Study of China’s Publicity Translations Based on Complex Network Theory

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ABSTRACT Translation is a complex activity in which two language systems form complex network structures. This paper aims to examine the similarities and differences between English language and Chinese language publicity material networks and to reveal the core factors manifested in the publicity materials by choosing 1000 pieces of Chinese and English publicity materials as the study objects (500 pieces in each language). The core factors of 10 contemporary translation theories identified by the Delphi method are considered nodes; then, we link the nodes in accordance with their relevance among the core factors embodied in the translated publicity materials to draw network diagrams (the English language and Chinese language publicity material networks). Finally, we discuss appropriate contemporary translation theories that are suitable for guiding China’s publicity translations and explore a new research perspective for the study of China’s publicity translations.

INDEX TERMS Complex network, data analysis, network topology.

I. INTRODUCTION Publicity translation, which relates to the interests of the state, is not only a cross-border, cross-cultural and cross-linguistics international communication method but is also a vital way to show images of China to the world [1]. Although China’s publicity translations have made great contributions to protecting national interests and improving global opinions, we cannot ignore that publicity translation has not achieved satisfactory results. Due to differences between two languages and two cultures, mistranslation always occurs in China’s publicity translations, which can lead to errors in information transfer and cause ambiguity or diplomatic conflict. Therefore, we must seriously study publicity translation.

Recently, studies on publicity translation have experienced rapid development. Some scholars have explained which problems should receive attention from the perspectives of translators and the audience, whereas other scholars have analyzed mistranslation and its causes. Despite these achievements, some problems have not been thoroughly studied. Most Chinese scholars adopt literature research, comparative study and case analysis to reflect problems regarding the guiding significance of a certain contemporary translation theory [2], [3]. These approaches can only use one or two translation theories to analyze the problems in publicity translation. Besides, the range and amount that case study approach can cover is still limited. Therefore, we use complex network theory to systematically analyze translation theories and the correlation of translation factors that will deeply influence the translation performance. Nevertheless, translation is a complex, cross-linguistics activity, and the influence of translation theories on our translation activities has formed a complex network. Based on these issues, we use complex network theory and choose 10 contemporary translation theories to conduct a comprehensive and systematic analysis of China’s publicity translations.

Complex network theory has experienced rapid development in recent years and has been widely used in interdisciplinary studies. A complex network is a mathematical expression of a complex system in which nodes represent components and edges represent interactions between nodes. Scholars have proposed many approaches to adopt complex networks in different studies and have demonstrated their advantages in many fields, including time series analysis [4]–[6], communication networks [7], information prediction [8], [9], optimal capacity distribution [10], medical research [11] and financial research [12], [13]. Complex network research has produced fruitful results in linguistics, one of which is language systems that have
a type of complex network structure. Research on language complex networks started earlier worldwide; scholars such as Feron I Cancho [14], Ricardo Solé [15], Mark Steyvers [16], Luciano da Fontoura Costa [17], Carro A [18], Sboev A [19], Bonchev D G [20], Fuks H [21], and Wachs-Lopes G A [22] discussed the feasibility of using complex networks to analyze human language and found that language had small world features, which were also features of complex networks. Amancio D R [23]–[25] evaluated and compared the quality of machine translation and human translation on the basis of complex networks to explore text reorganization in human translation, which laid a solid foundation for improvement of the quality of machine translation. Research by Chinese scholars on language complex networks began later, but great progress was still made. Scholars including Wei Luoxia [26], Liu Haitao [27]–[29], Gao Weinan [30], Ke Jinyun [31], Sheng L [32], and Cong J [33] performed complex network analysis from the perspective of language structure, syntax and word formation and found unique characteristics from the common features (small world and scale-free) of the complex network. These studies provided references for studies of multilevel network structures and the function of language symbols. These studies not only contribute to a better understanding of the structure and organization of language, the universality and particularity of language, and the language knowledge network but also promote scientific and international research on linguistics. In summary, current studies are mostly qualitative analyses or explore only the structure of the language and language organization. However, these studies do not apply any contemporary translation theory to explore the influence of the core factors that affect the quality of translation of publicity materials. Constructing a complex network makes the applicability of translation theories in publicity translation practice visible, and correlations can be more easily identified among the translation factors and the manners in which they influence translation, which can indicate directions for translation practice.

In our study, a large number of Chinese and English publicity materials focusing on one specific event were selected and analyzed. We construct two networks by settling core factors in contemporary translation theories, as shown in Table 2.

