Field Composition and Development Trend of Research Hotspots of Translation Technology in China—Based on Co-word Visualization Analysis of Relevant Academic Journals from CNKI Published from 1999 to 2017[*]

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Abstract—With the rapid development of computer technology and deep integration of disciplines, translation technology has gradually become an important research direction and a new focus of translation studies. In order to reveal the present situation of research on translation technology, we take the academic journals on translation technology from CNKI published between 1999 and 2017 as our data sample for analysis. The results show that the main research hotspots of translation technology cover four areas, i.e. computer-aided translation, human-computer interaction, translation technology teaching and talent training, as well as terminologies of the field. Through analysis of the current situation and existing problems in the above mentioned areas, some thoughts and prospects are put forward to provide guidance and illumination to scholars in this research field and promote further and deeper studies into the subject.

Index Terms—translation technology, research hotspots, co-word visualization, problems and prospects

I. INTRODUCTION

Globalization, informationization, technology, localization, professionalism, projectization and other characteristics of the time have gradually become the labels and features of modern translation, which lead to tremendous changes in many aspects of translation. Machine translation and translation technology are the important factors that bring about these changes (Fu, 2015). It has become necessary to learn and master translation technology in the new era of the 21st Century, and technology is the tool that translators should rely on in their work. Consequently, relevant researches increase and at present, the number of research papers in this field has reached several hundred. We try to do word frequency statistics and analysis of articles on translation technology published from 1999 to 2017 in CNKI database, so as to observe the current situation and development trend of this research field, and provide reference for further and deeper studies on translation technology.

II. DATA SOURCES AND METHODS

A. Sources of Data

The research data was selected from the CNKI Journal Network, including academic papers published between 1999 to April 2017. We resort to advanced search methods to do the retrieval. We set the theme of the search as "keyword 'translation technology' including 'translation tools', or article entitled 'translation technology' including 'computer-aided translation'", and we got a total of 938 relevant articles. In order to ensure the effectiveness and representativeness of the sample for our study, further screening was done on the basis of the literature obtained from the preliminary search: we retained articles on English translation technology in social science, computer technology for translation technology systems, education and engineering, deleted 638 articles of irrelevant content, with no keywords, repeatedly published, or on career guidance and industrial policy in natural science that do not meet the standards of our research purpose, and finally selected 300 valid articles as the sample for this study.

B. Tools and Methods

The main tools used in this study are the Bicomb co-word analysis software system and the SPSS19.0 statistical software. The specific research procedures are as follows: Firstly, the key words of the 300 valid documents selected for this study are extracted by using the Bicomb text-mining system software, and the year, journal name, authors, units and keywords of the literature are obtained. Secondly, we extract relevant statistic data for further study, including the

authors' work units, number of articles published in the journals and high-frequency keywords. Then, we apply the co-word analysis function of the Bicomb software to derive the co-occurrence matrix and similarity matrix of the high-frequency keywords. Finally, the word matrix is introduced into the SPSS19.0 software, and the clustering tree is obtained by system clustering.

III. DATA PROCESSING AND RESULT ANALYSIS

To find relevant literature on the topics concerned, we use the Bicomb software to do the survey, and get 300 valid journal articles as our research sample. In the following, we will do detailed analysis of the 300 published papers in terms of authors' work units, distribution of journals, etc.

A. Research Overview and Keyword Confirmation

1. Year distribution of the literature

The year distribution of the literature is shown in table 1.

