parameter	α	β	ρ
Pcb442	1.0	3.0	0.4
Pcb002	1.0	3.0	0.6
Fl1400	1.0	3.0	0.6

Cognitive psychology and artificial intelligence studies have shown that knowledge is stored in chunks in human memory. As one of the four classics of traditional Chinese medicine, there are a large number of culture-loaded words in Treatise on Febrile Diseases, and these culture-loaded words are often important words reflecting their unique understanding of human physiology and pathology. Thematic meaning refers to pragmatic concepts and is not discussed in this paper. Rational meaning is the objective meaning of vocabulary, while the other five elements constitute the cultural (associative) meaning of vocabulary. In recent years, experts and scholars have mainly explored the strategies of translating culture-loaded words into English based on the theories of interpretation, functional teleology, cultural schema theory and memetics, and some have explored the choice of domestication and Foreignization in the process of translation. The speaker expressed his hopes for consolidating and strengthening cross-strait relations, expressing Premier Wen's personal and mainland people's friendly attitude towards Taiwan compatriots, hoping for cross-strait peace and the early realization of the good wishes for cross-strait reunification. Each language is a product of the development of a country and a nation's culture. It has its long history and rich cultural connotations. It can be seen that in intercultural communication, Chinese culture and Western culture are still difficult to sit on the same level.

In order to overcome the shortcomings of intelligent algorithm search time is too long, and it is easy to be trapped in local optimum, the improved algorithm is embedded in the search process. The global optimization problem (taking the maximization problem as an example) is defined as follows:

$$V=b+\frac{\Re T}{P+a/V(V+b)} \quad (3)$$

According to the characteristics of continuous function optimization problem, in order to ensure that the algorithm moves to the neighborhood of Q with larger value of other objective functions according to probability, its transition probability is as follows:

$$Q' = \int_0^{\infty} q \tilde{I}(q) dq \quad (4)$$

In order to verify the effectiveness of intelligent algorithm and compare the optimization performance of basic ACO algorithm and intelligent algorithm, the following test functions are selected to simulate the algorithm in this section:

$$W = C_1(I_1 - 3) + C_2(I_2 - 3) \quad (5)$$

3. Result Analysis and Discussion

In addition, culture is an important part of a country's soft power, but the power of soft power comes from its diffusivity. Only when a culture is widely spread, can soft power produce more and more powerful power. Culture-loaded words belong to the common core part of vocabulary. They are numerous and frequently used. Without a basic principle in translation, many translators are bound to be at a loss between several methods, inevitably resulting in the failure of cultural communication or the loss of basic meaning due to improper selection of skills. How to translate it into another culture of meaning or expression vacancy has always been a controversial topic in translation circles. In short, when translating words that are unique in this English culture and lacking in Chinese culture, it is necessary to supplement certain cultural information so that the general reader can understand the cultural connotation carried by the word and play a business communication and absorb foreign culture. The role. Culturally loaded words can be divided into five categories: ecological, material, social, religious, and linguistic and cultural. It was not until the 1970s that people realized that translation not only expresses the meaning of another language in one language, but the real translation should be an intercultural communication based on language conversion.

The process of translation is the process of translator's constant choice of wording, and no translator exists without cultural background. Every translator's mind is deeply branded with the cultural brand of the society in which he lives. As a product of a particular cultural context, the basic meaning of culture-loaded words is relatively stable. The purposiveness of translation is presented through the history of translation at a macro level. At a micro level, the determination of the source language works, the selection of translation methods (full translation, excerpted translation or translation) and the application of translation techniques are all marked by purposiveness. This post-colonial translation theory regards translation as a new tool for cultural imperialism to expand globally. Therefore, when translating such vocabulary, it is necessary to change the form, express it clearly in the translation or supplement the information related to the connotation of the original. Communicative translation focuses on the target readers of the target language, trying to make the target readers accept the content of the original text without leaving any doubts and ignorance. Semantic translation, based on the original author, tries to convey the original information. Sometimes semantic translation has a task of interpretation. Therefore, how our translators inherit and promote national culture is a problem that we must face and urgently solve.

Intelligent algorithm, evolutionary strategy and evolutionary programming are three typical evolutionary algorithms that use the evolutionary process of organisms in nature as the reference object of adaptive global optimization search process, so there is a great similarity between them. On the other hand, these three algorithms simulate the evolution process of organisms from different perspectives. They are developed according to different evolutionary backgrounds and mechanisms, so there are some differences among them. The main characteristics of these evolutionary algorithms are summarized and compared in Table 3.

