

Hotspot Analysis and Path Evolution of the Three-Dimensional Transformation in Eco-Translatology

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Abstract

Purpose: To investigate the growth and evolution of research in the field of Eco-translatology, the research particularly focuses on the three-dimensional transformation concept and its development in China since 2010. By analyzing co-citations and co-occurring mappings, the research aims to identify the main patterns, hot topics, and the development trajectory of this interdisciplinary field. **Methodology:** The methodology employed in this research is the CiteSpace software for visualizing and analyzing the core database literature references obtained from the China National Knowledge Infrastructure (CNKI). The study applies a bibliometric approach, focusing on the co-occurrence of keywords and authorship to map the knowledge structure and identify research hotspots. **Findings:** 1) From the perspective of basic research characteristics, based on the Eco-translation environment, domestic related research has shown a clear linear growth trend. However, the cooperation network among institutions and core authors is not close, and a research stronghold has not yet been formed; 2) From the perspective of research hotspots, the differences between the three-dimensional transformation's linguistic and cultural dimensions are of great concern in the field of cross-cultural communication, and areas such as subtitle translation, foreign publicity English translation, and red tourism are highly popular, but quantitative studies are scarce; 3) From the perspective of research trends, the fields involved in the three-dimensional transformation application research continue to expand to areas, such as ecological criticism and MTI translation teaching. **Value:** The study seeks to understand how the integration of translation activities with ecological concepts has shaped the discourse and practices within Eco-translatology. This interdisciplinary approach also presents an emerging paradigm where digital humanities tools are envisioned to have a pivotal role.

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Keywords

Three-Dimensional Transformation, Eco-Translatology,
Eco-Translation Environment, Research Hotspots,
Cross-Cultural Communication

1. Introduction

Twenty years after its inception, Eco-translatology has developed into a major line of inquiry and since been armoured with its own theoretical framework. And it has been constantly evolving, whose philosophical values and functions have been extensively explored (Hu & Li, 2022). The connotation of eco-paradigm lies in the harmonious symbiosis of “translator’s survival” (life), “textual life” (life) and “translation-environment ecology” (eco-) and thus forms an integration of “eco-life” of eco-translatology as its hardcore, which has its unique characteristics and advantages such as pluralistic complex methodology, organic harmonious symbiosis and comprehensive ecologicalized ontology (Hu & Wang, 2021).

In recent years, Eco-translatology studies have shown a trend of vigorous development in terms of research paradigm, research fields, and research methods, and have become a hot topic among scholars both at home and abroad (Fang, 2024; Jiang et al., 2011; Wang, 2021b). Current academic research can be broadly divided into three categories: 1) For theoretical reviews, Huang and Wang (2021) examined how the theory was critically received and highlights several directions for future research through drawing on over ten reviews of two most seminal works of Eco-translatology. Fu (2023) drew on sociological theories and proposed that Eco-translatology could be re-conceptualized as a coherent system encompassing both a subjective construction and an objective existence. 2) For translation teaching, researchers (Zhang & Xu, 2022; Deng, 2012) combined ecological rationality, ecological aesthetics to explore MTT’s pedagogical implications and potential benefits. 3) For translation practice, research mainly focuses on tourism translation and discusses the problems of English translation of public signs through three-dimensional transformation. Xue (2022) takes an Eco-translatology perspective to analyze several cases of translation errors or improper translation of public signs in the dimensions of language, culture, and communication, and proposes some measures for improvement. Eco-translatology is a translation practice that controls what, when and how weaker language users and translators translate. However, there are few research focusing on the core concepts of Eco-translatology.

Equilibrium is the most fundamental feature of any ecosystem, and it is also a core concept of Eco-translatology studies (Baker & Saldanha, 2019; Hermans, 2019). An important point is to maintain a balance between the ecology of the source text and the ecology of the target text (Jun, 2020). It can be said that Eco-translatology studies represent a view of “Translation as ecological balance”; and

the strategies and techniques of translation are the balancing skills of translation (Hu, 2013). Under the guiding principle of eco-translation balance, the evaluation criteria of translated texts are neither fidelity to the source text nor accommodation of the target readers. In human communication, language contains abundant human culture. Culture is the purpose and content of human communication, which takes place with language as the medium (Carbaugh, 2017; Knapp et al., 2007; Martin & Nakayama, 2009). Therefore, when translators transplant texts, they need to carry out transformation in three dimensions: the linguistic dimension, the cultural dimension and the communicative dimension. This three-dimensional transformation method is the translation method of Eco-translatology studies (Hu, 2011). From a microscopic perspective, Eco-translatology is a translation practice that controls what, when and how weaker language users and translators translate (Cronin, 2017). As one of the many focal points of macro Eco-translatology theory, the three-dimensional transformation concept mainly occurs at the level of translation operations, emphasizing the importance of using multi-modal corpus data for transformation and interaction in Eco-translatology. During the vigorous development of Eco-translatology in China, Professor Hu made brand new interpretations and definitions of translation behaviors and translation processes, emphasizing that translators' subjectivity should play an active role in translation practice activities, giving the three-dimensional field broader application prospects. However, there are still many challenges in the development of Eco-translatology in China, such as insufficient theoretical systematicness and depth, how to incorporate cultural values into Eco-translatology. In addition, discussions of problems tend to be single, with less discussion of translation problems from the overall systematicness of the translation ecosystem.