TABLE 1
LITERATURE ON TRANSLATION TECHNOLOGY FROM 1999 TO 2017

Number	Year	Article Number	Percentage(%)
1	2017	17	5.5738
2	2016	54	17.7049
3	2015	37	12.1311
4	2014	35	11.4754
5	2013	31	10.1639
6	2012	17	5.5738
7	2011	12	3.9344
8	2010	16	5.2459
9	2009	8	2.6230
10	2008	14	4.5902
11	2007	12	3.9344
12	2006	5	1.6393
13	2005	6	1.9672
14	2004	13	4.2623
15	2003	3	0.9836
16	2002	4	1.3115
17	2001	6	1.9672
18	2000	1	0.3279
19	1999	9	2.9508
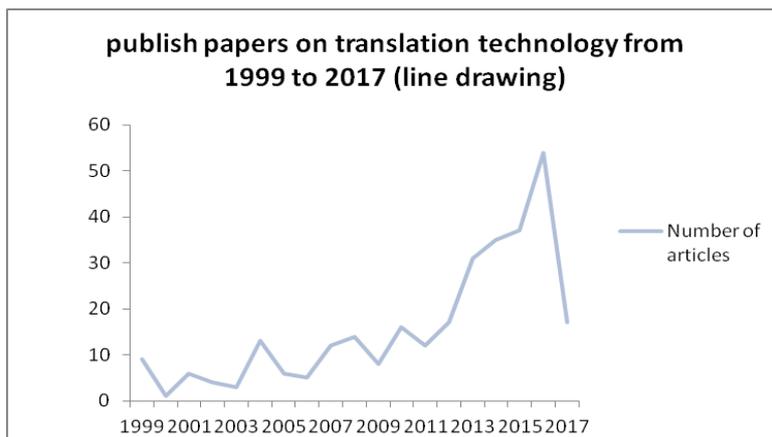
The publication volume of journals can indicate the theoretical level and development situation of academic research in the field. In order to evaluate the research situation of translation technology more directly, and predict the trend of its future development, the curve graph showing the publication volume of the corresponding literature is drawn. It can be seen from the curve that the volume of published literature on translation technology is generally on the rise. Referring to the line chart, we see the amount of the published literature fluctuates slightly from 1999 to 2012, but a sharp rise has manifested since 2012. In 2016 it maintains a high momentum of growth, but in 2017 there signals a drop, which is actually due to insufficiency of data collection. But we can predict that the amount of literature on translation technology in 2017 as a whole will still be increasing. We also see that among all these articles, those published in core journals account for a big proportion, which is reflective of the more and more important role translation technology plays in cross-cultural communication in recent years against the broad context of globalization.

2. Unit distribution of authors

TABLE 2
UNITS OF THE AUTHORS WITH ARTICLES ON TRANSLATION TECHNOLOGY FROM 1999 TO 2017

Number	Author's unit	Article number	Percentage (%)
1	Peking University	17	5.3292
2	Beijing Normal University	12	3.7618
3	University of Shanghai for Science and Technology	10	3.1348
4	Shandong Normal University	9	2.8213
5	Chinese Academy of Sciences	9	2.8213
6	Beihang University	7	2.1944
7	Xi'an FanYi University	6	1.8809
8	Guangdong University of Foreign Studies	5	1.5674
9	Jilin Huaqiao Foreign Languages Institute	4	1.2539
10	Qufu Normal University	4	1.2539
11	University of International Business and Economics	3	0.9404
12	Shandong University of Science and Technology	3	0.9404
13	Anhui Finance and Economics University	3	0.9404
14	Yunnan Normal University	3	0.9404
15	Liaoning Normal University	3	0.9404

According to the unit distribution of authors in the selected sample (as shown in table 2), it can be observed that Peking University enjoys the highest frequency of article publication, which is 17, with a ratio of 5.3292%. The frequency of publication of Beijing Normal University is 12, accounting for 3.7618%. The frequency of Shanghai University of Science and Technology is 10, accounting for 3.1348%. Both Shandong Normal University and the Chinese Academy of Sciences have a frequency of 9, accounting for 2.8213%. Among participants in researches on translation technology and related issues, there are some that come from distinguished institutions such as Peking

University and Chinese Academy of Sciences, but on the whole, the number of prestigious research institutions involved in this research field is still small in our country.