Table 3. Comparison of main characteristics of intelligent algorithms, evolutionary strategies and evolutionary planning

Comparison items	Intelligent algorithm	Evolutionary strategy	Evolutionary programming
Method of parameter adjustment	Nothing	Standard deviation, covariance	Variance
Fitness evaluation method	Transform the value of the objective function	Direct use of objective function values	Transform Daily Scale Function Value
Individual mutation operator	Auxiliary Search Method	Main Search Method	Unique Search Method
Individual recombination operator	Main search methods	Auxiliary Search Method	No use
Selective replication operator	Probabilistic	Certain or not preserved	Probabilistic

The Chinese cultural load word is the language embodiment of Chinese culture, which has rational meaning and cultural significance, and the core is the cultural significance of the load. In the process of cross-cultural communication, translators should try their best to accurately convey the essence of Chinese traditional culture and characteristic culture, so that the world can understand China and make China go to the world. The process of translating the appropriate and appropriate language and cultural information by the translator is the process of spreading culture and integrating culture. Under the context of increasing the macro-cultural strategy of Chinese culture's external export, studying the translation of these culturally-loaded vocabularies can not only promote the exchange and development of literary works between different ethnic groups. Moreover, it can better disseminate the splendid culture of the Chinese nation to the outside world and deepen the understanding of our country by people all over the world. Therefore, how to deal with Culturally-loaded words has become a very practical research topic in the field of C-E translation. Meanwhile, translation, as a medium of intercultural communication, plays an important role in the cultural soft power of a nation and a country. It not only helps to enhance the cultural soft power, but also reflects

and displays the cultural soft power. Faced with such a complex purpose, we must grasp it from the perspective of dialectics, grasp the main aspects of the main contradictions, in order to recognize and grasp the essence of things in the complexity, and successfully complete the task of translation.

Culture-loaded words differ from non-culture-loaded words in that they contain not only conceptual meaning but also cultural meaning, that is, each culture-loaded word is a complex of conceptual meaning and cultural meaning. Whatever method is adopted, there is no doubt that its translation is possible. The key is to choose which method is more ideal. As the translator and the original author have their own cultural backgrounds, cultural differences, like the differences in language and writing, are likely to become obstacles to translation. That is to say, how the translator interprets the information of the original work and how to interpret it will be constrained by his own cultural background knowledge. This kind of storage is not simply listing and stacking, but forming an orderly knowledge system around different things and situations. Translation should not be confined to the description of the original text, but to the functional equivalence of the text in the target culture. The focus of cultural load words translation lies in the conveyance of rational meaning and cultural meaning. The difficulty is the incomplete correspondence between Chinese and English vocabulary, that is, the missing, conflict and corresponding information is missing. The core is the different semantic meaning relationship. In the process of translation, there will be a large number of culturally loaded words in the fields of politics, economy, trade, tourism, humanistic natural landscape, literature and art.

Compared with the traditional BCC algorithm, the classification recognition rate of this algorithm has been significantly improved. From Table 4, it can be seen that the convergence speed of this algorithm has been greatly improved compared with the BCC algorithm because of the combination of the steepest descent algorithm.

Table 4. Experimental results of intelligent algorithm and bcc algorithm in this paper

Algorithm	Number of Hidden Layer Units	Overall Output Error	Average recognition rate	Average number of iterations	Average training time
BCC	13	7.5	93.54%	84	73
Intelligent algorithm	13	6.4	96.25%	43	51

Ancient Chinese and modern literary works contain historical wisdom and the most valuable form of language expression in national culture. On the cultural dimension, translators should first understand and be familiar with Chinese culture, including traditional festivals, folk customs, diet, handicrafts, etc. Then they can accurately convey the meaning to the target audience, so as to carry forward Chinese culture at a higher level. The core of culture-loaded words translation is cultural meaning. From this perspective, interpretation is an ideal choice. The so-called cultural load words, also known as vocabulary vacancies, that is, the cultural information carried by the original vocabulary does not have a corresponding language in the translated language. Usually culturally loaded words can be processed by literal translation or literal translation, transliteration or transliteration, translation, substitution, ellipsis and extension. Differences in text types and the different orientations of domestication and foreignization determine the difference in translation. Therefore, in different language cultures, due to the differences in cultural contexts such as geography and history, even the same meaning may have distinct expressions, and some meanings are unique to a certain language culture, although its textual carrier is also Unique, but there will be vacancies in another cultural context.

