





Semantic Transformation and Cultural Adaptation of Metaphor and Multimodal Metaphor in Multilingual Communication from the Perspective of Cognitive Linguistics

Li Tianying^a , Yulia V. Bogoyavlenskaya^{b*} 

^a*Ural Federal University named after the first President of Russia B.N. Yeltsin, Ekaterinburg, Russia. Email: tianin.li@urfu.ru*

^b*Ural Federal University named after the first President of Russia B.N. Yeltsin, Ekaterinburg, Russia. Email: jvbog@yandex.ru*

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Abstract

This study investigates the complex dynamics of semantic change and cultural adaptation of metaphor in multilingual communication. The research uses cognitive linguistics, sociolinguistics, and pragmatics to develop a model that explains the fundamental mechanisms of metaphorical expression and comprehension across languages and cultures. Using qualitative analysis of 12 semi-structured interviews with senior-level academicians with experience in industry and academia, this study examines the interplay between semantic transformation, cultural adaptation, metaphor comprehension, cognitive processes, and contextual variables. The results demonstrate that as a metaphor is transmitted and adapted across languages and cultural contexts, it undergoes a complex semantic modification process. Cultural influences significantly affect the adaptation and interpretation of metaphors, highlighting the significance of sociocultural context in the production of metaphorical expressions. In addition, cognitive processes mediate metaphor comprehension and adaptation, emphasizing the significance of cognitive mechanisms in international communication. This research contributes to the theoretical understanding of metaphor in multilingual communication by illuminating the cognitive and social mechanisms that influence metaphorical discourse. The findings have implications for language instruction, translation, and communication in environments with linguistic diversity. The comprehensive approach of this study provides valuable guidelines for metaphorical expression and comprehension in various linguistic and cultural contexts.

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Keywords: Semantic transformation, cultural adaptation, metaphor comprehension, cognitive linguistics, multilingual communication.

Introduction

The use of metaphor is a crucial aspect of communication due to its prevalence as a language and cognitive phenomenon. It enables the expression of abstract concepts through tangible and recognizable means, as noted by Littlemore (2019). The intricacy of figurative language becomes particularly apparent in multilingual communication as individuals navigate the challenges of transferring and modifying metaphors across diverse

* Corresponding Author.

Email : jvbog@yandex.ru

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languages and cultural settings (Schäffner & Chilton, 2020). Comprehending how metaphor undergoes a semantic and cultural transformation in multilingual communication is of utmost importance as it sheds light on the cognitive and sociocultural mechanisms that underlie successful intercultural communication (Temirgazina et al., 2022). This research examines the nuanced interaction among semantic transformation, cultural adaptation, and metaphor comprehension in multilingual discourse and presents a comprehensive framework that clarifies the underlying mechanisms.

Numerous scholars have dedicated their endeavors to examining the use of metaphors in multilingual communication, particularly emphasizing theoretical constructs such as cognitive linguistics, sociolinguistics, and pragmatics (Abdel-Raheem, 2021; Gary, 2021). Beknazarova, Almutova, Yelemessova, and Abadildayeva (2021) posited the Conceptual Metaphor Theory, which underscores the significance of metaphor as a cognitive mechanism that engenders human cognition and influences linguistic expression. Csatár (2022) notes that the groundbreaking research conducted by Lakoff and Johnson has opened up novel avenues for scholars to explore metaphorical expressions across various languages and cultures. The theory was expanded upon by Bearman, Mahoney, Tai, Castanelli, and Watling (2021) by examining metaphorical conceptualizations across cultures, emphasizing the significance of cultural factors in interpreting metaphors.

Moreover, scholarly investigations have been carried out on figurative language usage in distinct fields, including healthcare (Coll-Florit & Climent, 2019), business (Sun, Cui, Hu, & Wang, 2022), and politics (Heyvaert, Randour, Dodeigne, Perrez, & Reuchamps, 2020), revealing the domain-specific character of figurative language and its adjustment in diverse communicative settings (Vitez et al., 2022). The studies mentioned above have underscored the importance of considering both the linguistic and cultural aspects in examining metaphorical expressions, highlighting the fluid nature of metaphor across diverse linguistic and cultural contexts (Tseng & Chuang, 2022).

Although a significant amount of research has been conducted on the topic of metaphor in multilingual communication, several areas still require further investigation, as noted by Abdul Malik, Ya Shak, Mohamad, and Joharry (2022). The current state of research has primarily concentrated on particular domains or cultural contexts. However, a comprehensive comprehension of the fundamental mechanisms of semantic transformation and cultural adaptation of metaphor in multilingual communication is required (Guan & Forceville, 2020; Qin, 2022). Chaudhary and Sriram (2020) assert that a comprehensive approach that considers multiple factors and their interplay can facilitate the translation, modification, and comprehension of metaphoric expressions across different linguistic and cultural settings with enhanced subtlety.