3. Number of published articles on translation technology in the journals

TABLE 3
JOURNALS WITH ARTICLES ON TRANSLATION TECHNOLOGY FROM 1999 TO 2017

Number	Journal	Article Number	Percentage(%)
1	Chinese Translators Journal[*]	18	5.8824
2	Chinese Science & Technology Translators Journal	13	4.2484
3	Overseas English	10	3.2680
4	Journal of Language and Literature Studies	10	3.2680
5	Shanghai Journal of Translators[*]	7	2.2876
6	China Science and Technology Information	7	2.2876
7	Computer-Assisted Foreign Language Education[*]	6	1.9608
8	China Computer Users	6	1.9608
9	Journal of Hunan City University	4	1.3072
10	Foreign Languages Research[*]	4	1.3072
11	English Square	4	1.3072
12	Journal of Hubei University of Economics[*]	4	1.3072
13	Terminology Standardization and Information Technology	4	1.3072
14	Wit	4	1.3072
15	Computer Engineering[*]	3	0.9804
16	Shandong Foreign language Teaching Journal[*]	3	0.9804
17	Science and Technology Information[*]	3	0.9804
18	Foreign Language Research	3	0.9804
19	Journal of Mudanjiang College of Education	3	0.9804
20	Contemporary Education Research and Teaching Practice	3	0.9804
21	Journal of Hubei Correspondence University	3	0.9804
22	College English[*]	3	0.9804
23	China's After-School Education	3	0.9804
24	Journal of Chinese Information[*]	3	0.9804
25	Family of the Drama	3	0.9804

Note: "*" marks the core academic journals in China.

According to the research findings (as shown in table 3), the 300 papers on translation technology are published in about 172 journals, and by dividing the number of articles by the number of journals, we get the ratio 1.744. The table shows that related research findings have come out in source journals of translation studies, including "Chinese Translators Journal" (18; 5.8824%), "Chinese Science & Technology Translators Journal" (13; 4.2484%), and "Shanghai Journal of Translators" (7; 2.2876%;). Some are published in source journals of English language studies, such as "Overseas English" (10; 3.2680%), "English Square" (4; 1.3072%), and "Foreign Languages Research" (2; 1.3072%). Relevant articles are also published in comprehensive university journals: "Journal of Hunan City University" (4; 1.3072%), and "Journal of Hubei University of Economics" (4; 1.3072%). The number of articles published in journals of computer science and technology is 6, accounting for 1.9608%, and another 4 in "Terminology Standardization and Information Technology", making up 1.3072%. Among all the 25 related journals, core ones (marked with "*") account for 10, including "Chinese Translators Journal", "Computer-Assisted Foreign Language Education", "Shanghai Journal of Translators", "Foreign Languages Research", etc.. From the ratio of article numbers divided by journal numbers, we see that the publication of articles on translation technology relatively concentrates on journals of several fields, esp. core journals in the field of translation studies. In addition, some source journals of

English language studies have also published a large number of articles on translation technology, but far less are published in comprehensive university journals. It to some extent suggests that the research subject is relatively specialized, and the level of domestic studies in this field is advanced.

4. Analysis of high frequency keywords

TABLE 4
KEY WORDS OF THE ARTICLES ON TRANSLATION TECHNOLOGY FROM 1999 TO 2017

Number	Key Words	Article Number	Percentage (%)	Number	Key Words	Article Number	Percentage(%)
1	translation technology	242	17.8598	14	application	6	0.4428
2	translation tools	137	10.1107	15	translation results	6	0.4428
3	translation technology teaching	73	5.3875	16	translation market	6	0.4428
4	translation memory	32	2.3616	17	post translation editor	5	0.3690
5	language service	19	1.4022	18	translation studies	5	0.3690
6	computer	18	1.3284	19	text analysis	5	0.3690
7	terms	18	1.3284	20	translation major	5	0.3690
8	translation talents	18	1.3284	21	localization	5	0.3690
9	parallel corpus	17	1.2546	22	semantic information	5	0.3690
10	translation system	10	0.7380	23	text processing	4	0.2952
11	translation quality	9	0.6642	24	translation collaboration	4	0.2952
12	human-computer interaction	7	0.5166	25	translation field	4	0.2952
13	translation ability	7	0.5166				