Peter Newmark, the author of communicative translation and semantic translation, is a contemporary British translator and translation theorist. As mentioned earlier, Chinese culture is still weak in comparison with Western culture in international exchanges. The conceptual meaning is the carrier of cultural significance, and it is the root of the singularity of culturally loaded words. Therefore, the loss of conceptual meaning, the cultural significance is less lively and more dry. Only the same change in the same number of identical contexts can cause subtle changes in cultural

context. The success or failure of translation is largely influenced by cultural patterns. On the one hand, the translator should communicate with the original author as a reader, correctly activate the original language culture schema, and accurately understand the original text. On the other hand, the translator has to act as an author to communicate with the target reader. The translation strategies of Chinese culture load words include transliteration, free translation, literal translation, borrowing and interpretation, and different translation strategies complete different translation functions. In addition to trying to find the equivalent translation in the target language, the translator should also pay attention to distinguishing the phenomenon of "fake friends" in English, just translate the Chinese characteristics of Chinese English, and finally achieve successful communication.

4. Conclusions

The differences in cultural meanings lead to the inevitably incomplete coincidence of Chinese and English culture-loaded words, which is manifested in the incomplete overlap of lexical rational meaning and cultural meaning. At the same time, the particularity and complexity of cultural factors determine that the translation of specific culture-loaded words must adopt various specific translation methods flexibly, so as to achieve functional equivalence of culture-loaded words in the target culture as far as possible. In translation teaching, teachers should cultivate students' ability to translate culture-loaded words purposefully and pertinently, so as to achieve successful communication in the process of cross-cultural communication, and disseminate and promote Chinese culture. The accuracy of translation can only be guaranteed by a deep understanding of the culture of the source language, especially the understanding of the culture-loaded words in the dialogues, and the application of skilled interpreting skills. When there is a huge cultural gap between the source language and the target language, it is difficult to fully correspond to the original text and the original text. Intercultural translation can only be as close as possible to the original text. Once the main purpose of the translation is clear, the translator has grasped the main contradictions among many contradictions. All in all, translation is, after all, an emerging specialized discipline that does not require the adoption of all the other disciplines. What it needs is to truly learn from the strengths of the family and use it to constantly enrich and develop its own theoretical system. Therefore, translators need to constantly learn and explore the cultural meanings carried by culturally loaded words in order to bring more accurate and complete translations to the target audience.

Acknowledgment

Jiangxi University Humanities and Social Science Research Project, a Study on English Translation of Culture-loaded Words of Jiangxi Province from the Perspective of Eco-Translatology, YY17209. Visiting Scholar of Fudan University (from Sep. 2018 to July 2019).

References

- [1] Jiang J. [English Translation Study on Culture-loaded Words in Shanghanlun under Culture Translation Theory]. [J]. Zhongguo Zhong xi yi jie he za zhi Zhongguo Zhongxiyi jiehe zazhi = Chinese journal of integrated traditional and Western medicine / Zhongguo Zhong xi yi jie he xue hui, Zhongguo Zhong yi yan jiu yuan zhu ban, vol. 35(7), pp. 877-881, 2015.
- [2] Hamed Shah-Hosseini. Intelligent water drops algorithm [J]. International Journal of Intelligent Computing & Cybernetics, vol. 1(2), pp. 193-212, 2013.
- [3] Hooshmand R A, Amooshahi H, Parastegari M. A hybrid intelligent algorithm based short-term load forecasting approach [J]. International Journal of Electrical Power & Energy Systems, vol. 45(1), pp. 313-324, 2013.
- [4] Latham A, Crockett K, Mclean D. An adaptation algorithm for an intelligent natural language tutoring system [J]. Computers & Education, vol. 71, pp. 97-110, 2014.

- [5] Dariane A B, Sarani S. Application of Intelligent Water Drops Algorithm in Reservoir Operation [J]. *Water Resources Management*, vol. 27(14), pp. 4827-4843, 2013.
- [6] Azadeh A, Rouzbahman M, Saberi M, et al. Improved prediction of mental workload versus HSE and ergonomics factors by an adaptive intelligent algorithm [J]. *Safety Science*, vol. 58(Complete), pp. 59-75, 2013.
- [7] Azadeh A, Saberi M, Rouzbahman M, et al. An intelligent algorithm for performance evaluation of job stress and HSE factors in petrochemical plants with noise and uncertainty [J]. *Journal of Loss Prevention in the Process Industries*, vol. 26(1), pp. 140-152, 2013.
- [8] Nancharaiah B, Chandra Mohan B. The performance of a hybrid routing intelligent algorithm in a mobile ad hoc network [J]. *Computers & Electrical Engineering*, vol. 40(4), pp. 1255-1264, 2014.
- [9] Li K, Leung Y T, Cheng B Y. An agent-based intelligent algorithm for uniform machine scheduling to minimize total completion time [J]. *Applied Soft Computing*, vol. 25, pp. 277-284, 2014.
- [10] Tao F. Configurable intelligent optimization algorithm. *Design and practice in manufacturing* [J]. *Springer*, vol. 52(6), pp. 587-8, 2014.