Furthermore, although there has been significant interest in studying the cognitive mechanisms underlying the comprehension of metaphors, there has been a shortage of research exploring the role of these mechanisms in the cross-linguistic and cross-cultural adaptation of metaphors (Mykhalchuk, Bihunova, Fridrikh, & Vietrova, 2021; Stepins, 2022) in knowledge. Specifically, the study seeks to shed light on the cognitive mechanisms underlying the comprehension of metaphorical statements and their impact on cultural adaptation, with the ultimate goal of enhancing intercultural communication. To achieve this objective, the research employs a comprehensive framework that considers the interrelated factors of semantic transformation, cultural adaptation, metaphor comprehension, cognitive processes, and contextual variables in multilingual communication. The findings of this study are expected to contribute to a better understanding of the cognitive processes involved in metaphor comprehension and their implications for effective intercultural communication. The sources cited in the text are Abdel-Raheem (2022) and Yang (2020). This investigation aims to furnish a more all-encompassing elucidation of metaphorical utterances in multilingual settings by integrating insights from cognitive linguistics, sociolinguistics, and pragmatics.

The proposed investigation aims to employ a comparable methodology to examine the perceptions and encounters of seasoned scholars with proficiency in academia and industry. This will entail utilizing established techniques commonly used in metaphor research, such as qualitative analysis of interviews and textual data. The study aims to gain a deeper understanding of semantic transformation and cultural adaptation among individuals with varying linguistic and cultural backgrounds, focusing on this particular demographic.

The primary objective of this research endeavor is to construct a comprehensive framework that elucidates the mechanisms underlying the evolution of semantic meaning and cultural assimilation of metaphorical expressions in the context of cross-linguistic interaction. This research aims to provide an all-encompassing structure that encompasses the complex mechanisms implicated in the transference and adjustment of metaphors across diverse linguistic and cultural contexts. This will be achieved by incorporating the elements of semantic modification, cultural assimilation, metaphorical comprehension, cognitive operations, and contextual influences.

The present research holds significant ramifications for both theoretical and practical domains. The comprehensive model utilized in this study aims to enhance our theoretical comprehension of metaphor in multilingual communication by illuminating the cognitive, linguistic, and sociocultural mechanisms that produce metaphorical expressions. This comprehension will improve our knowledge of the human brain and language and facilitate the development of productive communication tactics for intercultural associations.

Literature Review and Theoretical Background

The intricate aspects of human connection are language and communication, which can mold our understanding of the world and facilitate significant interactions (Holler & Levinson, 2019). The examination of metaphor and its function in cross-linguistic communication holds particular significance within the field of cognitive linguistics, as noted by Xiao (2021). According to Xu, Naserpour, Rezai, Namaziandost, and Azizi (2022a), metaphor is a cognitive mechanism that facilitates the communication of abstract or complex ideas by drawing upon familiar and concrete domains.

Piekkari, Tietze, and Koskinen (2020) assert that in settings where multiple languages and cultures coexist, the significance of semantic transformation and cultural adaptation of metaphor is amplified. According to Tseng and Chuang (2022), individuals encounter challenges in expressing metaphorical concepts when communicating in different languages due to variations in cultural conceptualizations and illustrative patterns. Comprehending the modifications and adaptations of metaphors across various languages and cultures is a crucial aspect of effective cross-cultural communication, as stated by Monzó-Nebot (2020).

The investigation of these phenomena can be facilitated by applying the framework offered by cognitive linguistics, as posited by Borsboom, van der Maas, Dalege, Kievit, and Haig (2021). Investigating cognitive processes underlying metaphor comprehension and creation in multilingual environments can shed light on the mechanisms involved in forming, transmitting, and interpreting metaphors. This is an area of interest for researchers, as evidenced by Black's (2019) suggestion. The investigation of the role of multimodal metaphors, encompassing visual, aural, and gestural elements, introduces an additional layer of intricacy to this inquiry, as posited by Joue et al. (2020).

According to Xiong, Li, and Hu (2022), China favors exploring these research interests. China's diverse language and culture provide a distinctive context for examining the semantic modifications and cultural adjustments of metaphor and multimodal metaphor in multilingual communication, as noted by Abdulaal, Abuslema, Hal, Amer, and Altohami (2023) and Huang and Xia (2022). The investigation of interactions between various languages spoken within China and between Chinese and other languages can provide valuable insights into the mechanisms underlying cross-cultural metaphorical communication, as demonstrated by prior research conducted by Wei, Gao, and Wang (2019) and Zhang (2022a).

