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A BIBLIOMETRIC ANALYSIS OF AUDIOVISUAL TRANSLATION(2004-2023) BASED ON CITESPACE

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Abstract:

This study employs a bibliometric analysis to assess trends in Audiovisual Translation (AVT) research from 2004 to 2023 using the Web of Science Core Collection as resources. The analysis targets identifying key researchers, influential institutions, principal research topics, and current and emerging hotspots in AVT. This study utilized CiteSpace for visualization, revealing a steady increase in AVT publications with a significant peak in 2019. Key researchers such as Jorge Diaz-Cintas and Frederic Chaume Varela emerged as influential figures, with a robust citation network underscoring their impact. Prominent institutions include the University of London and Autonomous University of Barcelona, indicating pivotal roles in AVT research. The analysis also identifies current hotspots like audio description and subtitles, with emerging trends in educational applications and cognitive aspects of AVT. The findings also point towards a dynamic expansion in AVT, emphasizing its interdisciplinary nature and the growing importance of technological integration in translation studies.

Keywords:

Audiovisual Translation, AVT, Bibliometric Analysis, Citespace, Translation

Introduction

In 2024, WordStream data reveals that average weekly online video viewing has surged to 16 hours, a 52% increase over the past two years. Social media videos are also seeing dramatically

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higher engagement, with shares increasing by 1200% compared to content that combines text and images. Video content enhances information retention significantly, with viewers retaining 95% of what they watch, compared to only 10% retention when reading text (McCormick, 2024). This underscores the effective role of audiovisual content in spreading information and fostering social interactions. As reliance on video for information and entertainment grows, so does the need for translating this content to ensure it is accessible to audiences across different languages and cultural backgrounds. Over the past three decades, Audiovisual Translation (AVT) has transitioned from a relatively new area in translation studies to a central focus within the field (Díaz-Cintas & Remael, 2007).

AVT is widely recognized as one of the most dynamic and rapidly expanding fields within Translation Studies, epitomizing the essential translation practice of the 21st century (Adams & Cintas, 2022). AVT adds complexity due to its multimedia nature, requiring an interdisciplinary approach for effective study that includes a deep understanding of the involved technological aspects (Bogucki & Deckert, 2020). In the past decades, this discipline has gradually transitioned from being text-centered, isolated, and focused on a single nation to being user-centered, collaborative, and international (Perego & Pacinotti, 2020). It now encompasses audience-oriented studies and explores research possibilities related to the perception of humor and eye-tracking, with a particular emphasis on making audiovisual content accessible to audiences with hearing and visual impairments. Additional research areas include collaborative translation and crowdsourcing, as well as fansubbing and fandubbing, which are popular forms of non-professional practice. Emerging research domains also feature the use of machines, neural machine translation, and speech translation applied to audiovisual or media content (Hrabčáková, 2023).

As the field of translation studies grows rapidly due to increased demand for audiovisual content in today's technology-driven era, the scope of research has expanded. It is essential to stay informed about emerging trends and pivotal shifts in the collective knowledge development within this field.

Scholars have employed bibliometric analysis methods to conduct visualization analyses in many translation fields, such as: legal translation (Li & Hu, 2022), feminist translation (Sun et al., 2023), translation education (Yan, 2021). In the field of AVT, however, there have been relatively few instances of visualization analysis. Peng and Zuo (2022) studied subtitle translation-related literature from 2012 to 2022, utilizing data from the Chinese CNKI database. However, due to this source limitation, their analysis may not provide a comprehensive overview of the overall trends in AVT research. This study utilizes literature from the Web of Science Core Collection spanning the past 20 years (2003-2023) for bibliometric analysis, aiming to provide a relatively comprehensive description of research in the AVT field in the last two decades. The study is designed to answer the following questions:

1. Who are the prominent researchers in the field of AVT?
2. Which institute is influential in this field?
3. What are the main research topics?
4. Why are the current research hotspots gaining importance?
5. How functional will the future research directions be?

Literature Review

AVT

AVT involves adapting content from the source language to the target language while considering the unique aspects of the audiovisual medium (Orero & Matamala, 2019). Key characteristics of AVT include synchronizing audio and visual elements, managing the duration and rhythm of segments, and integrating sound effects and music, as well as cultural references and contexts. Recently, there has been a notable evolution in AVT due to new text genres and methods of mediated communication, highlighting its growing significance in global media and entertainment. According to Díaz-Cintas and Muñoz Sánchez (2019), AVT is a specialized field that demands a mix of linguistic, technical, and creative skills.

AVT boasts a deep-rooted history and has seen considerable development over time, evolving in tandem with advancements in film and television technology. During the 1990s, advancements in technology like DVDs and digital TV ushered in new modalities of Audiovisual Translation (AVT), such as audio description and subtitling tailored for the deaf and hard-of-hearing. Audio description is an AVT technique that offers spoken descriptions of visual components—like scenery and actions—to enhance the accessibility of audiovisual materials for visually impaired viewers. Meanwhile, subtitling for the deaf and hard-of-hearing adds text captions to audiovisual content, assisting viewers who are deaf or hard-of-hearing in following along with the dialogue and sounds ((Díaz-Cintas & Remael, 2007; Díaz-Cintas & Muñoz Sánchez, 2019). Scholars and professionals in the field of AVT persistently investigate new theories, approaches, and techniques to enhance the quality and accessibility of audiovisual content for audiences worldwide.