From the above analysis, this study conducts visualized knowledge mapping analysis on the research institutions, core authors, co-occurrence of keywords and clustering, prominent hot topic words and other aspects of three-dimensional related literature in China, so as to probe into the research hotspots and evolution trends of three-dimensional studies in translation teaching and translation practice.

2. Methodology

2.1. Instrument

CiteSpace, fully referred to as CitationSpace, is an information visualization software developed in Java by Professor Chen (2004) of Drexel University, USA. It is primarily based on co-citation theory and Pathfinder network scaling, among others, to conduct bibliometrics on specific domain literature collections. Its aim is to uncover the key paths and knowledge inflection points in the evolution of a subject area. This is achieved through the creation of a series of visual maps, which helps analyze the potential driving mechanisms of disciplinary evolution and explore the frontiers of disciplinary development (Chen et al., 2015; Hou et al.,

2018). This paper adopts bibliometric method, using the CiteSpace software (Advanced version 6.3.R1) to draw mapping knowledge domains (MKD), which objectively presents the trends and changes of the three-dimensional transformation research under the perspective of Eco-translatology studies.

2.2. Data Collection

This study primarily conducts data retrieval through the CNKI database, with the literature sources mainly comprising domestic journal articles published from 2010 to 2023. The retrieval process is themed around “*Eco-translatology studies* AND *Three-dimensional transformation*,” followed by manual screening to exclude duplicate, irrelevant (e.g. conference, magazine) literature, resulting in a total of 859 related papers. The first paper related to three-dimensional transformation research in Eco-translatology was published in 2010. Hence, the time span of this study is set from 2010 to 2023. The literature is exported and downloaded in RefWorks format, automatically saved as a TXT file, preparing for CiteSpace data analysis (see Figure 1).

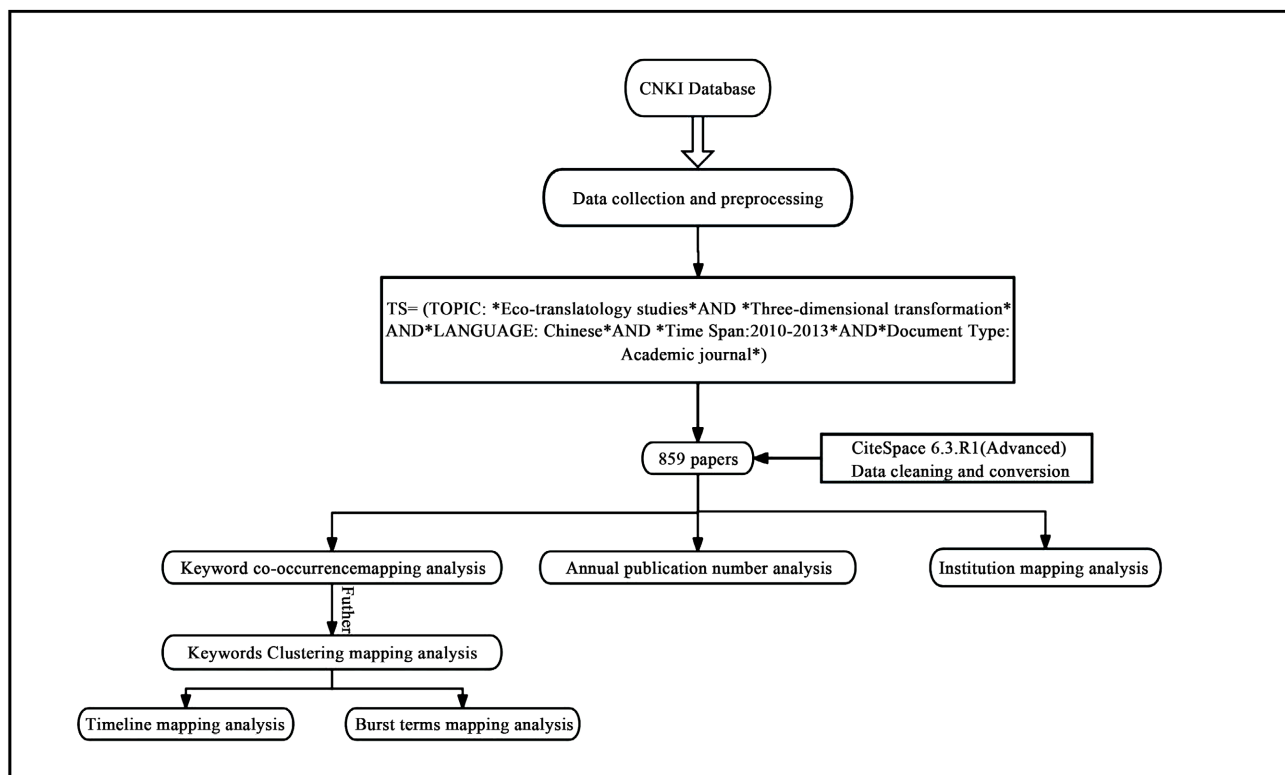


Figure 1. Data collection flow chart.