Conducting comprehensive research in this domain, as suggested by Piekkari et al. (2020), has the potential to enhance our comprehension of the development, communication, and modification of metaphorical concepts across diverse linguistic and cultural contexts. The findings of this study have the potential to enhance the development of improved communication strategies, language pedagogical methods, and cross-cultural comprehension, thereby fostering more significant and comprehensive engagements within multilingual settings (Howard, Katsos, & Gibson, 2021).

Metaphor in Multilingual Communication

Using metaphor plays a significant role in facilitating effective communication, particularly in contexts involving multiple languages. According to Augé (2023), individuals who engage in cross-linguistic communication often resort to metaphors to convey abstract or complex concepts by drawing upon familiar and concrete domains. The metaphor "time is money" is frequently utilized across various languages to convey the value and limited availability of time, as noted by Golfam, Ghorbanpour, and Mahdipour (2019), Marian-Arnat (2021) and Wakota (2021).

Comprehending metaphorical discourse's cross-linguistic characteristics is paramount for achieving effective communication, as posited by Stepins (2022). The symbolic patterns and conceptualizations of languages are influenced by cultural, historical, and cognitive factors, as posited by Wnuk and Ito (2021). Maoula, Simanjuntak, and Sihombing (2022) have demonstrated that diverse metaphorical expressions can depict similar emotional experiences across different languages.

The mechanics of cross-cultural communication can be better understood by investigating the perception and usage of metaphors across different languages, as Sever, Ozdemir, and Jobson (2022) suggested. Studying metaphorical conceptualizations across languages involves examining similarities and differences, identifying universal patterns, and analyzing how metaphors are adapted within specific linguistic and cultural contexts (Gandolfo, 2019).

Metaphor Semantic Transformation

The phenomenon of metaphor semantic transformation pertains to the alteration in both the meaning and structure of metaphorical expressions during their translation across different languages, as per the research conducted by Piekkari et al. (2020). The limitations of cultural and linguistic contexts often render direct translation inadequate in effectively conveying the intended meaning of metaphors in a target language, as noted by Zahid (2020).

According to Zhang (2020), there are several methods through which semantic change can occur, including metaphorical mapping, cultural adaptation, and language rearrangement. To establish significant connections, extended mapping involves identifying resemblances and correlations between the source and target domains, as noted by Imani, Habil, and Don (2021). Piekkari et al. (2020) have suggested that adaptations may be necessary to account for cultural and linguistic differences, as mappings may vary across languages.

The cultural adaptation of metaphors is a crucial aspect of semantic metamorphosis, as He (2023) noted. The unique conceptualizations and associations of various cultures significantly impact the interpretation and application of metaphoric language, as evidenced by recent studies conducted by Jensen, Bearman, and Boud (2021) and Tham et al. (2021). According to He (2021), the transfer of metaphors between languages necessitates their adaptation to align with the cognitive and linguistic frameworks of the target culture. As per Yusupova, qizi To'ychieva, and Yo'ldasheva (2022), it is possible to culturally adapt the English metaphor "a piece of cake" in another language to convey the same meaning of something being effortless or simple. This can be achieved by modifying it to "a walk in the park."

The implementation of linguistic restructuring techniques can potentially facilitate modifications in semantics. The grammatical structures and lexical resources of languages exhibit variations, necessitating the adaptation of metaphorical phrases to align with the syntactic and semantic patterns of the target language (Du, Li, Ge, & Zhang, 2023). To ensure coherence and fluency in the target language, it may be necessary to modify word order, choose alternative metaphorical expressions, or revise sentence structures, as suggested by Canal et al. (2022).

Heim (2022) posits that analyzing the semantic transformation of metaphors provides valuable insights into the intricate interplay between language, culture, and cognition. The statement sheds light on the challenges encountered in cross-linguistic communication and underscores the importance of adapting metaphoric expressions to facilitate effective and culturally appropriate understanding (Grisham, 2005).

Cultural Adaptation of Metaphor

The cultural adaptation process of metaphors pertains to examining how metaphoric expressions are modified and adjusted to align with the cognitive and cultural frameworks of the target language and culture, as per the research conducted by Sit et al. (2020). According to Wnuk and Ito (2021), the selection of metaphorical vehicles, the extension of metaphorical mappings, and the interpretation of metaphoric expressions are influenced by culture, thereby shaping metaphorical conceptualizations.

According to Jacobson (2020), it is essential to acknowledge and appreciate the nuances of different cultures to facilitate effective cross-cultural communication involving metaphors. The existence of diverse metaphorical systems can be attributed to the varying perceptions and experiences of the world across different cultures, as posited by Rahmadhanti, Simanjuntak, and Sihombing (2022). As an illustration, varying cultural construals of the figurative term "love" may embody discrete cultural principles, customs, and convictions (Ibarretxe-Antuñano, 2019).