After doing statistics of the literature, we get 624 keywords of the 300 valid articles. In order to make the statistical results more representative, the author deletes some obviously erroneous key words or those of too broad meaning, and co-mbines keywords of the same or similarmeaning. Then according to the boundary integral formula of high and low frequency words derived from Zipf's law that is proposed by Donohue, $[-1+(8)^{(0.5)}*1^1]$(I^1 is the number of key words whose word frequency is 1, and T is the lowest frequency number of the high frequency words) (Sun, 1992). Considering the representativeness of the statistic data, we set the number of high frequency and low frequency threshold to be 7, and eventually get 13 high frequency key words (see table 3). Key words function as the summary of literature, so the higher quantized value the key word gets, the more attention it receives from researchers. From the 13 high frequency key words as shown in table 3, we can roughly learn the hotspot issues in the current studies of translation technology.

B.   Similarity Matrix and Dendrogram Analysis

In order to further explore the correlation of the keywords, we need to transform the co-word matrix into the similarity matrix. In this study, we will deal with the 25 intercepted high-frequency keywords by using the "word matrix" function in "matrix" of the Bicomb software, so as to generate the key word matrix, and lead it into SPSS19.0. Through the gradual function of "analysis-classification-system clustering" in the software, we select "similarity matrix", "dendrogram" and "Ochiai coefficient". By the method of co-word visualization and cluster analysis, we can more directly obtain the keyword results.

1. Similarity matrix analysis

TABLE 5
SIMILARITY MATRIX OF HIGH-FREQUENCY KEYWORDS IN RESEARCHES ON TRANSLATION TECHNOLOGY

Cases	translation technology	translation tools	translation technology teaching	translation memory	language service	computer	term	translation talents	parallel corpus	translation system	translation quality	human-computer interaction	translation competence
translation technology	1.000												
translation tool	.368	1.000											
translation technology teaching	.422	.145	1.000										
translation memory	.279	.200	.091	1.000									
language service	.194	.067	.121	.042	1.000								
computer	.217	.160	.155	0.000	0.000	1.000							
term	.152	.059	.040	.112	0.000	0.000	1.000						
translation talents	.217	.023	.186	.043	.114	0.000	0.000	1.000					
parallel corpus	.167	.160	.124	.214	.057	.059	0.000	.059	1.000				
translation system	.195	.119	0.000	.056	.149	0.000	0.000	0.000	0.000	1.000			
translation quality	.160	.063	.043	.059	.314	0.000	.105	.081	.081	0.000	1.000		
human-computer interaction	.156	.071	0.000	0.000	.178	0.000	0.000	0.000	0.000	.239	0.000	1.000	
translation competence	.104	.071	.145	.067	.089	0.000	0.000	0.000	.092	0.000	0.000	0.000	1.000

The ratio shows the close to distant relationship of the pair of keywords. If the value is close to 1, then the two key words are similar and related to each other. If the value tends to zero, then the two key words are less similar, or not connected to each other. From the table, we can see the similarity of "translation technology" and other high-frequency key words. Ranked in order of closeness to distance, the key words are translation technology teaching (0.422), translation tools (0.368), translation memory (0.279), computer (0.217), and translation talents (0.217), etc. The data reveal the correlation between these words and researches on translation technology, from which we detect the focus of this research in China.