By using CiteSpace 6.3.R1 for data conversion, co-occurrence mappings suitable for CiteSpace analysis were obtained. When analyzing the co-occurrence mappings, we selected the appropriate node types and time slicing before using the clustering analysis feature in the software to macroscopically organize domestic research topics on three-dimensional transformation.

3. Result

3.1. Publication Years and Evolution of Stages

The annual publication volume in a research field is an important indicator for evaluating the development stage of scientific research in the field and predicting future development trends (Zhou et al., 2023). **Figure 2** depicts the distribution of domestic literature related to three-dimensional transformation research from 2010 to 2023. From **Figure 1**, it can be seen that the years 2001-2010 represented the nascent stage of Eco-translatology studies in China, during which papers related to Eco-translatology studies were scarce, mostly published by Professor Hu domestically and internationally. The period from 2010 to 2014 marked the transition from the nascent stage to a slow growth period. Since Professor Hu introduced the concept of three-dimensional transformation in 2008, the development of Eco-translatology studies has been slow. During this period, Professor Hu led the field, publishing over 20 papers, and many scholars began to turn to this field, interpreting and elucidating the Eco-translatology theory proposed by Professor Hu (e.g., Hu, 2009; Sun, 2009; Wang, 2011), indicating that the theoretical research has gradually formed its unique theoretical framework and research models. As the theory further developed, steps were taken towards practical application. Interestingly, after the First International Conference on Eco-translatology studies, organized by the International Association and held in November 2010 at Macao Polytechnic Institute, successive scholars turned to study this field. For example, Chen (2010) analyzed several propaganda slogans from the perspective of the Eco-translation environment of translation and the three-dimensional principles of Eco-translatology studies, attempting to break free from the constraints of traditional translation concepts. Shu (2010) guided the translation of public signs using the three-dimensional principles of Eco-translatology studies, interpreting the translation of the theme slogan of the Shanghai World Expo. Chen & Liao (2010) also elucidated the accuracy and timeliness of the English translation of the Shanghai World Expo volunteers' slogan through the three-dimensional principles of Eco-translatology studies, which coincides with Professor Hu's assertion that Eco-translatology studies align with the direction of contemporary societal and academic development (Hu, 2008). The years 2015-2017 marked a stable growth period, with an average annual publication volume of more than 48 papers despite a declining trend. It's not difficult to analyze that the birth and growth of any theory will continuously expand and extend over time. The continuous improvement of Eco-translatology theory also indicates that theory must ultimately be applied to practice, and the emergence of a large number of practical application papers further supports the robust development of Eco-translatology studies. The years 2018-2023 represent a rapid development period for three-dimensional transformation research. A large volume of literature emerged like mushrooms after rain, especially in 2021 when the number of publications peaked at 128. Although there was a decline in 2024, by October 2023, 91 papers had already been

Overall, over the past decade, domestic research on the three-dimensional transformation has been within a continuously developing paradigm, exhibiting strong research interest and promising prospects.

3.2. Author Co-Occurrence Mapping Analysis

Utilizing CiteSpace6.3. R 1 for visual mapping analysis with *AUTHOR* as the node type on 859 datasets, we got the results as shown in **Figure 2**. Based on the data “N = 331, E = 65” in the top left corner of **Figure 2**. E represents the connections, the lines between nodes indicate the relationships between authors; the thicker the line, the higher the frequency of co-occurrence in the same literature (Zhang, 2016; Radhakrishnan et al., 2017; Ding et al., 2001).