Bibliometrics Analysis

Bibliometrics is a quantitative analysis and statistical method used to evaluate the quality and quantity of published scientific literature and to explore the current status, cutting-edge research, and trends in a specific field (Liu et al., 2020). An increasing number of researchers in their respective fields are using this method, with the most widely used software system being CiteSpace, developed by Dr. Chao-Mei Chen at Drexel University in the United States. According to Chen (2006), CiteSpace is a visualization software for literature analysis written in the Java programming language. It is capable of analyzing and displaying the trends and patterns in the development of a specific topic or field over a certain period. CiteSpace employs co-occurrence and co-citation methods, which play crucial roles in addressing practical issues such as: identifying the characteristics of a research frontier, categorizing a specialty, and promptly detecting emerging trends and abrupt changes.

Methodology

Data Collection

The primary source of data for CiteSpace is the Web of Science (Chen, 2014). Specifically, the Core Collection is selected for its important literature. The Web of Science has several ways to search for bibliographic records. The most basic search includes topic, author, and several other searchable fields. By setting "audiovisual translation" as the research topic, a search was conducted in the Web of Science Core Collection. This search produced 936 results from the period of 2004 to 2023. The records were exported as a plain text file for analysis with CiteSpace. The 'Export Record' option was set to "full record and cited references," making the

data suitable for CiteSpace analysis. The composition of these downloaded documents included: 758 Articles, 97 Book Chapters, 74 Book Reviews, 64 Proceeding Papers, 22 Early Access, 24 Editorial Material, 10 Review Articles, and 7 Books. The downloaded text file was renamed to include "download" and was then processed in CiteSpace for data processing and duplicate removal. The version used was "CiteSpace 6.2.R4 (64-bit) Advanced". No duplicates were found. Thus, the downloaded document data is ready for analysis with CiteSpace.

Data Analysis

By summarizing the references on the use of Citespace by Chen(2004, 2006), the following key concepts are outlined here to facilitate understanding of the knowledge map:

Node: A scientific knowledge graph is composed of colorful nodes and connections between nodes. Node types primarily include landmark nodes, pivot nodes, and hub nodes. Landmark nodes have the largest radius, pivot nodes are exclusive junctions of clusters or network patches, and hub nodes represent high degrees. Node size and frequency are related. For example, if references are used as node types, the nodes represent literature, and their size indicates the total citation frequency—higher citations result in larger nodes. The label size of each node is proportional to the article's citations, so larger nodes also have larger labels.

Tree Rings: Utilizing the functionality of tree rings can display information about different nodes. From the inside out, the tree rings correspond to time partitions from distant to recent. The thickness of a tree ring represents the frequency at which the literature is cited within a specific time partition—thicker rings indicate higher citation frequencies. The outermost purple ring annotates important turning-point literature (or authors, journals, and institutions, etc.) to make them more noticeable or prominent in the visual network.

Node Strings: The connections between nodes represent their shared citation relationships. The stronger the shared citations, the thicker the connections, indicating a closer relationship between the literature. By analyzing the trends in these connections, we can understand the development trends and connections between authors, countries, or topics in related research.

Burstness: The most frequently cited articles in the citation network of scientific papers are often the most recent ones. The recency effect explains why articles are considered outdated a few years after publication. The transient part essentially corresponds to the so-called research frontiers. The Burst-detection algorithm can identify newly emerging terms regardless of how many times their host articles have been cited. Therefore, new research frontiers can be revealed even before attracting a significant number of citations. Detecting burstness can help understand the academic frontiers in a particular research field.

Clusters: In CiteSpace II, current research frontiers are identified based on burst terms extracted from the titles, abstracts, descriptors, and identifiers recorded in the literature. These terms are then used as labels for clusters in the heterogeneous term and article network.

Timeline View: Highlights the temporal patterns between research frontiers and their knowledge base. The timeline view consists of a series of time zones arranged in chronological order from left to right to guide the research frontiers toward their knowledge base. The timeline view simultaneously displays cited articles and cited terms to emphasize the mapping between research frontiers and their knowledge base.

Citespace offers a variety of Node Types, including author, institutes, country, keyword, category, cited reference, cited author, term, cited journal, paper, and grant. In this context, author, institutes, keyword, cited reference, and cited author are primarily utilized here. These analysis results are sufficient to depict influential scholars, institutes, publications, research fronts, emerging research, specialties, and the development timeline of this field. Meanwhile, centrality is also employed to identify research hotspots, burstness function is used to identify emerging research areas, cluster analysis helps understand research domains, and timeline view aids in assessing the field's development.

Results and Analysis

Overall Development of AVT

The statistics of the publication years for the 936 literature in this study are as follows:

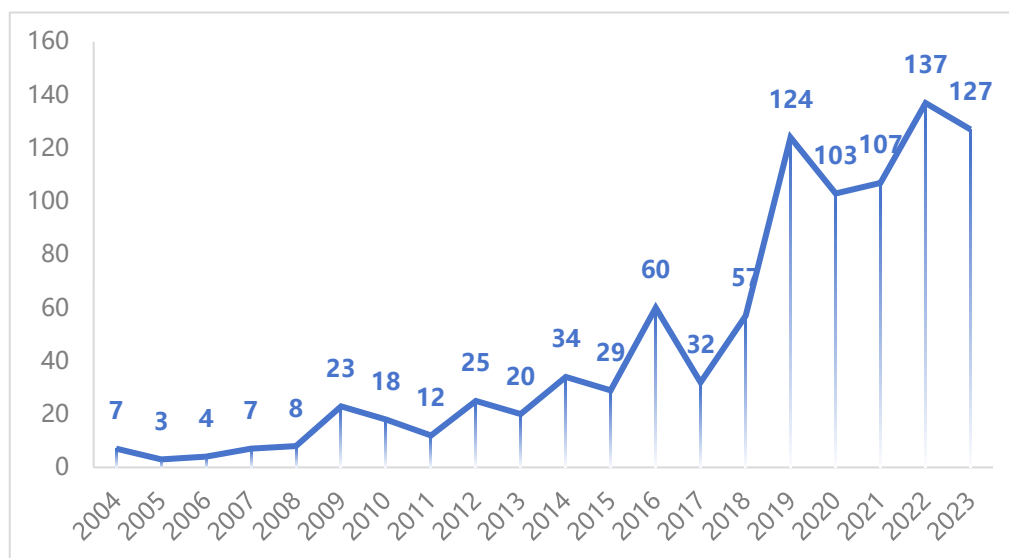


Figure 1 General Trends of Publication Years

From figure 1, the overall trend of AVT-related research development can be observed. The total number of publications on AVT shows an upward trend, with the period from 2004 to 2008 still in the early stages of related research, with relatively fewer publications. The years from 2009 to 2018 represent a developmental stage for AVT research. In 2019, there was a sudden increase in research intensity, followed by a slight decrease in 2020 and 2021, and then a resurgence in 2022, albeit with a slight decrease in 2023 compared to 2022. During the data processing, the analysis results from Citespace showed that out of the 936 publications, they spanned across 323 journals, involving 1100 authors from 108 different countries and regions. These authors were affiliated with 1113 different institutes. These data reflect the extensive international cooperation and diversity in academic activities in this field.

Key Researchers

The analysis conducted by researchers aids in understanding the collaborative relationships among researchers in the same field, and helps identify the right methods to foster sustainable development in that field (Liu & Chang, 2018). In this regard, the use of both "author" and "cited author" as node types helps to identify the most prolific researchers and the most influential scholars in the field of AVT study.

Prolific Researchers

Using "author" as the node type, the top 10 authors with a significant number of publications in the field of AVT research in this study samples include Anna Matamala, Jorge Diaz-Cintas, Agnieszka Szarkowska, Juan Pedro Rica Peromingo, Jan-Louis Kruger, Masood Khoshsaligheh, Rocio Banos, Aline Remael, Pilar Orero, Maria Pavesi, and Marie-Noelle Guillot. Their publication counts and starting years are summarized in the following table:

Table 1 Top 10 Prolific Authors

No.	Publications	Starting Year	Author
1	22	2007	Matamala, Anna
2	17	2008	Cintas, Jorge Diaz
3	14	2011	Szarkowska, Agnieszka
4	11	2016	Rica peromingo, Juan Pedro
5	11	2010	Kruger, Jan-Louis
6	11	2018	Khoshsaligheh, Masood
7	11	2013	Banos, Rocio
8	9	2011	Remael, Aline
9	9	2007	Orero, Pilar
10	8	2009	Pavesi, Maria

Influential Scholars

By using "cited author" as the node type, it is easy to identify which authors are cited most frequently and therefore have the greatest influence in the field. Utilizing the minimum spanning tree feature, the knowledge map of cited authors is generated as shown below:

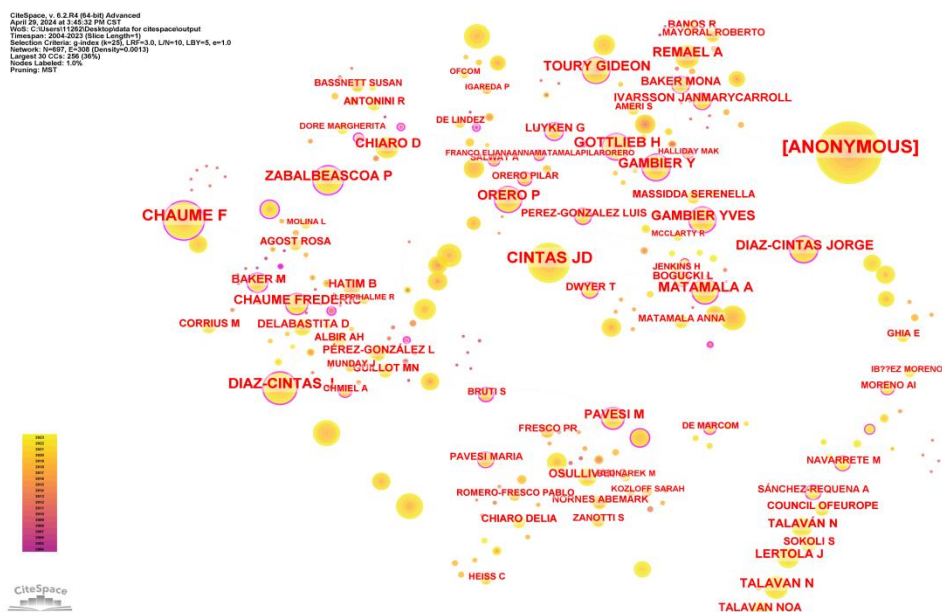


Figure 2 The Knowledge Map of Cited Author

As shown in the figure 2, larger tree rings indicate that scholars are cited more frequently. Apart from "Anonymous", among the authors with larger tree rings, indicating higher citation counts, there are instances like Jorge Diaz-Cintas, including variations such as "CINTAS JD," "DIAZ-CINTAS," and "DIAZ-CINTAS JORGE," generated due to variations in name standards.

Collectively, it has 451 citation records. Jorge Diaz-Cintas was first cited in 2008, reached a peak of 35 citations in 2019, experienced a slight decline in 2020, then saw an increase in citations from 2021 to 2022, followed by a decrease in 2023. This trend aligns with the overall research development trend of AVT. Therefore, it indirectly demonstrates the importance of Jorge Diaz-Cintas in the field of AVT research.