Due to duplication of core factors in the 10 contemporary translation theories, the Delphi method is adopted to choose core factors of the translation theories through the following steps.

(1) Experts select the core factors from 10 contemporary translation theories through a questionnaire.

(2) The experts’ opinions are summarized and used to perform a quantitative statistical analysis.

(3) The results are sent to the experts for second-round opinions.

(4) Steps 4 and 5 are repeated until a consensus is reached.

Through this process, we selected the core factors of 10 contemporary translation theories, as shown in Table 2.

Due to duplication of core factors in the 10 contemporary translation theories (e.g., the core factor language appears in Eco-translatology, the Theory of Cultural Turn, Functional Equivalence and Polysystem Theory), we chose to delete the repeated core factors in terms of the unicity of the nodes in the complex network. Finally, we retain 36 core factors and
TABLE 1. Ten contemporary translation theories.

<table>
<thead>
<tr>
<th>Theory</th>
<th>Founder</th>
<th>Connotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-Translatology</td>
<td>Hu Gengshen</td>
<td>This theory refers to translation as an ecosystem, in which the translator plays the central role. Translators need to make adaptations and selections from different dimensions to achieve balance between the original text and translation.</td>
</tr>
<tr>
<td>Memetics</td>
<td>Clinton Richard Dawkins</td>
<td>This theory describes the laws of cultural evolution based on Darwinian theory of evolution. Memetics promotes cultural spreads through self-replicating memes (unit of culture).</td>
</tr>
<tr>
<td>Toury’s Norm Theory</td>
<td>Gideon Toury</td>
<td>Toury hypothesizes that translation is restricted by three norms, including preliminary norms, initial norms and operational norms.</td>
</tr>
<tr>
<td>Newmark’s Translation Theory</td>
<td>Peter Newmark</td>
<td>The theory includes two translation methods (semantic translation and communicative translation), which should be used for different types of text.</td>
</tr>
<tr>
<td>Theory of Context</td>
<td>Malinowski</td>
<td>The theory emphasizes the influence of the translation context on translation.</td>
</tr>
<tr>
<td>Theory of Cultural Turn</td>
<td>Susan Bassnett, Andre Lefevere</td>
<td>The translation should ensure that the translated version plays the same role in the culture of the targeted language as the original text in the culture of the source language.</td>
</tr>
<tr>
<td>Functional Equivalence</td>
<td>Eugene Nida</td>
<td>Translation means reproducing in the receptor language the closest natural equivalent of the source message, first in terms of meaning and second in terms of style. (Nida &amp; Taber, 1969:12-13)</td>
</tr>
<tr>
<td>Polysystem Theory</td>
<td>Even-Zohar</td>
<td>Based on formalism, Polysystem Theory treats various social phenomena (i.e., language, literature, economics, politics, and ideology) as an open and dynamically large system, which means that translation, as a part of this system, should take other factors into consideration.</td>
</tr>
<tr>
<td>Relevance Theory</td>
<td>Dan Sperber, Deirdre Wilson</td>
<td>Relevance theory advocates that the analysis of discourse in communication should be based on the concepts of relevance.</td>
</tr>
<tr>
<td>Skopos Theory</td>
<td>Hans Vermeer</td>
<td>The theory indicates that translation is a purposeful cross-cultural action and an intentional intercultural communication to attain the same effect in the target text.</td>
</tr>
</tbody>
</table>

C. NETWORK CONSTRUCTION AND DETECTION OF COMMUNITY STRUCTURE

The research process is summarized in Fig. 1.

The core factors reflected in each piece of publicity material are selected using the Delphi method. The nodes link to each other and form a [0, 1] adjacency matrix and a single network graph. Then, the same process is repeated to form the other 1000 single networks. The 500 English language publicity material networks are combined to form the English language publicity material network. Likewise, the Chinese language publicity material network is created through the same process.

Networks with more edges have more core factors embodied in the publicity materials and more important core factors present in the translations of the publicity materials.

To reveal the network and detect the sensitivity of the community, we employ the measure based on Newman’s fast community detection algorithm [35]; the basic idea is shown in Fig. 1.