From the co-occurrence knowledge mapping analysis, it can be concluded that Han Zhulin, with six papers, has the highest number of publications in the three-dimensional transformation research field, further advancing the implicit development of the discourse system within Eco-translatology studies. Other authors with a significant number of publications include Tao Xiaoting (5 papers), Feng Dandan (3 papers), Liu Baoqiang (3 papers), Liu Caili (3 papers), Liu Haiyan (3 papers), Liu Shuzhen (3 papers), Liu Ruiling (3 papers), and Liu Yanhua (3 papers). Firstly, from a qualitative analysis perspective, the researchers' directions are diversified, covering areas such as foreign language education theory and practice, Chinese language and culture, translation and socio-cultural studies, classical translation, applied linguistics, and English translation studies. For example, Professor Han had been dedicated to the study of translation studies and Chinese language and culture, while Professor Li deeply investigated translation and socio-cultural studies. Secondly, under the guidance of the three-dimensional transformation theory, many scholars have conducted studies on translation themes, such as ecological aesthetics, translation strategies and methods, culturally loaded words, and translation teaching, like Feng (2021) who approaches from an aesthetic angle aiming to enhance the real concern of Eco-translatology studies and fully exert the constructive power of translation in harmonious ecological environment and ecological civilization. Zhang and Xu (2022) studied translation activities from the perspective of Eco-translatology studies, integrating theory with translation teaching, discussing classroom reform and innovative development in Master of Translation and Interpreting (MTI) institutions. However, observation of the map shows that the collaboration relationship among researchers in this field is not pronounced, with weak citation relationships, and overall presents a “dispersed” state. Possible reasons include disciplinary differentiation, differences in research directions, lack of a common platform, and uneven distribution of funds and resources.

Price's law can calculate the core author group in a research field, with the formula $M = 0.749(N_{\max})^{1/2}$, where N_{\max} is the publication number of the most prolific author, and M is the minimum number of publications a

distinguished author should have (Wang, 1998). Using the included data, the M for the domestic three-dimensional transformation research field calculates to approximately 1.85 publications. Therefore, authors with two or more publications are considered core authors in the field, totaling 50 individuals. Their cumulative publication count is 120, accounting for only 13.96% of the analyzed literature, indicating that the core scholars currently deeply exploring three-dimensional transformation research are still few. The map shows only six visible collaboration relationships (e.g., Liu and Wang; Yu and Chen; Han and Guo), and the author collaboration network density of 0.0012 also indirectly confirms that most scholars currently conducting three-dimensional transformation research in China are working independently, with research areas being quite fragmented, not forming a stable, highly cohesive research group, nor a network of mutual relationships among authors (see Table 1).

3.3. Institution Co-Occurrence Analysis

By conducting quantitative analysis on the distribution institutions in a specific research field, we can understand the participation and collaboration within the field. In order to investigate issues related to the publishing institutions in the three-dimensional transformation research, the author has employed CiteSpace6.3. R1 to perform a visual analysis on the relevant data, setting the node type to Institution and generating related visual maps (Figure 4). According to the data in the top left corner, “N = 317, E = 24”, the network density is relatively low being at 0.0005. This indicates that there are 317 domestic institutions involved in this research, among which only 24 pairs of institutions have collaborative relationships in three-dimensional transformation research (see Figure 5).

Table 1. Author publication distribution.

Number	Year	Author
6	2013	Han Zhulin
5	2014	Tao Xiaoting
3	2014	Feng Dandan
3	2015	Liu Baoqiang
3	2018	Liu Caili
3	2018	Liu Haiyan
3	2016	Liu Shuzhen
3	2019	Liu Ruizhen
3	2019	Liu Yanhua
3	2012	Si Jitao

foreign publicity translation, English translation, communicative dimension, cultural dimension, linguistic dimension, and public signs. This indicates that since 2010, the research hotspots of three-dimensional transformation have mainly focused on these areas. Eco-translatology and three-dimensional transformation, as the search terms of this study, are not analyzed further. Apart from these two, the other keywords represent the hot topics in the domestic three-dimensional transformation research field from 2010 to 2023. Specifically, subtitle translation, English translation, translation strategies, communicative dimension, cultural dimension, linguistic dimension, and public signs have larger nodes than translator centeredness, translation teaching, and ecological aesthetics, and also contain more annual rings within the nodes. This further illustrates that domestic scholars in three-dimensional research have been most concerned about the subtitle translation strategies of translators translating movies into English with respect to the macro ecological environment, nearly all based on the three-dimensional principles, over these thirteen years. For example, [Yang \(2019\)](#) attempted a case analysis of the subtitle translation of the movie *Youth* from the perspective of three-dimensional transformation, discussing whether the translator's work helps maintain the harmony of the Youth Eco-translation environment. [Guo and Zeng \(2022\)](#) took the English titles of Chinese films awarded at the three major European international film festivals over the past decade as the subject of study, using Eco-translatology theory to analyze and discuss the English translation strategies of these award-winning domestic films, aiming to achieve the adaptive transformation. The emergence of this phenomenon matches the large volume of practical application articles that have emerged over these thirteen years, as mentioned earlier. However, during this period, research on minor language ([Pan, 2023](#)) and metaphor mapping ([Wang, 2021a](#)) remains a field worthy of attention and further exploration.

The application research on Eco-translatology focuses on three-dimensional transformation, which has shown advantages in various fields due to the rapid development of empirical studies on this transformation.