Frederic Chaume Varela ranks as the second most cited author, with a total of 203 citation records. He was first cited in 2004, with relatively low citation counts from 2004 to 2012. There was a slight increase in citations from 2012 to 2018, followed by a sharp increase to 25 citations in 2019, maintaining this level from 2019 to 2021. In 2022, the citation count further rose to 36 times before declining in 2023. This trend closely aligns with the overall trend in AVT research, with a surge in 2019, sustained interest from 2019 to 2021, and heightened activity in 2022, followed by a decline in 2023, which corresponds to the general development trends in AVT. This underscores Frederic Chaume Varela's significant academic standing in the field. Other scholars worth noting include those with high citation counts and high centrality (indicated by purple circles). These important authors include Anna Matamala, Henrik Gottlieb, Patrick Zabalbeascoa, Gideon Toury, Pilar Orero, Agnieszka Szarkowska, and Yves Gambier.

Key Institutes

The following figure 3 displays a knowledge map of the main institutes publishing literature in the WOS core collection by using “institutes” as node type. The size of each node corresponds to the number of articles published by that institution. The connections between nodes represent collaboration between institutions, with the thickness of the connections proportional to the number of collaborative publications between them.

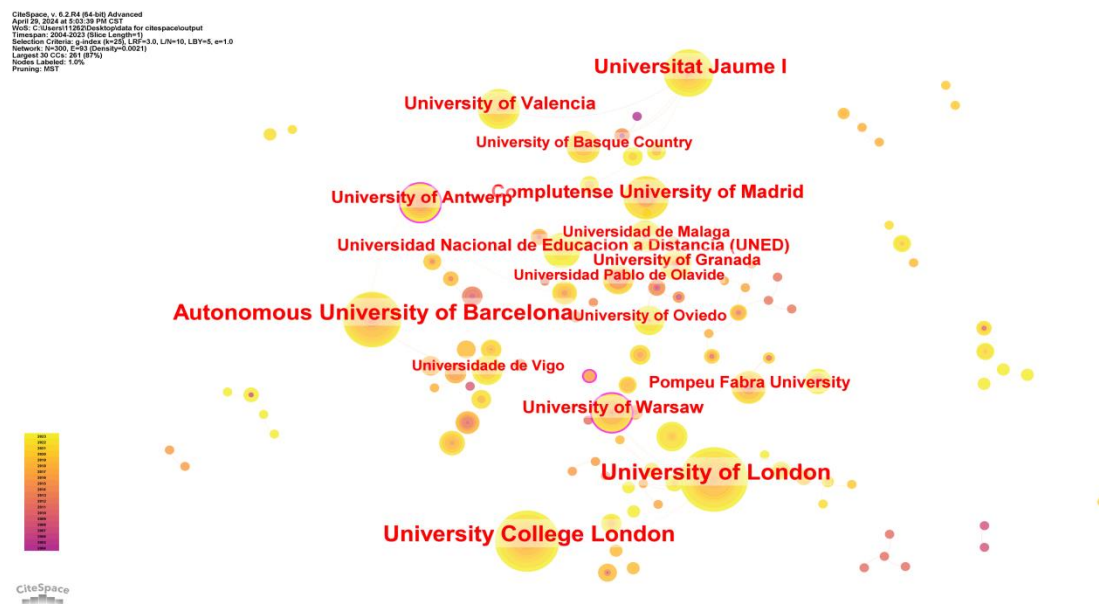


Figure 3 The Knowledge Map of Institutes

As shown in figure 3, among the top 10 most prolific research institutions in this study are: University of London, University College London, Autonomous University of Barcelona, Universitat Jaume I, Complutense University of Madrid, University of Valencia, University of

Warsaw, University of Antwerp, Universidad Nacional de Educacion a Distancia (UNED), and Pompeu Fabra University.

The two institutes with the highest centrality are the University of Antwerp and the University of Warsaw, indicating their pivotal role in AVT research. The high centrality of the University of Warsaw may stem from influential scholars such as Agnieszka Szarkowska, while the significance of the University of Antwerp may be attributed to prominent scholars like Aline Remael.

Key Publications

Using "references" as the node type allows for a better identification of literature that has garnered widespread attention and citation in the field of AVT research. The knowledge map of references is depicted in the following figure:

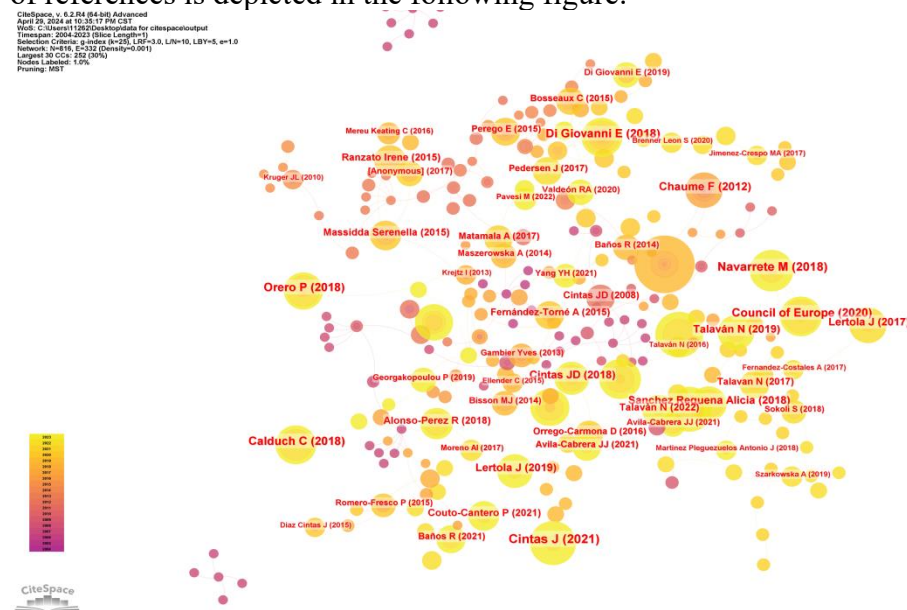


Figure 4 The Knowledge Map of References

Among the aforementioned references, those with larger tree rings represent publications that have been cited more frequently as references in the field of AVT, thus indicating their importance as noteworthy references in related research.