2. Clustering tree analysis
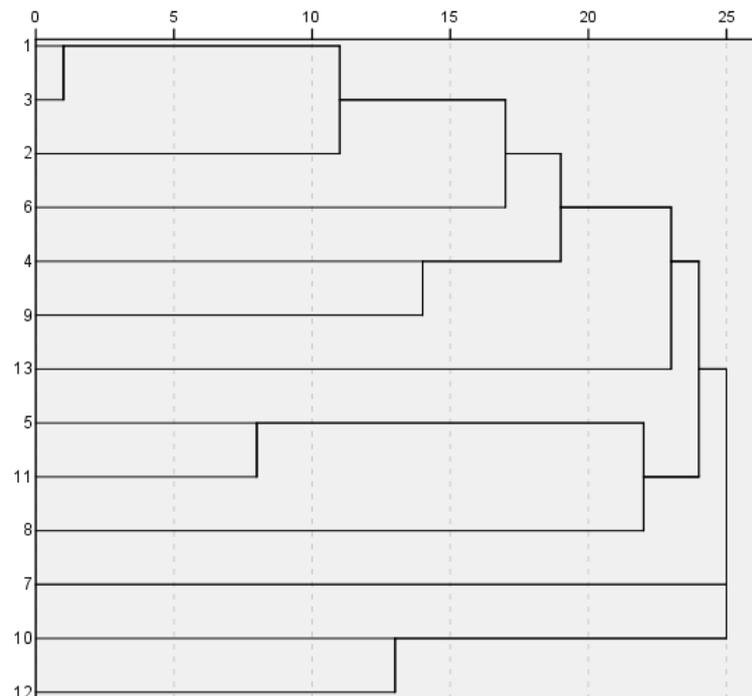
Dendrogram using average linkage (between groups)
Cluster merging by distance readjustment
1: Translation technology   2: Translation tools   3: Translation technology teaching
4: Translation memory   5: Language service   6: Computer   7: Terminologies
8: Translation talents   9: Parallel corpus   10: Translation system
11: Translation quality   12: Human-computer interaction
13: Translation competence

According to the clustering tree analysis of high frequency key words in researches on translation technology, we consider the correlation degree and the clustering process of the key words to summarize the condition of current studies on translation technology and reach an understanding of the high-frequency keywords in the mainstream academic researches on this subject including their correlation structure, level of correlation and field constitution. Thus, we classify the high-frequency keywords obtained into five broad categories: first, study of computer-aided translation technology; second, research on human-computer interaction in the translation technology system; third, translation technology teaching and talent training; four, study of terminologies in translation technology.

IV.   RESEARCH STATUS AND PROBLEMS

A.   Research on Computer-aided Translation Technology

In this new era, translation has become an important aspect of globalization, while the advancement of globalization has put higher requirements on translation. More speedy and effective translation is the urgent demand of international communication in the 21st century. The increasing need for translation cannot be satisfied simply by human translation (Fang, 1998). Therefore, using computer to do translation will become the mainstream practice in future, which means the popularity of CAT (computer-aided translation) technology.

Computer-aided translation is a technology developed rapidly after the electronization of translation materials. In a broad sense, computer-aided translation technology is the technology that uses computer software, hardware, network and other equipment to assist the whole translation process. In a narrow sense, computer-aided translation refers to the process of using software to assist translators in language transformation (Jin, 2010).

Translation memory and corpus forms the core of the CAT technology. The CAT technology supported by translation memory can solve the problem of translation reuse and shorten the time of translation. By setting up corpuses, the translated terms can be unified. In fact, in recent years both of them have become hot issues in domestic researches on CAT technology.

The Corpus is a popular research topic of CAT, while the parallel corpus and comparative corpus are the major focus of current corpus research. Because parallel and comparative corpora provide important resources for translation studies, contrastive studies of languages, bilingual dictionary compilation, and bilingual terminology extraction, etc. (Huang, 2004). The core of parallel or comparative corpus application is to translate corpuses into language-knowledge bases through statistical methods, case-based methods and corpus-processing methods. Corpuses exist mainly as a knowledge source of the translation system, and through integration of the resources of the bilingual corpuses, we can on the one hand preserve sentences of the source language, and on the other save the corresponding translation. So when we use

computer to translate, the system will compare the chosen sentence with those preserved in the corpus, to find two of the greatest similarity and then give the translation.

On the other hand, Su (2007) considers the translation memory system as an important part of the computer-aided translation technology, summarizes the existing translation memory systems, and points out the limitations of the current translation memory technology and systems. He also predicts its development trend, and puts forward some suggestions on research and application of translation memory in China. Bowker (2002) defines translation memory as a language database for storing the original text and its translations. In the process of translation, the system will automatically search for translations of the same or similar sentences and paragraphs in the memory resources and give a reference version, so as to help users avoid wasteful duplication of effort, and focus on translating new content. The translation memory is also constantly learning and automatically storing new translations backstage to enlarge the memory volume through the translation memory system which helps translators in their work and greatly reduces their workload.