At the theoretical level, researchers have explored knowledge in ecological culture, ecological linguistics, ecological philosophy, and ecological criticism theory. For instance, [Chen \(2022\)](#) pointed out that domestic scholars are particularly concerned with the issue of Chinese ecological culture Going Global. [Zhang et al. \(2020\)](#) analyzed the English translations of the reports from the 17th, 18th, and 19th National Congresses of the Communist Party of China (NCCPC) from the perspective of adaptation and selection theory, aiming to explore the English translation methods for ecological cultural vocabulary and syntax. [Miao and Wang \(2014\)](#) examined the future of Eco-translatology studies by scanning the theoretical and application schema constructed in domestic Eco-translatology study, combined with the development of ecological criticism in China and its core concepts.

At the methodological level, researchers have studied technical issues in translation, such as the translation of specialized terms and pragmatic adaptation in cross-cultural communication. [Peng and Chen \(2023\)](#) took the English translation of *Spine-Related Diseases* as an example, analyzing the translation effects of bone

injury technique terms from linguistic, cultural, and communicative aspects. [Dong and Gao \(2011\)](#) discussed how practical texts can achieve pragmatic equivalence from the dimensions of language, culture, and communication through selection and adaptation, from the perspective of Eco-translatology studies that integrate macro-ecological concepts and micro-textual operations.

In terms of ideological transformation, researchers have explored the transmission and transformation of political (translation of foreign publicity texts), social (adaptation and selection theory), and environmental ideologies (translation of tourism propaganda, red tourism). For example, [Hu & Yu \(2021\)](#) discussed the adaptation and selection in the English translation of the Marquis of Haihun's external propaganda from the dimensions of language, culture, and communication; They deeply analyzed improper English translations in the Haimen Marquis propaganda discourse and revised them, providing a novel and broader perspective for interpreting, understanding, and deepening the study of English translation of the Marquis of Haihun site propaganda. [Liu \(2011: p. 75\)](#) discussed the English translation of red cultural tourism materials from the perspective of three-dimensional transformation, elucidating the role of translators' subjectivity in translation practice.

Among these, keywords like subtitle translation, English translation, and public signs are shown in orange-red at the outermost layer with an expanding trend, indicating that such keywords are rapidly developing and align with the current hotspots and frontiers in three-dimensional transformation research (see [Figure 3, Table 2](#)).

Table 2. High-frequency keywords and high-centrality keywords.

Frequency	Centrality	Year	Keyword
311	0.57	2011	Three-dimensional transformation
67	0.08	2012	Subtitle translation
49	0.14	2012	English translation
45	0.14	2011	Ecological environment
39	0.04	2013	Translator centeredness
38	0.02	2013	Linguistic dimension
37	0.05	2013	Red tourism
31	0.07	2012	Foreign publicity translation
29	0.07	2012	Ecological aesthetics
24	0.04	2014	Public signs
16	0.04	2011	Translation
10	0.02	2013	Adaptive selection
10	0.04	2019	English translation strategies
9	0.03	2013	Multidimensional transformation

3.5. Cluster Mapping Analysis

To conduct an in-depth analysis of the hotspots in three-dimensional transformation research, this paper clusters the keywords knowledge graph, thereby condensing the scattered distribution of keywords into clear clusters. The specific steps are as follows: Based on the keyword co-occurrence graph, keyword clustering was selected, and the LLR (Log Likelihood Ratio) algorithm was used. By computation, the research keywords clustering network visualization graph (Figure 3) can be obtained. The CiteSpace (6.3.R1) software provides two indicators, modularity value and average silhouette value, as the basis for judging the effectiveness of the graph drawing. Generally, a Q value within the interval [0, 1) (i.e., $0 \leq Q < 1$) and a $Q > 0.3$ mean that the clustering structure is significant; when the S value is 0.7, the clustering is convincing, and if it is greater than 0.5, the clustering is considered reasonable (Chen, 2006). According to the data in the upper left corner of the graph, with a Q value of 0.66969 and an S value of 0.9459, it indicates that the nodes within clusters are closely connected, and the thematic relevance of nodes within clusters is strong, making this research meaningful and valuable.

Based on the keyword clustering mapping, the Summary Table/Whitelists function in Clusters Explorer is used to obtain the three-dimensional transformation keyword co-occurrence network clustering table (Table 3). The S values of each cluster are all greater than 0.7, indicating that the members within each cluster theme are closely related, and the homogeneity is high.

Table 3. Co-occurrence network clustering table of keywords.