We start with a state in which each node in the network is the sole member of a module \( i \). Hence, the initial network modularity \( Q \) can be computed as:

\[
Q = \sum_i (e_{ii} - a_i^2)
\]

where \( e_{ii} \) (0 initially) is the fraction of all edges that connect vertices within module \( i \), and \( a_i \) is the proportion of links belonging to module \( i \) (degree of module \( i \)) over the total number of network links.
Then, an initial modularity matrix is constructed from equation (1) as:

$$\Delta Q_{ij} = \begin{cases} 
2(e_{ij} - a_ia_j), & \text{if } i, j \text{ are connected;} \\
0, & \text{otherwise;} 
\end{cases} \quad (2)$$

where $e_{ij}$ is the fraction of edges in the network that connects the vertices in module $i$ to those in module $j$, which is 1 over the total number of network links if $i$ and $j$ are connected initially. $a_i$ and $a_j$ are denoted as the proportion of links belonging to modules $i$ and $j$, which is the degree...
TABLE 3. Indicators with different threshold values in the English language and Chinese language publicity material networks.

<table>
<thead>
<tr>
<th>Threshold Value</th>
<th>Average Degree</th>
<th>Network Clustering Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>$D \geq 150$</td>
<td>20.889</td>
<td>0.872</td>
</tr>
<tr>
<td>$D \geq 250$</td>
<td>12.333</td>
<td>0.938</td>
</tr>
<tr>
<td>$D \geq 350$</td>
<td>5.667</td>
<td>0.944</td>
</tr>
<tr>
<td>The English</td>
<td></td>
<td></td>
</tr>
<tr>
<td>language</td>
<td></td>
<td></td>
</tr>
<tr>
<td>publicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>material</td>
<td></td>
<td></td>
</tr>
<tr>
<td>network</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$D \geq 150$</td>
<td>15.667</td>
<td>0.881</td>
</tr>
<tr>
<td>$D \geq 250$</td>
<td>12.556</td>
<td>0.963</td>
</tr>
<tr>
<td>$D \geq 350$</td>
<td>5.778</td>
<td>0.953</td>
</tr>
<tr>
<td>The Chinese</td>
<td></td>
<td></td>
</tr>
<tr>
<td>language</td>
<td></td>
<td></td>
</tr>
<tr>
<td>publicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>material</td>
<td></td>
<td></td>
</tr>
<tr>
<td>network</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

of modules (nodes) $i$ and $j$ over the total number of network links, respectively. This measurement represents the affinity between modules $i$ and $j$, because $\Delta Q_{ij}$ increases with the likelihood of modules $i$ and $j$ belonging to the same module.

The algorithm joins modules together in pairs by choosing the pairing that results in the greatest increase in $Q$ determined by a measured $\Delta Q_{ij}$ at each step,

$$\Delta Q_{ij} = \frac{2}{a_i} (e_{ij} - a_i a_j)$$  \hspace{1cm} (3)

This normalization ensures that clusters with fewer links have the largest $\Delta Q_{ij}$ values and therefore are joined earlier. The advantage of the optimization approach is that it takes into account the heterogeneity of module size observed in real networks. The algorithm stops the module joining process when $\Delta Q_{ij}$ becomes negative, because the agglomeration is no longer contributing to optimization of the network modularity.

Detection of the community structure in the complex network is vitally important. The purpose of this step is to identify whether the factors in the translation theories are applicable in publicity translation to improve the translation quality. Specifically, in a complex network, nodes in the same community are regarded as sharing high similarity; therefore, in this study, nodes in the same community represent factors that influence the publicity translation to a high degree. Then, we further analyze the similarities shared by the nodes and their effects on the translation. The isolated nodes that are not capable of forming a community are regarded as having little influence on publicity translation.

Then, we explore the dynamic behaviors in terms of the network analysis, which is quantified via network statistical measures. In particular, we employ the node clustering coefficient ($\tau_i$) and the node degree ($k_i$) to characterize the topological structure of the inferred networks. These network measures can be calculated as follows:

$$C_i = \frac{\tau_i \Delta}{\tau_i}$$  \hspace{1cm} (4)

$$k_i = \sum_j a_{ij}$$  \hspace{1cm} (5)

$\tau_i \Delta$ denotes the number of closed triplets centered on node $i$, $\tau_i$ is the number of triplets centered on node $i$, and $k_i$ is the degree of a node $i$ (connections of a node $i$). $N$ is the node number of the derived network.

The node degrees and clustering coefficient values with different thresholds remain high in the English language and Chinese language publicity material networks, which indicates that the nodes have a high concentration and close correlation.

