



Migration Redundancy in the Abstracts of Scientific Papers

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Abstract

With the enhancement of China's innovation ability and the internationalization of science and technology research, the C-E translation of abstracts of scientific papers is facing more and more challenges. As an important medium for globalization of scientific and technological innovation, abstracts of scientific papers should conform to habits of native English speakers. However, limited by English proficiency of writers, there is always rigid literal translation in the process of translation, leading to redundancy of the mother tongue migration mechanism. Based on the classification of migration redundancy and related research of the translation of scientific papers by Pinkhan, *Research of Environmental Sciences* was discussed and analyzed from the perspective of migration redundancy and then the author put forward the modified suggestion. The author also used COCA to judge whether the expression in the sentence is migration redundancy by the MI values obtained in the above cases. Further exploration of translation strategies was called on.

Keywords

Migration redundancy, scientific papers, abstract, corpus, analyze, strategy

1. Introduction

With the enhancement of China's innovation ability and the internationalization of science and technology research, the C-E translation of abstracts of scientific papers is facing more and more challenges. Neuner (2008) proposed that foreign high-level journals may decide whether to accept manuscripts only by reading abstracts of literatures. It can be seen that high-quality abstract translation can improve the retrieval and citation rate of papers, and expand the influence of Chinese scientific papers. However, due to the English level of the authors, the translation of scientific papers in our country is unsatisfactory. Some authors even use translation software such as Google. Thus, most of the translated abstracts are Chinglish.

As for the migration redundancy in Chinese-English translation, Pinkham (2000) proposes that word redundancy is the hallmark of Chinglish. In the process of Chinese-English translation, semantic repetition happens frequently due to the language habits of Chinese native speakers, which affects the communication effect between Chinese and English native speakers. Pinkham (2000) classifies migration redundancy in Chinese-English translation into five types: 1) unnecessary nouns and verbs; 2) unnecessary modifiers; 3) redundant twins; 4) saying the same thing twice; 5) repeated reference to the same thing.

This paper takes Chinese environmental journals as an example, from the sentence level, analyzes the migration redundancy example of *Research of Environmental Sciences*, and puts forward corresponding suggestions for modification, in order to provide reference for the authors and editors of domestic scientific journals.

2. Literature Review

As Chinese and English are entirely different languages, translators whose mother tongue are Chinese are often influenced by their own language background and use Chinese expressions in translation, which produces redundant information and leads to Chinglish. In C-E translation of abstracts, the author does not know the language background of English and is accustomed to using Chinese expressions.

Yin Hongshan et al. (2006) proposed that migration redundancy can be seen in nouns, verbs, adjectives and adverbs. Wu Guangjun (2010) discussed the migration redundancy in the English version of *Report on the Work of the Government*, analyzed typical sentences in the report from the sentence and discourse level, and proposed corresponding measures. Wang Pingxing (2011) thought about the problem of migration redundancy in *Report on the Work of the Government* mentioned by Wu Guangjun and made a further analysis. Zhuang Guowei (2013) also questioned Wu. He conducted an empirical test of the migration redundancy mentioned by Wu through the comparison of authoritative dictionary definition, Google Dictionary example sentence library, WTO agreement documents and authoritative media such as *New York Times*.

Sheng Li (2007) proposed that translators should not only compress the migration redundancy, but also decompress some information that causes cultural fault. Dong Shuai et al. (2020) analyzed the migration redundancy in the translation of political and economic texts and used corpora to judge migration redundancy. Zheng Minghua (2015), on the basis of practice, proposed summarization, deletion and replacement, and ellipsis to solve the migration redundancy in C-E simultaneous interpretation. Zhang Xiaoli (2017) proposed corresponding translation strategies for migration redundancy in the English translation of Chinese popular science texts.

With the enhancement of China's innovation ability and the internationalization of scientific research, the C-E translation of scientific paper abstracts is facing more and more challenges.

Liu Yuanfu (2003) summarized some common skills in C-E translation of scientific paper abstracts, including how to select words, how to collocate words, which words to save, and how to break sentences and combine sentences. Yang Ning et al. (2010) followed the functional translation theory and discussed the English translation skills of abstract from three aspects: vocabulary, grammar and discourse. Li Hongjuan (2012) analyzed the C-E translation of scientific paper abstracts based on context relation adaptation and language structure adaptation. Zhao Haiyan (2015) proposed that the abstract of scientific papers should comply with the principles of standardization, readability and accuracy to meet the purpose of communication based on Skopos theory.

It can be seen that although the C-E translation of scientific paper abstracts is very important, there are still a lot of problems to be solved. At the same time, few studies have studied the problems in the C-E translation of scientific paper abstracts from the perspective of migration redundancy. Therefore, this study focuses on the migration redundancy of C-E translation of scientific paper abstracts, hoping to find measures to improve the quality of C-E translation of scientific paper abstracts.

3. Analysis and Strategy

Chen Min et al. (2015) pointed out that unnecessary word in scientific paper abstracts mainly exists in the situation mentioned by Pinkham: 1) unnecessary nouns and verbs; 2) unnecessary modifiers. Therefore, this paper mainly analyzes these two kinds of redundancy in the abstract of scientific papers.

3.1 Unnecessary Nouns

Example 1:

jié guǒ biǎo míng: zài bèi jīn g tiān qì hé sī chén tiān qì xià , 01010~ 01 020, 01 021~ 01 100, 01101~ 11000, 11001~ 21500 Lm děng lí jìng duàn de qì róng jiāo shù nóng dù chā bié jiào dà.

The research results show that dust aerosol number concentrations of 01010-01020, 01021-01100 01101-11000 and 11 001-21500 Lm particles are largely different in dusty weather.