In the top 10 most cited references, four are books, including Pérez-González's *"Audiovisual Translation: Theories, Methods and Issues,"* Bogucki & Deckert's edited volume *"The Palgrave Handbook of Audiovisual Translation and Media Accessibility,"* Cintas & Remael's *"Subtitling: Concepts and Practices,"* and Yves Gambier and Elena Di Giovanni's *"Reception Studies and Audiovisual Translation."* Additionally, the Council of Europe's updated *"Common European Framework for Languages: Learning, Teaching, Assessment"* from 2020 is also a highly cited publication in this list. It was originally designed to provide a transparent, coherent, and comprehensive basis for the elaboration of language syllabuses and curriculum guidelines, the design of teaching and learning materials, and the assessment of foreign language proficiency. The remaining references are journal articles. Among these publications, three mention the integration of audiovisual translation with foreign language teaching/learning practices. The top 10 most cited references are listed below:

Table 2 Top 10 References

No.	Count	References
1	41	Pérez-González, L. (2014). Audiovisual translation: Theories, methods and issues. Routledge.
2	25	Lertola, J. (2019). Audiovisual translation in the foreign language classroom: applications in the teaching of English and other foreign languages. Research-publishing. net.
3	24	Talaván, N. (2020). The didactic value of AVT in foreign language education. The Palgrave handbook of audiovisual translation and media accessibility, 567-591.
4	23	Cintas, J. D., & Remael, A. (2020). Subtitling: Concepts and practices. Routledge.
5	21	Navarrete, M. (2018). The use of audio description in foreign language education: A preliminary approach. Translation and Translanguaging in Multilingual Contexts, 4(1), 129-150.
6	20	Calduch, C., & Talaván, N. (2017). Traducción audiovisual y aprendizaje del español como L2: el uso de la audiodescripción. Journal of Spanish Language Teaching, 4(2), 168-180.
7	20	Council of Europe (2020). Common European Framework for Languages: Learning, Teaching, Assessment. Cambridge: Cambridge University Press
8	19	Di Giovanni, E. (2018). Dubbing, perception and reception. Reception studies and audiovisual translation, 159-178.
9	19	Lertola, J. (2018). From translation to audiovisual translation in foreign language learning. TRANS: revista de traductología, (22), 185-202.
10	18	Orero, P., Doherty, S., Kruger, J. L., Matamala, A., Pedersen, J., Perego, E., ... & Szarkowska, A. (2018). Conducting experimental research in audiovisual translation (AVT): A position paper. JosTrans: The Journal of Specialised Translation, (30), 105-126.

Key Research Hotspots

Keywords represent the core content of an publication. If a keyword repeatedly appears in a research field, it is undoubtedly a hot topic in that field. The higher the frequency of repetition of a keyword, the hotter the research surrounding it (Liu & Chang, 2018). Therefore, to explore the research fronts, emerging research, specialties, and the development timeline of AVT, “keywords” is used as the node type to generate a knowledge map.