D. SELECTION OF THE THRESHOLD VALUE

Since the network represents the situation in which the core factors are reflected by the 500 English media reports or the 500 Chinese bilingual website reports, the nodes in the network will interconnect at most 500 times or at least 0 times. Regardless of how many links exist between two nodes, only one edge can be used to represent the link between the two nodes in the network. Thus, setting a reasonable threshold value is particularly important for the network analysis. When the threshold value $D \geq n$ (i.e., the number of links is greater than or equal to $n$), we set this value as 1 regardless of the actual number of links; when the number of links is less than $n$, we set this value as 0.

This article investigated 3 threshold values ($D \geq 150$, $D \geq 250$, and $D \geq 350$). We use the degree value and clustering coefficient in the complex network to analyze the network, as shown in Table 3.

We found that the clustering coefficient was much higher in both networks when the threshold values were $D \geq 250$ and $D \geq 350$. More than half of the points in the networks were isolated points (the total was 36), and the core factors in the two networks were quite centralized, with a scope that covered a small range. Moreover, the two networks were quite similar when the threshold was $D \geq 250$ and $D \geq 350$. Therefore, this measurement would affect the study of contemporary translation theories with few core factors and introduce difficulties into comparisons of the two networks.

When we chose $D \geq 150$, the nodes showed an obvious divergence; the English language publicity material network contained 22 core factors with edges, whereas the Chinese language publicity material network included 19 core factors with edges. Because the two networks both contained more than half of the isolated points, we would obtain better results if we performed the research. In addition, the average degree
was higher and the edge distribution remained quite different in the two networks with the threshold of $D \geq 150$, which laid a good foundation for our analysis. Thus, we determined to choose the threshold value $D \geq 150$ for the analysis, because by using this approach we could not only obtain a list of core factors according to their importance but also identify differences between the two networks and determine the applicability of contemporary translation theories for publicity translation.

III. RESULTS AND ANALYSIS
The complex network diagrams of the core factors reflected in the English language publicity materials (abbreviated NE in the figure) and the Chinese language publicity materials (abbreviated NC in the figure) with different thresholds are shown in Figs. 2-5.

Figs. 2-5 show the correlations between the core factors manifested by the English and Chinese publicity materials. The six diagrams are composed of two parts: isolated points representing core factors, which are not manifested in the publicity materials, and networks representing the correlations among core factors.

As shown in Figs. 2-5, the number of linked nodes and edges decrease with the increase of the threshold. Therefore, the nodes exist in all networks represent the most important core factors in the translation of publicity materials.

Besides, referring to the core factor numbers, we found that 12 core factors, including 8 change in structure (Genotype Memes), 9 homophone (Phenotype Memes), 10 associative translation (Phenotype Memes), 11 same structure/different meaning (Phenotype Memes), 14 expressive function, 16 vocative function, 17 politics, 18 religion, 21 customs, 23 untranslatability, 28 literature and 29 economy, were isolated points, which indicated that these factors provided less guidance for the translation of
publicity materials. This result occurred for the following reasons: (1) factors such as politics, religion, customs, literature, and the economy represent only translations of limited topics, whereas publicity materials cover a broad range of topics; when the number of the translation samples is sufficiently large, translations that manifest these factors may represent only a small proportion; (2) translation of publicity materials aims to help the world accurately understand China and spread Chinese culture, which allows the translation to be less expressive and vocative; and (3) publicity materials spread a large amount of China’s information in various forms to the world, whereas core factors, such as changes of structure, homophones, associative translations, and same structure/different meaning, are specific modes of transmission that contribute to a small proportion of translated publicity materials. In the English language publicity material network (a), the core factor “foreignization” is an isolated point. This point is not difficult to understand, since readers of English publicity materials are foreigners whose language is English, and translators adopt more domestication when they come across Chinese information to facilitate understanding. In the Chinese publicity material network (b), “addition” and “omission” are isolated points, which indicate that Chinese translators adopt more direct translation when they translate publicity materials. Therefore, their translations are similar to the source language in features.

We rank the degree value of nodes in the English language and Chinese language publicity material networks from high to low levels, as shown in Table 4.

We found that “language,” “communication,” “grammar,” “coherence rule,” “Skopos rule,” and “informative function” had higher degree values in both networks, which implied that these core factors had a larger number of edges and were in the centers of the networks. This result occurred for the following reasons: (1) translations of Chinese publicity materials primarily include translations of
political materials, news, and cultural classics; in other words, spreading Chinese culture and information is the priority, and because language, grammar and coherence rules are essential for this purpose, these factors are in the centers of the networks; (2) readers of Chinese publicity material translations are foreigners, and therefore adequate communication methods need to be adopted; and (3) the purpose of translation of publicity materials is to guide the whole world to correctly understand China, and thus the “purpose rule” is indispensable. In contrast, “culture,” “region,” and “ideology” are manifested less often most likely due to the different types of massive publicity materials.