At present, domestic research on CAT technology and theory has achieved remarkable results, but this field as a combination of information technology and translation studies touches upon a wide range of subjects and is very difficult to handle. Researchers from any single discipline cannot go deep into all aspects of the CAT technology. Therefore, how to integrate knowledge of relevant fields and carry out interdisciplinary research is crucial to the future development of the entire CAT field, and is also one of the major tasks researchers now face. (Wen, 2011).

B.   Research on Human-computer Interaction in Translation Technology

In the process of using the translation technology system, the human-computer interface, i.e. the human-computer interaction technology, is very important. Human-computer interaction is the process of information exchange between people and computers through interactive devices and interactive software.

To professional users of translation technology, the design of the human-computer interaction model is crucial. Even if the computer-aided automatic translation function is embedded in the current CAT software, most translators are reluctant to let the computer do the work and then revise the version done by the machine, but prefer to produce their own human-brain translation. On the one hand, it is because the results of computer translation are often unsatisfactory. On the other, the human-computer interaction model of computer-aided translation is too simple, which drags many users away from Machine Translation. For most non-professional users, the direct purpose of using computer-aided translation is not purely to translate, but for the convenience of their life and work, such as acquiring information conveyed in a foreign language, making friends, etc.. To these users, the computer-aided translation system should not be offered in the form of translation software, but can be embedded into other application software so as to be easily applied by users. This actually puts a very high demand on the human-computer interaction model in computer-aided translation (Liu, 2012).

The above two kinds of demands show that establishment of the human-computer interaction model in the translation system should make the computer-aided tools more convenient and effective for translators and other users to employ, in order to improve the efficiency and quality of their work with translation. However, the human-computer interaction system of translation technology now is still imperfect, and remains in the basic user-computer interface, so Lin (2007) and Dong (2015) argued that we should build some more humane modern human-computer interaction model in future, which turns the mode from "people around the machine" to "machine around people". From the perspective of translation technology, establishment of the human-computer interaction system should be consistent with the basic way of human communication. Research on the human-computer interaction model has become a new hot subject in the field of translation technology.

On the other hand, the ideal human-machine interaction mode in machine translation should not only allow users to use the computer translation system more conveniently, but also let the system automatically collect users' information and using habits, so that the human-computer interaction not only functions as a tool for people to do the work and study, but also helps the computer translation system learn and upgrade. In the process of translation we will not expect the machine to solve all the problems exclusively, but try to finish the translation through human-machine collaboration, resulting in a virtuous cycle of the machine translation system and users that will greatly improve the quality of machine translation and users' experience, and push application of the machine translation system to a higher level. For example, Liu (2009) believes that we can select phrases which are more idiomatic and expressive while retaining the semantic meaning of the original by means of human-computer interaction to improve the quality of translation done by the translation system.

The above two aspects represent the two directions of the human-computer interaction model in the development of translation technology, and exhibit great application prospects and practical significance.

C.   Research on Translation Technology Teaching and Translation Talents Training

With the increasing demand for applied translation talents in the industries, the world of education has paid more attention to the cultivation of translation talents. Relevant research on teaching and training translators is also being deepened gradually. From the aspect of curriculum, domestic research mainly stays at the macro level. For instance, Yu (2012) discussed the necessity of introducing CAT technology into the curriculum of translation, as well as the benefits that CAT technology can bring to translation studies and education. Li (2011) conducted an extensive survey and

answered the following questions in great detail: 1) How is the current situation of CAT teaching? What are the difficulties we face and what experience can be learned and carried forward? 2) In what ways do the computer-aided tools function? How and to what extent can they help translators in future? 3) How to teach people to use the computer-aided translation tools on the technical level and from the micro aspect? What are the effective teaching strategies?