Cluster ID	Size	S-value	Representative keywords within the cluster (Top 5)
0	85	0.995	Three-Dimensional transformations; Adaptive selection; Translator's responsibility; Selective adaptation; Cultural dimension
1	37	0.915	Translation; Selection; Adaptation; Eco-translation; Eco-translation environment
2	35	0.916	English translation; Public signs; Ecological ethic; Foreign publicity text; Red tourism
3	26	0.949	Linguistic dimension; Communicative dimension; Cultural dimension; Translation teaching; Multidimensional transformation
4	18	0.874	Translation strategy; Ecological environment; Children's literature; Export advertising; English translation of Zen poems
5	18	0.879	Foreign publicity translation; Trademark translation; News translation; Adaptive selection; Chinese trademark
6	18	0.967	Subtitle translation; Animated movie; Corpus; Linguistic dimension; Translation criticism
7	11	0.95	English translation strategies; Foreign publicity translation; Domestication; Foreignization; Ecological aesthetics
8	9	0.89	Integration of culture and tourism; Red tourism; Public signs; Legge; Party and government documents

Figure 6 reveals the map presenting nine clusters, respectively: Three-

Dimensional Transformation (#0), Translation (#1), English Translation (#2), Language Dimension (#3), Translation Strategy (#4), Foreign publicity Translation (#5), Subtitle Translation (#6), English Translation Strategy (#7), and Cultural-Tourism Integration (#8), representing the hot topics in the field of Three-Dimensional transformation research. By integrating this with the keyword clustering knowledge mapping and the co-occurrence network clustering table from **Table 3**, it is observed that some clusters overlap, with the same keyword appearing in multiple clusters (e.g., Language Dimension, Red Tourism, Foreign publicity Translation), among which, labels such as Three-Dimensional Transformation, Subtitle Translation, and English Translation show significant clustering tendencies, indicating that these keywords are aligned with the current hotspots and focal points in three-dimensional research. Additionally, certain clusters like subtitle translation (#6) appear more independent, with less connection to others, highlighting the unique nature of research in this theme.

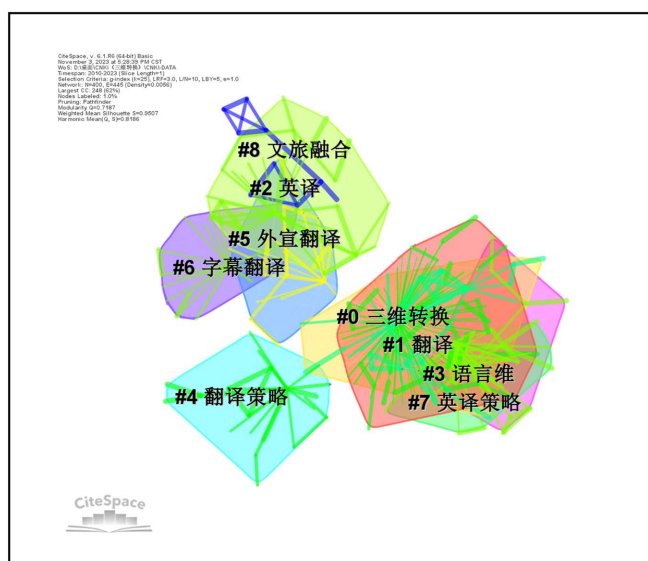


Figure 6. Keyword clustering mapping.

Through analyzing and summarizing the knowledge map of Three-Dimensional research in China over the past decade, along with selected sample literature, the following key research themes and hot areas have been identified:

1) Adaptation of Three-Dimensional Transformation in Cross-Cultural Tourism Environments

As an important medium for language communication in cross-cultural tourism, tourism culture translation fundamentally relies on language to transform, elucidate, and disseminate tourism culture information across cultures (Liu, 2012; Reinders & Benson, 2017). Issues arise such as how to reflect three-dimensional transformation in the process of tourism culture translation, how cultural differences in cross-cultural communication activities affect translators' selections, and how to bridge and mitigate these differences through cross-cultural translation.

Professor Hu (2014) noted that the adaptive selection of transformation in the Communicative dimension is the translator's adaptive selection of communicative intents between two languages during the translation process. This requires translators to focus on communication, ensuring the original communicative intent is reflected in the translation. As part of a cross-cultural communication process, translators have developed a fixed cultural psychological structure (Wu, 2024) and discourse transformation mode (Li, 2018) over time, which limits their absorption and acceptance of foreign cultures. However, in the context of globalization, guided by the Adaptation/Selection theory and the principle of three-dimensional transformation, researchers no longer promote the unilateral dissemination of Chinese cultural information but focus on the intersection and integration of Chinese and diverse cultures, emphasizing dynamic adaptive selection by translators. Scholars (e.g. Sun & Han, 2021; Luo, 2020; Hu & Guo, 2017) have mainly analyzed the Translator centeredness aspect of cultural transformation, including all translation activities determined by translators' judgments and decisions (Hu, 2004), highlighting the notion that translation should not only consider the translators' environment but also focus on the entire translation ecology and the life of texts, aiming for an ecological approach to translation.