From the perspective of the number of nodes and their degree values, more core factors are manifested in English publicity materials than in Chinese publicity materials. We estimated that these factors were closely related to each other. Therefore, similar core factors are manifested in English publicity materials than in Chinese publicity materials. We estimated that these factors were closely related to each other. Therefore, similar core factors are manifested in English publicity materials than in Chinese publicity materials.

### TABLE 4. The degree values of nodes in the English language (A) and Chinese language publicity material networks (b) at the $D \geq 150$ threshold.

<table>
<thead>
<tr>
<th>Number</th>
<th>Node</th>
<th>Degree value</th>
<th>Number</th>
<th>Node</th>
<th>Degree value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Language</td>
<td>21</td>
<td>31</td>
<td>Cognitive disposition</td>
<td>19</td>
</tr>
<tr>
<td>32</td>
<td>Communicative act</td>
<td>21</td>
<td>33</td>
<td>Contextual effect</td>
<td>19</td>
</tr>
<tr>
<td>27</td>
<td>Grammar</td>
<td>21</td>
<td>7</td>
<td>Direct translation</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>Communication</td>
<td>21</td>
<td>30</td>
<td>Ideology</td>
<td>15</td>
</tr>
<tr>
<td>34</td>
<td>Skopos rule</td>
<td>21</td>
<td>36</td>
<td>Fidelity rule</td>
<td>15</td>
</tr>
<tr>
<td>35</td>
<td>Coherence rule</td>
<td>21</td>
<td>6</td>
<td>Omission</td>
<td>14</td>
</tr>
<tr>
<td>4</td>
<td>Domestication</td>
<td>20</td>
<td>20</td>
<td>Region</td>
<td>14</td>
</tr>
<tr>
<td>12</td>
<td>Target cultural norms</td>
<td>20</td>
<td>5</td>
<td>Addition</td>
<td>13</td>
</tr>
<tr>
<td>15</td>
<td>Informative function</td>
<td>20</td>
<td>25</td>
<td>Re-creation</td>
<td>13</td>
</tr>
<tr>
<td>19</td>
<td>Context</td>
<td>19</td>
<td>24</td>
<td>Conversion</td>
<td>9</td>
</tr>
<tr>
<td>26</td>
<td>Literary form</td>
<td>19</td>
<td>2</td>
<td>Culture</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number</th>
<th>Node</th>
<th>Degree value</th>
<th>Number</th>
<th>Node</th>
<th>Degree value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Language</td>
<td>18</td>
<td>31</td>
<td>Cognitive disposition</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>Communication</td>
<td>18</td>
<td>33</td>
<td>Contextual effect</td>
<td>15</td>
</tr>
<tr>
<td>15</td>
<td>Informative function</td>
<td>18</td>
<td>36</td>
<td>Fidelity rule</td>
<td>15</td>
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<tr>
<td>27</td>
<td>Grammar</td>
<td>18</td>
<td>12</td>
<td>Target culture norms</td>
<td>14</td>
</tr>
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<td>32</td>
<td>Communicative act</td>
<td>18</td>
<td>22</td>
<td>Foreignization</td>
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</tr>
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<td>34</td>
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<td>Region</td>
<td>9</td>
</tr>
<tr>
<td>35</td>
<td>Coherence rule</td>
<td>18</td>
<td>30</td>
<td>Ideology</td>
<td>8</td>
</tr>
<tr>
<td>13</td>
<td>Source text of translation</td>
<td>16</td>
<td>2</td>
<td>Culture</td>
<td>7</td>
</tr>
<tr>
<td>7</td>
<td>Direct translation</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Context</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Literary form</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### A. ANALYSIS OF THE APPLICABILITY OF CONTEMPORARY TRANSLATION THEORIES

After finding the theories to which the core factors belong, we obtain the applicability of 10 contemporary translation theories, as shown in Table 5.

As shown in Figs. 4-7, larger nodes have more edges in the network. The more core factors that are embodied in publicity materials, the more important core factors are included in the publicity material translations.

If the publicity materials embody more core factors from a contemporary translation theory, then this theory has more practical significance for the publicity translation process. As shown in the networks, a higher number of core factors and edges indicate that the contemporary translation theories are more applicable in guiding the publicity translation process.