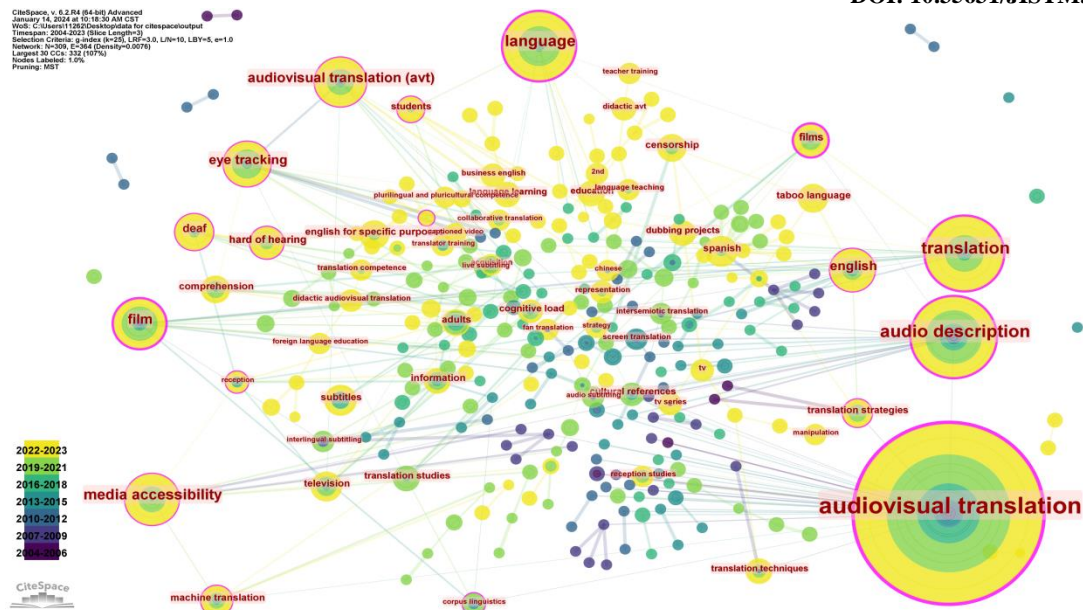


Figure 5 Knowledge map of Keywords

Under the Tree Rings view, it can be observed that research related to AVT (Audiovisual Translation) spans a wide range of fields. Overall, AVT research encompasses five main areas including: linguistics and translation studies, culture and society, education, cognitive and psychological aspects and applied studies. In linguistics and translation studies, key topics include dubbing effect(Romero-Fresco, 2020), discourse markers(Guillot, 2020), linguistic varieties(de Heredia & de Higes Andino, 2019), lexical explicitation(Ghia & Pavesi, 2016), intralingual subtitle(Jing, 2021), intersemiotic translation(Vermeulen & Escobar-Álvarez, 2021), interlingual subtitle(Wu & Chen, 2022), bilingual competence(Sabaté-Carrové & Tinedo-Rodríguez, 2023), communicative translation(Danan, 2010), corpus-based translation studies (Da Silva, 2020; Freddi, 2013; Mellinger, 2022), non-professional translation(Davier, 2022), contrastive analysis(Labarta Postigo, 2020), translation strategies(García, 2021), conceptual metaphor(Pedersen, 2017), corpus linguistics(Forchini, 2013; Jiménez Hurtado & Soler Gallego, 2013; López-García & Rodríguez-Inés, 2019; Peromingo, 2019; Rica Peromingo et al., 2014). It's worth noting that the use of Corpus-based approaches in AVT research has been relatively limited in Web of Science (WOS) publications, with only three articles found when using CTS (Corpus Translation Studies) as keywords. This area still offers room for exploration and requires more literature support. AVT research also extends to the exploration of culture and society, covering topics like gender mainstreaming(De Marco, 2016), minority language(Corrius & Espasa, 2023), cultural elements(Pozo & Tejera, 2023), gender awareness(Corrius et al., 2018), ageing of translation(Leszczynska & Szarkowska, 2018), language policies(Alfaro De Carvalho, 2012). In the field of education, relevant research topics include EFL learning(Rodríguez & Frumuselu, 2023), foreign language learning, second language acquisition, bilingual education(Enríquez Aranda & Mendoza García, 2023), teacher training(Arancon, 2023), primary education(Costales, 2021) etc. Additionally, AVT research delves into cognitive and psychological aspects, addressing topics such as cognitive load theory(Szarkowska & Gerber-Morón, 2019), musical emotions(Ramos, 2015). Applied studies related to AVT aim to provide societal assistance, with research in Medical and Health-related Topics covering areas like medical terms(Lozano & Matamala, 2009), blind and visually impaired(Rizzo & Spinzi, 2023), hard of hearing(Sánchez, 2022). These diverse areas of

research collectively contribute to the field of AVT and its multidisciplinary nature.

In the evolution of any discipline, significant turning points are inevitable, and translation studies are no exception. Identifying these turning points serves a crucial role in comprehending the overall trajectory of its development. CiteSpace, through automated calculations, identifies these pivotal moments. These nodes are represented by the purple outer rings in the knowledge graph. Notable turning points in AVT-related research topics include audio description, translation strategies, English, translation, films, language, students, eye tracking, film, media accessibility, deaf, hard of hearing, comprehension, machine translation, and corpus linguistics.

Insights can be gleaned from various research domains within AVT. Firstly, AVT research is inherently interdisciplinary, spanning linguistics, film studies, cultural studies, education, cognitive science, and more. This interdisciplinarity emphasizes the necessity for multidisciplinary approaches to delve deeply into AVT research and understanding. Secondly, AVT research covers a wide array of topics, including translation strategies, linguistic variations, cultural elements, gender awareness, educational methods, and cognitive load, underscoring its importance and impact across diverse domains. Thirdly, AVT research is closely tied to technological advancements, with translation technology, automatic speech recognition, and image transmission technologies playing pivotal roles, suggesting the potential for technology-driven applications and ongoing development of translation tools. Additionally, AVT research extends its purview to address cultural and social issues, encompassing considerations such as cultural elements, gender concerns, minority languages, and societal dimensions, highlighting its engagement beyond linguistic conversion. Lastly, AVT research significantly influences the fields of education and cognitive science, offering insights into foreign language education and cognitive load theory, thereby providing engaging topics and methodologies for educational and cognitive research.

Understanding why certain research hotspots gain importance in the field of AVT requires considering the broader context of technological advancements, societal changes, and the increasing importance of global communication. Firstly, as global media consumption continues to rise, there is a growing need for AVT to accommodate diverse audiences, including non-native speakers and people with disabilities. This has made topics such as subtitling, dubbing, and audio description more relevant. Meanwhile, the transmission of cultural nuances across different languages and regions without loss of meaning or offensive distortions has heightened the importance of studies in cultural elements and gender awareness within AVT. Secondly, with the development of technology, the integration of technologies in translation practices, particularly in corpus linguistics and machine translation, has become a central research topic. This is driven by the need to enhance the accuracy and efficiency of translations. Innovations aimed at improving media accessibility for the deaf and hard of hearing, such as advanced subtitling and sign language interpreting technologies, are also considered. Research in these areas is crucial for making media content universally accessible. Thirdly, the use of AVT in foreign language education, such as through subtitled and dubbed content, has proven to be an effective tool for enhancing language learning and acquisition. This has spurred further research in educational applications of AVT. As the demand for skilled translators grows, so does the focus on professional training and curriculum development in AVT. This includes the preparation of future translators to handle complex scenarios in translation across different media. Fourthly, with increasing recognition of linguistic rights, research into language policies

affecting translation, especially in multilingual settings, gains prominence. This ensures that translation practices comply with national and international regulations. Research into establishing standards for different types of AVT practices ensures consistency and quality across the board, which is crucial in professional and educational contexts. These hotspots in AVT research reflect an evolving discipline that is adapting to the needs of a dynamic, interconnected world. As AVT continues to expand its influence and applications across various sectors, understanding these areas will be key to addressing the challenges and opportunities that lie ahead in global communication and media sharing.

Emerging and Future Research Areas

CiteSpace identifies emerging themes, literature, authors, and journal citation information by examining “Burst” points (Chen, 2006). These bursts highlight a topic that suddenly becomes a focal point or a turning point during a specific time period. Continuing bursts provide insights into potential future research directions, indicating areas that are gaining ongoing interest and significance in the field.