2) The Selection of English Translation in the Foreign Publicity English Translation Environment

The translation of foreign publicity news holds significant importance in reality. Eco-translatology theory posits that the core of foreign publicity news translation lies in the translator's adaptation to the multi-dimensional ecological context of news, striving to construct adaptability and dynamic ethical selections in language, communication, and culture through the Eco-translation context of foreign publicity. This aims to enhance the dissemination of external propaganda news (Zhang et al., 2014). As a communicative and cultural phenomenon, translation into English is the most common form of foreign publicity news translation. Current research on the translation of external propaganda news mostly analyzes texts from a communication studies perspective (Hu, 2023a) to achieve optimal propaganda effects. Translation, as a mode of cognition and existence (Warren, 1989), requires translators to creatively accept the language, culture, and communicative context of the source text, aligning it with the language, culture, and communicative context of the target readers. Meanwhile, the concept of translation as textual transplantation indicates that translation is a dynamic process of seeking ecological balance and survival adaptation (Hu, 2021). Whether a text's life can exist in its transplantability, based on the adaptation/selection theory, involves a survival issue of eliminating the weak and keeping the strong through the pre, during, and post phases of text transplantation. This dynamic process involves continuous textual reconstruction and the transformation of the translator's ideology. Ran (2023) organized the political ecology, ideology, textual ecology, and the characteristics and current state of the news translation community, highlighting the need for translators to play a leading role in the news text transplantation process. If foreign publicity news translations are to go global, the adaptability of

the translated text determines its ecological timeliness.

3) Adaptation of Red Tourism in the Cultural Foreign Publicity Environment

Under the Belt and Road Initiative proposed by President Xi of China, red tourism, a form of tourism with educational value and special significance, not only meets the diversified needs of the tourism market but also serves an educational function. The translation of red tourism for foreign publicity is part of the initiative to bring Chinese culture to the world and is crucial for spreading the national image abroad. Due to the cultural, temporal, and ethnic limitations of red tourism itself, related research is scarce, mainly reflecting issues such as the choice of red culture-loaded words, overly narrow research focus (Sun, 2017), and language and pragmatic errors (Wang, 2022). These issues highlight the need for external propaganda translation work to not only showcase political awareness but also cultivate an awareness of exporting cultural capital. This includes establishing a multi-dimensional Chinese discourse system based on a red stance. Cultural adaptation mainly manifests in translation choices (e.g., language forms, rhetorical transformation, cultural compensation, etc.), target audience, cultural environment, and modes of thinking. High-quality external propaganda translation can enhance the international discourse system and cultural soft power, aligning with Professor Hu's original intention in proposing Eco-translatology.

3.6. The Evolution Path of Three-Dimensional Transformation Research

This paper also uses the burst detection function in CiteSpace to reveal the frontiers and development trends of three-dimensional transformation research. Burst terms refer to terms whose frequency of use suddenly increases significantly or appear abruptly within a short period of time (Boyack & Klavans, 2010). Their dynamic characteristics can more accurately reflect the research frontiers of a discipline. Here, burst year represents the time of significant change in the prominence of these terms (Feng et al., 2014). Based on the keyword co-occurrence network map, selecting a keyword burst threshold of 0.4, and performing burst detection on the keywords, 20 burst terms are extracted (as shown in Figure 3), representing the frontier transitions in the three-dimensional transformation research.

Further analysis of the map can generally be divided into three stages. The first stage is from 2012 to 2015, a period known for the slow growth of three-dimensional transformation research, as evidenced by Figure 1. During this period, Professor Hu led the field with more than ten published papers. The table shows that the strengths of Selection and Adaptation are both 8.26, with ecological environment and translator centeredness reaching strengths of 7.65 and 7.49, respectively, reflecting that translation is essentially an activity of translators making selections to adapt to the Eco-translation environment. In this activity, language, culture, communication, society, authors, readers, and other subjects form an interconnected, interactive, and communicative organic whole—the Eco-translation environment. The process in which translators best adapt and select within this

environment is what Eco-translatology studies advocate as “survival of the fittest.” During this process, the three elements target language text, source language text, and cultural background are considered holistically to discuss the ecological relationships and processes of translation. Translation teaching (7.33) and interpretation (5.36) were also research hotspots during this period, as demonstrated by scholars such as [Deng \(2012\)](#), which discussed establishing new models for MTI interpreting teaching, and [Huang \(2014\)](#), which constructed an ecological interpreting model based on the three-dimensional theory to address deficiencies in traditional interpreting teaching focusing solely on interpreting skills and language training. This shift in focus undoubtedly injected new vitality into domestic Eco-translatology studies at that time.