Although "diào chá jié guǒ" is often said in Chinese, in English, the meaning of research and results overlap. Here, research belongs to unnecessary information and should be deleted.

Modified translation: The results show that dust aerosol number concentrations of 01010-01020, 01021-01100 01101-11000 and 11 001-21500 Lm particles are largely different in dusty weather.

Example 2:

yǔ huí guī mó xíng hé zhī chēng xiàng liàng jī děng mó xíng xiāng bǐ, MLP mó xíng jù yǒu nǐ hé yǒu dù gāo, wù chā xiǎo děng yǒu diǎn.

Compared with regression models and support vector machines, the results of MLP showed higher model fitness and

smaller error.

The underlined part makes the mistake as that in example 1. Results are redundant information and should be deleted.

Modified translation: Compared with regression models and support vector machines, MLP showed higher model fitness and smaller error.

3.2 Unnecessary Verbs

Example 3:

wéi liǎo jiě mù qián guó nèi réng zài yùn xíng shēng chǎn de yuán shēng gōng shēng chǎn qǐ yè gè pái wū jié diǎn qì tài Hg pái fàng xiàn zhuàng yí jí duì zhōu wéi huán jìng jiè zhì de yǐng xiǎng, xuǎn zé yì jiā diǎn xíng qǐ yè jìn xíng le xiàn chǎng jiān cè yán jiū.

The gaseous mercury emissions from each procedure of a typical primary mercury producer were characterized. On-site monitoring was carried out in December 2012.

In the original text, the underlined part of the word "jin xíng" belongs to functional verbs. This kind of verbs usually has no practical meaning, just to connect the abstract nouns that appear later. Although this kind of verbs often appears in Chinese, in English practice, it delays the transmission of the main information. This sentence can be translated by deleting the functional verb and converting the abstract noun into a verb.

Modified translation: The gaseous mercury emissions from each procedure of a typical primary mercury producer were characterized. A typical enterprise was monitored on site in December 2012.

3.3 Unnecessary Modifiers

Example 4:

yīn cǐ zhūn què xuǎn zé pái fàng biāo zhǔn xiǎn dé yǒu wéi zhòng yào.

It is especially important to select the emission standards accurately.

Wang Yuen (1993) believed that modifiers help to emphasize the subject, but unnecessary modifiers may also interfere with it. In English, too many modifiers can weaken the words. In order to simplify the translation, a simple adjective "essential" can be used to replace "especially important" in the underlined sentences, so unnecessary modifiers should be deleted.

Modified translation: It is essential to select the emission standards accurately.

4. Judgment of Migration Redundancy by Corpus

Although semantic repetition is the main form of redundancy, not all repetition can be considered as migration redundancy. Whether the words in the translation belong to the "migration redundancy" depends on whether such collocation exists in English. If this collocation is a language habit existing in English-speaking countries, it cannot be counted as "migration redundancy" (Wang Pingxing, 2011).

Corpora are important tool for language research, which enables English learners to learn English idioms. If two words are searched in the corpus, and the distance between two words is short, they may be related.

The Corpus of Contemporary American English (COCA) selected in this paper is the latest contemporary English corpus in the United States. The corpus currently contains a total of 1 billion words from 1990 to 2019, covering eight fields including spoken English, novels, magazines, newspapers, academic journals, TV and film subtitles, blogs and web pages.

Using COCA corpus, this paper will analyze the redundant words in Example 1, Example 3, Example 4. In Example 2, the results of MLP, the collocation word MLP of results is not typical, so the analysis is not carried out.

Select "collates" in the beginning interface, and select "MAGAZINE", "NEWSPAPER" and "ACADEMIC" in the option of "sections". Node words of statistical words are verbs, and the second word in the modifiers. According to Krishnamurthy (1987), "meaningful collocation words refer to words whose occurrence frequency is much higher within the range of five words on both sides of the studied word than the expected occurrence frequency based on uniform distribution", so the left and right span is set as 5 respectively in COCA corpus.

MI (Mutual Information Score) refers to the degree of influence of one word on the other one (Deng Yaochen, 2003). The larger the MI value, the stronger the attraction of node word to the other word, indicating that there is indeed a collocation relationship between the two words. According to Hunston (2002), lexical items with MI value greater than or equal to 3 can be identified as "important collocation words" of the central word, while those with MI value less than 3 can be identified as "general collocation words".

Table 1. Frequency records of migration redundancy in the corpus

Example	Migration redundant node words (x)/redundant collocation (y)	Frequency of node words f(x)	Occurrence frequency f(y) of redundant collocation	Co-occurrence frequency f(x,y)	MI value
1	results/research	99505	182678	1806	1.883
3	carry out/ monitoring	3928	13214	7	2.325
4	important/ especially	1467339	81908	1701	-0.928

It can be seen from Table 1 that MI values obtained in the above three cases are all less than 3, so it can be judged that they all belong to migration redundancy.

Although based on the analysis of word meaning, we can roughly judge whether it is migration redundancy or not. However, Pinkham (2000) also pointed out that due to native speakers' negligence or pursuit of rhythm, some words overlap. When the MI value obtained by the corpus method is greater than 3, it can be determined that the migration redundancy is accepted by native English speakers. Therefore, when determining migration redundancy, first analyzing and then judging by corpus should be adopted to avoid misjudgment.

5. Summary

Translation, as a process of bilingual conversion, is naturally affected by the transfer of mother tongue. For native English speakers, the redundancy generated by these transfers will cause discomfort in reading. However, for translators, due to the influence of their own transfer mechanism, they are already accustomed to such expressions in line with the habits of Chinese mother tongue. In the translation process, the translator should consider whether the problem of migration redundancy occurs from the perspective of semantic repetition, and determine the redundancy through the corpus method, so as to make the final translation conform to the language habits of English speakers and improve the translation quality.

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