As to CAT teaching, domestic research on this subject is relatively comprehensive in regard to master education. Some studies focus on CAT teaching for academic masters, such as the paper "Reflections on Teaching Computer-aided Translation" (Qian, 2009) which makes a systematic generalization and speculation on the teaching of relevant courses from eight aspects including the history of Machine Translation and computer-aided translation, principles of computer-aided translation, translation tools in the broad and narrow sense, etc. In addition, there's also exploration and research into the teaching and training of MTI (Master of Translation and Interpretation) students. For example, Liu (2015) delivered questionnaires to examine the status of computer-aided translation teaching in domestic colleges and universities with MTI program. The results show that the importance of CAT as a rising star in MTI education has been widely recognized. However, there are still a lot of problems in MTI-CAT teaching, such as limited faculty resources, shortage of funds and inadequate understanding of the translation industry, etc.

In addition, researchers have also discussed about the training of academic masters on computer-aided translation. Based on the constructivist education theory, Zhong (2012) probed into the specific implementation of the theory in the teaching process of the CAT course with regard to the features of the course and the target of training academic masters. It was found that the student-oriented teaching method can cultivate students' ability to participate in and manage large-scale translation projects; the interactive teaching mode in classrooms may improve students' learning efficiency; and using a variety of corpuses and online software resources to learn translation can help students improve their translation ability. These studies have broadened the research horizon of CAT teaching with considerable guiding significance for interdisciplinary research of CAT courses.

However, there are several problems in the traditional way of translation teaching. Firstly, the content of the course is dull and boring, the classroom atmosphere is poor, and the interaction between teachers and students is not good, so the teaching quality is usually poor. Xu (2014) and Li (2014) put forward some new ideas about translation teaching, believing that training should focus on cultivation of students' computer application ability, which relies on the computer-aided translation technology and task-based instruction, to improve students' translation ability through practice. Secondly, the traditional translation teaching shows no concern for market needs, so students lack opportunities to know and apply the CAT technology or receive training in actual practice. According to Cheng and Du (2016), traditional translation teaching needs reform, and esp. in English translation training some new content should be included, such as information inquiry technology, online translation technology, computer-aided translation technology, cloud translation technology and others, in order to fully display the practical, open and interactive features of this course, and improve the teaching efficiency and quality of talent training. For accurate and efficient translation, students should be proficient in application of computer-aided translation technologies.

In conclusion, translation teaching should stress improvement of the education system, while relevant research on training undergraduates and doctors should be complemented, so as to form an integral system where education on different levels interrelates. Besides, we should in teaching put emphasis on enhancing students' ability of applying technology.

D. Research on Terminologies of Translation Technology

Terminologies of translation technology form a relatively new research direction in the field of translation technology, which mainly concerns some specific terms appearing in the course of translation. Translation technology is constantly developing and changing, which in the meantime changes the ways how translators, amateurs and volunteers are widely involved in translation through online social media, video games, animation and other channels. This phenomenon has led to the emergence of a large number of generally recognized professional terms in this field. In addition, the popularity of online translation websites such as Google translation, Microsoft Bing, and Baidu translation has also created a great deal of terms. The terminologized language often appears in movie audition with subtitles for example, and translation dictionaries (O'Brienetal, 2014). If the tag suggests "see Documentary Translation", it means that readers should refer to the section "Documentary Translation". Meanwhile, for readers' convenience to learn the meaning of the terms, the writer also provides plain and simple examples of the original author to facilitate understanding. For example, in explaining "Back Translation", there is an experimental case of poetry translation provided by Holmes (Zhao, 2013, p.66).

The open translation technology adopted by amateur and volunteer translators is not restricted, and the style differs from man to man. Yet this type of translation done by the masses with pervasive terminologies still occupies a considerable market in documents, websites, operating manuals and even television programs and movies. Although such translation is not entirely clear and accurate, the free online translation systems are still very popular among the populace. However, it needs to be emphasized that in some sensitive cross-cultural situations, professional translation (and interpretation) services are still required (Zhang, 2016).