The second stage is from 2015 to 2020, which saw significant progress compared to the past years. As shown in [Table 4](#), Tourism translation (7.72), Public signs (4.22) and English translation strategies (4.98) are high-intensity research hotspots of this period. Some scholars (e.g., [Luo, 2020](#); [Yue, 2019](#)) began to explore translators, analyzing translator generation, roles, functions, and development, providing ecological rationale for the translation centeredness in Eco-translatology studies. As the government heavily promoted the development of the western regions, the translation of tourist spots related to ethnic minorities became a research hotspot, with scholars like [Sun \(2015\)](#) proposing Eco-translatology strategies for local proper nouns, public signage, and the maintenance of foreign relations with ethnic minorities. Research from the budding phase of Eco-translatology studies was found to be mostly concentrated in the literary field, with minimal practical application studies in other areas like tourism, medicine, and economic trade. However, post-2017 (the latter stage of this period), many scholars began to diversify their research in Eco-translatology three-dimensional transformation, seeking dimensional innovation and reflecting the diversity and vitality of Eco-translatology studies as they began researching from various fields and directions, with empirical studies taking a dominant position.

The third stage is from 2020 to the present, where subtitle translation (6.21), foreign publicity translation (6.86), red tourism (7.96), and English translation of public signs (5.96) are the research hotspots within the three-dimensional transformation field, with red tourism having the highest intensity. The popularity of foreign publicity translation and subtitle translation continues into 2024 and is expected to persist. In the era of globalization, the opportunity for foreign publicity has increased, leading some scholars to turn towards translation in this category. Scholars like [Hu and Yu \(2021\)](#) have performed qualitative analyses based on instances of foreign publicity translation, discussing adaptation and selection from language, cultural, and communicative dimensions. The unstoppable trend of Chinese culture going global has made the translation of red tourism cultural propaganda crucial for spreading Chinese red culture and expanding tourism resources, holding significant contemporary relevance. For example, [Hu \(2023b\)](#) focused on VR guide words from the official WeChat public account of one of

Guangdong's most important red tourism attractions-Shanwei Red Square in the Red Palace-as a case study, conducting foreign publicity strategy research from the language, culture, and communication dimensions to better promote Guangdong's international brand of red tourism culture. Subtitle translation also plays a crucial role in the international stage of Chinese film works. The problems in film subtitle translation practice, such as inaccuracies, cultural misinterpretations, cultural element loss, and even mistranslations, are current challenges for translation researchers. The analysis above shows that the research hotspots during this period mainly focus on English translation strategies, three dimensions, film, and foreign publicity, indicating that Eco-translatology studies have indeed achieved remarkable results domestically, continuously expanding and enriching the multidimensional transformation field.

Table 4. Top 20 keywords with burst degree.

Keywords	Citation Bursts			
	Strength	Begin	End	Duration
Selection	8.26	2012	2014	
Adaptation	8.26	2012	2014	
Ecological environment	7.65	2012	2014	
Translator Centeredness	7.49	2013	2016	
Translation teaching	7.33	2013	2014	
Textual transplanting	8.43	2013	2015	
Ge Haowen	3.68	2013	2015	
Corpus	8.68	2013	2016	
Language	5.99	2013	2016	
Culture	5.48	2014	2015	
Interpretation	5.36	2014	2015	
Lin Yutang	5.12	2014	2016	
Children's Literature	4.96	2015	2017	
Tourism translation	7.72	2015	2019	
English translation strategies	4.98	2016	2017	
Public signs	4.22	2016	2017	
English translation of public signs	5.96	2019	2021	
Foreign publicity translation	6.86	2020	2023	
Red tourism	7.96	2021	2023	
Subtitle translation	6.21	2022	2023	

4. Conclusion

This paper conducts a visual analysis of the three-dimensional transformation research in domestic Eco-translatology studies using CiteSpace software, revealing a linear growth trend in the field over the past decade and the formation of a relatively stable research framework. The mapping analysis leads to the following conclusions:

1) In terms of the basic characteristics of the research, the three-dimensional transformation studies have gone through stages of inception, slow development, stable development, and rapid growth. A scholarly circle regarding Eco-translatology studies has been formed domestically. Shandong University of Science and Technology has the highest volume of publications, but there is generally no tight cooperation network formed between academic institutions (mainly schools of foreign languages) or among core authors. Researchers have begun to explore three-dimensional transformation studies based on corpora, translation teaching, ethics, etc., and attempt to apply them to actual translation processes.

2) In terms of research hotspots, researchers are exploring how to promote ecological ethical concepts of translation context balance in text analysis, translation processes, and translation effects. The roles of language, culture, and communication dimensions are also under scrutiny, particularly in cross-cultural communication and the English translation of foreign publicity, as researchers seek to better eliminate and bridge differences between languages and cultures.

3) In terms of research trends, the content of research is gradually expanding from a single angle to multi-dimensional exploration, including translator subjectivity, metaphorical analogy, ecological ethics, textual transplantation, ecological criticism, etc. Red tourism has been burgeoning in recent years, and studies related to cultural-loaded words in ethnic regions and external translation and introduction are attracting scholarly attention, aiming for a more comprehensive and profound leapfrog development under the current “big ecology” perspective. The trinity research paradigm has been widely applied in translation practices, such as cultural publicity translation, subtitle translation, and red culture translation.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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