In general, Skopos Theory and Relevance Theory are 100% applicable for guiding translation of publicity materials. Since translation of publicity materials is purpose-oriented, translators should follow the three principles of the Skopos Theory. The Relevance Theory focuses on the communication background, readers’ expectation and culture, which are essential parts of the translation of publicity materials.
**TABLE 5.** The applicability of 10 contemporary translation theories to publicity translation at the $D \geq 150$ threshold.

<table>
<thead>
<tr>
<th>Theories</th>
<th>Skopos Theory</th>
<th>Relevance Theory</th>
<th>Functional Equivalence</th>
<th>Eco-translatology</th>
<th>Toury’s Norm Theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>The English language publicity material network</td>
<td>Number of factors 3</td>
<td>3</td>
<td>5</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Applicability 100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>80%</td>
</tr>
<tr>
<td>The Chinese language publicity material network</td>
<td>Number of factors 3</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Applicability 100%</td>
<td>100%</td>
<td>80%</td>
<td>50%</td>
<td>40%</td>
</tr>
</tbody>
</table>

By analyzing the translation of publicity materials, we can obviously see their significance.

Functional Equivalence, Eco-translatology, and Toury’s Norm Theory also play significant roles in the translation of publicity materials. Nida uses contemporary linguistics to solve translation problems, which provides references for the translation of publicity materials. Eco-translatology, which is a newly emerged translation theory, aims to conduct an integrative research study on translation from the perspective of ecology. Translation of publicity materials can be improved through selection and adaption. Norms are essential for the translation of publicity materials because the purpose of translation is to spread correct and adequate information, in which norms are indispensable.

The Theory of Cultural Turn, Newmark’s Translation, Polysystem Theory and Theory of Context are less suitable for guiding translation practices. Although these theories cover some necessary factors, such as language, they consist of many factors that are not suitable for guiding translation, such as religion.

Memetics is not suitable for translation practices. A meme, which is a cultural transmission unit, completes its reproduction and transmission through imitation. A long time is required to see the form of a meme’s reproduction. Therefore, a meme is not an appropriate guiding theory.

By comparing the English language and Chinese language publicity material networks, we found that the former manifested more core factors, which highlighted the function of contemporary translation theories, whereas the latter manifested less core factors, which adopted less contemporary translation theories. For example, in terms of Functional Equivalence, Eco-translatology, Toury’s Norm Theory and Theory of Cultural Turn, more core factors manifested in the English language publicity material network than in the Chinese language publicity material network, which implied that the English publicity materials were of higher quality. Therefore, when performing translations, Chinese bilingual media should learn to improve their translation quality by referring to appropriate contemporary translation theories. Only by can we spread the voice of China to other counties and allow the international community to truly understand China.

**IV. CONCLUSIONS**

We adopt complex network theory to analyze translations of publicity materials using a creative approach. Two networks are constructed by settling the core factors of translation theories as the nodes and linking edges to show the embodiment of core factors from contemporary translation theories in publicity materials. We visually evaluate the similarities and differences between the two networks. The similarities include isolated points, such as politics, religion, and customs, which indicate that these factors provide less guidance for the translation of publicity materials. Language, communication, and grammar have high degrees of value in both networks, which implies that these core factors have a larger number of edges and are in the centers of the networks. The differences include the core factors embodied in the English language publicity material network more than those in the Chinese language publicity material network. English language publicity materials tend to adopt domestication to spread Chinese information, whereas Chinese language publicity materials pay more attention to the accuracy of the transmitted information and thus prefer foreignization.

Moreover, we discuss the appropriate contemporary translation theories to guide publicity translation. We obtain the following conclusions. Skopos Theory and Relevance Theory are 100% applicable for guiding the translation...
of publicity materials. Functional Equivalence, Eco- 

tranlatology, and Tourny’s Norm Theory also play significant 

roles in the translation of publicity materials. The Theory of 

Cultural Turn, Newmark’s Translation, Polysystem Theory 

and the Theory of Context are less suitable for guiding 

translation practices. Memetics is not suitable for translation 

practices.

By exploring a new research perspective for the study of 

China’s publicity translation, this study helps promote study 

of China’s publicity translation at a more scientific and global 

level.

Since the network size is relatively limited, in future 

research, we will collect more publicity materials, expand 

the network and select more translation theories and core factors 

to analyze the translation of publicity materials and improve 

the scientific validity of the research.

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