Since current studies on terminologies still remain at the initial stage, and are imperfect, the focus of future research may cover term definition, term localization, term innovation, term association practice in the process of

internationalization and some other fields.

V. REFLECTIONS AND PROSPECTS

A. Develop Computer Technology and Cultivate Talents

By investigating the existing translation technology systems, we find that there are still many deficiencies in this field. For example, the theory and practice are disjointed, and the translation technology idealistically designed by researchers cannot well integrate into the training of translation talents; the translation technology system is not perfect, as the machine usually fails to consider the context and translates words rigidly; computer-aided translation is mainly based on texts and strings in practical application with little regard to other grammatical features; in training talents on translation technology, the method of education is too monotonous and there is no relatively systematic teaching approach ready to be adopted. Therefore, researchers on translation technology should pay more attention to applications of computer in today's society, esp. using computer technology to improve the translation technology system, and the organic combination of machine translation and computer-aided translation to make translation more accord with the purpose of communication. Moreover, we should try to ensure effective use of the human-computer interaction technology and make it more humanized. In teaching, we introduce computer technology and develop diversified teaching methods to enhance the application ability of technical talents.

B. Stress Ontology and Micro Research, and Emphasize Transformation and Interpretation of Local Information

In the current age of big data, terminology translation in China has been closely associated with information technology. At present, theoretical construction and standardization of terminology translation in China need to be strengthened. In the meantime, estabilshment of Chinese translation theories should be based on the cultural and translatological resources of the nation to form modern translation theories with national characteristics and the demeanor of a big country. We shall endeavor to achieve integration of Chinese and western theories as well as modern transformation of ancient Chinese translation theories. Besides, we need to do systematic collation of the terms, specify difficult and ambiguous terms and standardize term association, to make the terms unified and domestic output of terms consistent. In our efforts, domestic culture should always play the pricipal role in combination with western linguistic features to create new translation technology, new theories and new researches of our own. Moreover, it is necessary to stress the interdisciplinary nature of researches on translation technology, and analyze the advantages and disadvantages of current translation technology in China from different angles and on different levels, so as to discard the dross and keep the essential for the general improvement of translation technology.

C. Reevaluate the Application of Translation Technology and Objectively Assess Its Two Sides

Looking forward to the future, we are not sure of the special role translation technology plays in the globalized society, while translation technology and new technologies often intersect each other, which involves fairly uncontrollable factors and exerts great impact on the native and English cultures. Currently, the application of translation technology in the society is not high-level, because it is largely used by the populace with disorderly translation software while the platforms pervaded by the masses lack equipment of new professional translation technology. As users, developers or personnel indirectly involved in the research and development of translation technology tend to be more and more generalized, some experts have expressed worry about the situation, and insist that all stakeholders, including translators, buyers and sellers of translation services, should be educated about the basics and accessibility of translation technology. We should also endeavor to popularize the advantages and disadvantages of translation technology and its impact on international and cross-cultural communication. The theoretical research and practical operation of these aspects rely on further and in-depth studies of translation technology, which may help to develop a more reasonable, efficient and close-to-life mode of applying translation technology.

VI. CONCLUSION

To sum up, domestic scholars have shown more and more concern for translation technology in recent years with many research results obtained. The research hotspots focus on how to help Chinese culture go out and spread the English culture more effectively in China. Since the "18th National Congress of the Communist Party of China (CPC)", the central government has attached great importance to the "go-out" strategy of Chinese culture. The rejuvenation of China has attracted the world's attention to this nation and its unique charming culture, so our academic research should strive to re-establish the confidence of Chinese culture and adjust the direction and pattern of domestic scholoarly studies. In the light of the current research hotspots and development trend, the author believes that the training of translation talents and innovation of translation theories should be strengthened in future to accelerate the transformation of translation technology into productivity, and provide strong foundation and support for translation of ancient Chinese classics into other languages, dissemination of traditional Chinese culture throughout the world as well as development of relevant industries.

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