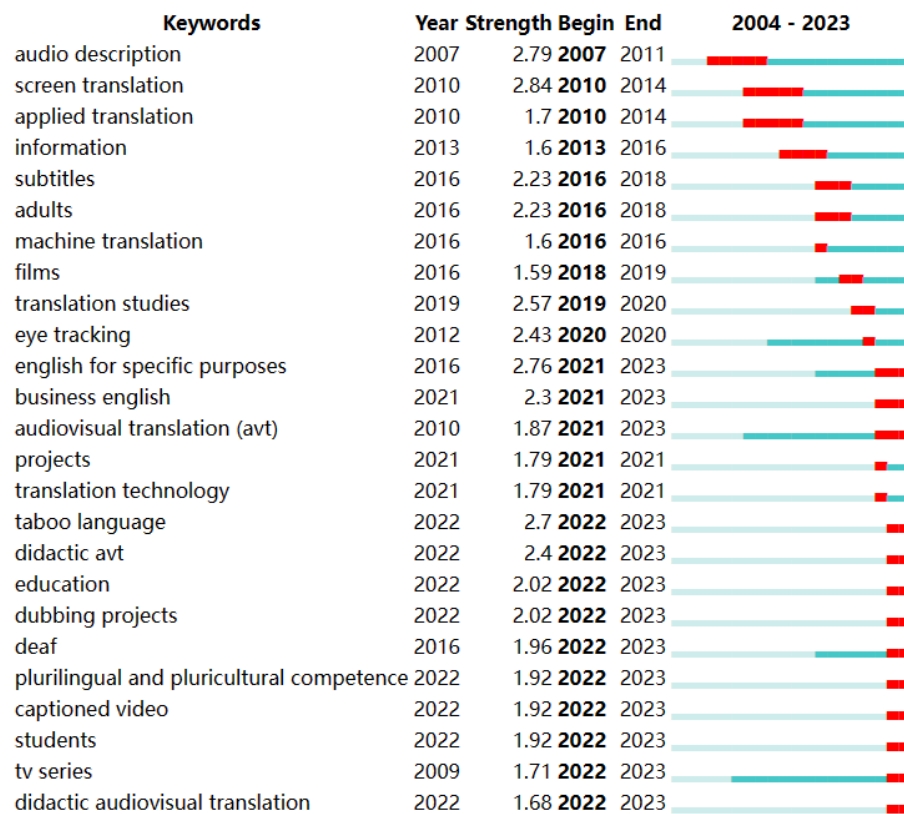


Figure 6 Top 25 Keywords with the strongest Citation Bursts

Using keywords as node types, citation bursts in CiteSpace reveal the academic development trajectories of key research hotspots in the field of audiovisual translation from 2004 to 2023. Topics like audio description, screen translation, applied translation, information, subtitles, machine translation, and eye tracking have garnered significant academic attention over certain periods. Emerging research interests in areas like English for specific purposes, business English, education, taboo language, didactic AVT, education dubbing projects, deaf plurilingual and pluricultural competence, captioned video, students, tv series, and didactic audiovisual translation showed rapid growth from 2021 to 2023, indicating a concentration of interest in

these emerging fields. These hot research topics provide clues for future research directions. According to bursts sorted by strength, the top ten bursts with strong strengths include screen translation, audio description, English for specific purposes, taboo language, translation studies, eye tracking, didactic AVT, business English, subtitles, and adults. The burst strength of these topics indicates their ongoing academic impact and increasing acceptance. Notably, direct research on subtitles was a burst point from 2016 to 2018, and while the current focus on specialized subtitles research has declined, the burst strength of 2.23 indicates it still holds research value. Overall, emerging research in AVT is increasingly focusing on applications in the educational field.

The future research directions in AVT highlighted by CiteSpace analysis are not only indicative of evolving academic interests but also suggest practical applications that could significantly influence multiple aspects of media consumption, education, and professional translation practices. Future trends such as didactic AVT, education, and dubbing projects focus on using audiovisual content to enhance learning experiences. These directions could explore how AVT can be more effectively integrated into educational curricula to support language learning, cultural awareness, and special education needs. Research into the effectiveness of captioned videos can lead to better learning aids, especially for the deaf and hard of hearing, ensuring accessibility and inclusivity in educational settings. English for specific purposes (ESP) and business English are crucial for preparing professionals to operate effectively in international environments. Research can develop more targeted AVT strategies to aid professionals in acquiring specialized vocabulary and cultural nuances essential for global business communication. Directions such as audio description and subtitles focus on innovative technologies and methodologies to improve the quality and reach of audio descriptions and subtitles. Plurilingual and pluricultural competence aim to foster a better understanding and integration of diverse linguistic and cultural backgrounds in translation, crucial for global media platforms. Research on taboo language can address how sensitive or controversial language is handled in translation, which is crucial for maintaining ethical standards and cultural sensitivity in global broadcasts. Areas like machine translation and eye tracking are about tools that significantly enhance the efficiency and accuracy of translation processes. Continued research into these technologies can lead to better automated translations and more nuanced understanding of viewer engagement and comprehension. With the global proliferation of media content, research into the translation of TV series and other formats is vital to ensure that they are culturally and linguistically appropriate for diverse audiences. The functional relevance of these research areas in AVT lies in their potential to enhance communication across linguistic and cultural barriers, improve educational outcomes, and make media more accessible and enjoyable for all audiences. This confluence of academic interest and practical application underscores the dynamic nature of AVT as a field that continually adapts to meet the demands of a globalized society.

Key Specialty and Development Trends

In the field of AVT, cluster analysis using keywords as node types reveals key research specialties and their development over time. This study chose top 10 clusters to display and adopted the timeline view to demonstrate the development trend of these specialties as shown below:

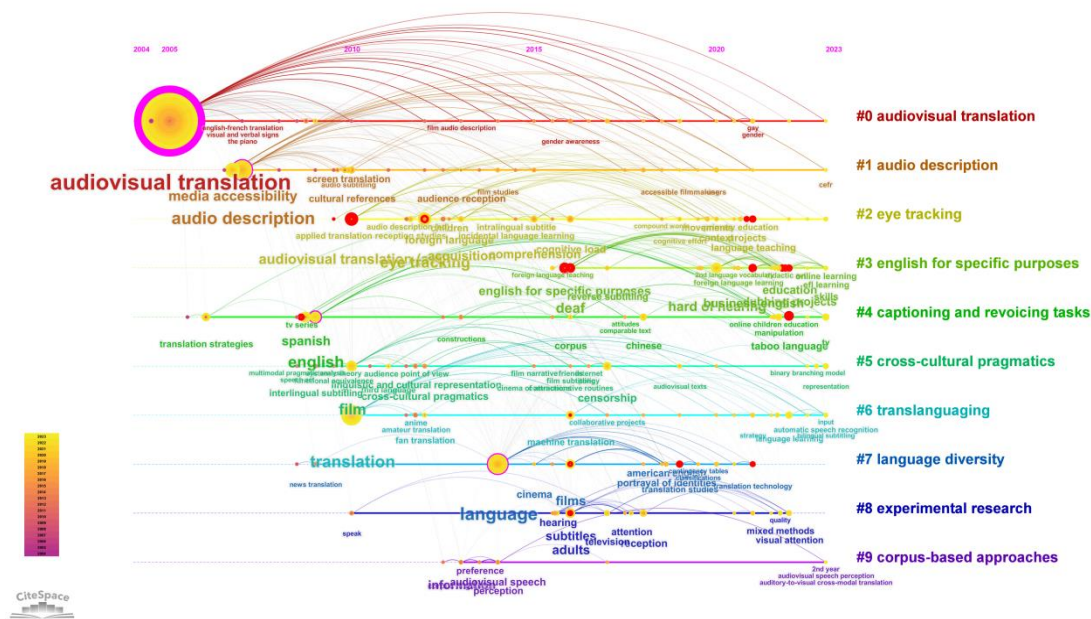


Figure 7 Timeline View of Clusters

As shown in figure 6, the analysis identifies ten main specialty clusters centered around AVT, including audio description, eye tracking, English for specific purposes, captioning and revoicing tasks, cross-cultural pragmatics, translanguageing, language diversity, experimental research, corpus-based approaches, and film distribution. These clusters provide insight into the primary research domains within AVT.

Historically, studies related to AVT, particularly audio description and captioning and revoicing tasks, have been central from 2007 to 2023, reflecting a societal emphasis on inclusivity and accessibility. The emergence of language diversity and translanguageing studies indicates a shift towards exploring linguistic aspects in AVT. The rise of cross-cultural pragmatics from 2009 to 2023 highlights the importance of effective translation across different cultures and contexts in the era of globalized media. The field has also seen an emphasis on empirical research and the adoption of new methodologies like eye tracking and corpus-based approaches. There has been an exploration of film and TV resources in teaching English for specific purposes. However, language diversity and experimental research have seen a decline in recent years, with corpus-based approaches emerging as a new area of interest. Notably, AVT is a relatively young field, suggesting it's still an emerging area ripe for exploration. As new challenges and opportunities arise, AVT is expected to continue attracting academic and practical attention.

Conclusion

This study has conducted a comprehensive bibliometric analysis of the AVT field, utilizing data from the Web of Science Core Collection spanning from 2004 to 2023. The findings reveal a consistent increase in scholarly output within the AVT domain, highlighting the growing importance and dynamic evolution of this field in translation studies. The analysis identified key researchers, influential institutions, and core publications that shape the current landscape of AVT research. The study also delineated the major research themes and emerging areas, providing a nuanced understanding of how AVT integrates diverse academic disciplines and addresses practical challenges in media accessibility and language translation.

The findings from this study underscore the interdisciplinary nature of AVT, merging insights from linguistics, cultural studies, technology, and cognitive sciences. This confluence enhances the understanding of how audiovisual media can be effectively adapted across different languages and cultures, thereby expanding global access and inclusivity. The identification of emerging research areas, such as didactic AVT and the use of subtitles in educational contexts, points towards future directions where AVT can significantly impact learning environments and content accessibility. Furthermore, the study's focus on institutes and scholars provides a roadmap for new researchers in the field to identify potential collaborators and knowledge hubs.

While this research provides valuable insights, the reliance on the Web of Science Core Collection may omit significant contributions from other databases or publications that are not indexed therein, potentially skewing the representation of the field. Additionally, bibliometric analysis, while powerful, often depends on the correct indexing and categorization of articles, which can sometimes lead to inaccuracies in data interpretation. The study also primarily focuses on quantitative data, which may overlook the qualitative nuances of research contributions in AVT.

Based on the current study, several avenues for future research can be recommended. First, expanding the analysis to include more diverse databases and literature could provide a more holistic view of the AVT field. Secondly, there is a clear need for more empirical research into the application of AVT in educational settings, examining its impact on learning outcomes and student engagement. Furthermore, future studies could explore the integration of new technologies, such as artificial intelligence and machine learning, in automating and enhancing AVT processes. Finally, there is room to investigate the sociocultural impacts of AVT, particularly in how it influences audience reception and cultural understanding in global media consumption. By addressing these areas, future research can continue to advance the field of AVT, promoting more innovative approaches and practical solutions that align with the evolving demands of global multimedia environments.

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