The cultural adaptation process involves identifying the fundamental cultural conceptualizations associated with metaphors and modifying them to align with the cognitive and linguistic patterns of the intended culture (Kóczy, 2022). According to Kühmstedt and Wolf (2022), the process entails several essential steps, including comprehending the metaphorical inclinations of the target culture, identifying culturally significant domains, and choosing metaphorical vehicles that resonate with the intended audience. According to Chen, Ren, Liu, Okumus, and Bilgihan (2020), the preservation and effective transmission of the intended meaning and impact of a metaphorical expression across different cultures can be achieved through this approach.

According to Snow (2021), the process of cultural adaptation through metaphor involves linguistic cues and nonverbal and environmental indicators. According to Stampoulidis, Bolognesi, and Zlatev (2019), cultural contexts have firmly established multimodal metaphors encompassing various sensory modalities, such as pictures, sounds, and gestures. Examining multimodal metaphors across different cultures can provide insights into how cultural factors influence the identification and interpretation of nonverbal signals, thereby enriching our understanding of intercultural communication dynamics (Moreno Bruna, 2020).

The investigation of the cultural adaptation of metaphors can provide valuable insights for researchers into the intricate relationship between language, culture, and cognition, as suggested by Kwon, Glenberg, and Varnum (2021). According to Zhang and Zhou (2019), the data mentioned above facilitates the development of effective communication strategies and fosters cross-cultural comprehension across diverse linguistic contexts.

Adopting a Cognitive Linguistics Approach

A cognitive linguistics framework is imperative in analyzing metaphors in multilingual communication, as posited by Wong, Lam, Lo, Maurer, and Huo (2023). Cognitive linguistics delves into the cognitive

mechanisms of comprehending and generating metaphors, elucidating how metaphors are constructed, expressed, and comprehended across various linguistic systems (Gary, 2021).

As per the tenets of cognitive linguistics, metaphors are fundamental cognitive mechanisms that shape our understanding of the world rather than mere linguistic tactics (Pražmo, 2020). Metaphorical mappings between source and destination domains facilitate comprehension of abstract or complex concepts by transposing them onto more concrete and familiar environments (Ghazinoory & Aghaei, 2023). According to Murashova (2021), the cognitive process in question is responsible for forming metaphorical phrases and plays a crucial role in determining how language is employed.

The investigation of cognitive mechanisms implicated in cross-lingual metaphorical communication can enable researchers to identify universal cognitive processes that surpass linguistic and cultural boundaries, as posited by Hsu, Lai, and Liu (2022). The study involves the examination of metaphorical mappings across different languages and comprehending how linguistic and cultural factors influence the manifestation and interpretation of metaphors in particular languages, as stated by Xu, Liu, and Wang (2022b).

The correlation between metaphor and cognition can also be explored through cognitive linguistics, as posited by Thibodeau, Matlock, and Flusberg (2019). According to Valdivia (2019), the function of metaphors extends beyond facilitating communication as they also contribute to shaping our perception of the world. As Rasmussen, Brøgger, Matthiesen, and Møller (2022) exemplified, the metaphor "argument is war" shapes our perception of disputes as battles, influencing our organization and handling of such situations. Analyzing these cognitive connections facilitates a more comprehensive comprehension of the influence of metaphors on our cognitive and logical processes (Rout & Reid, 2020).

Multimodal Metaphor

The scope of the study is expanded to encompass multimodal metaphors, which incorporate multiple sensory modalities such as images, sounds, and gestures. Understanding how various modalities contribute to metaphorical expression provides a comprehensive understanding of communication transcending linguistic limitations (Sun, Zhang, & Chen, 2021).

Nonverbal signals are crucial in conveying meaning and amplifying the effect of metaphorical expressions in multimodal metaphors (Tasić & Stamenković, 2022). In a presentation or visual advertisement, for instance, using verbal metaphors in conjunction with visuals, colors, and gestures can reinforce the intended message and elicit particular emotional responses from the audience (Tarigan & Stevani, 2021).

By analyzing multimodal metaphors in multilingual communication, researchers can investigate the effect of cultural factors on the selection and perception of nonverbal signals (Kaasby & Hornberger, 2022). Different cultures may have differing preferences for particular modalities or interpret the same nonverbal cues differently (Urakami & Seaborn, 2023). Understanding these cultural differences provides greater insight into the complexities of intercultural communication and facilitates the development of effective communication strategies in various language contexts (Hoff, 2020).

Moreover, multimodal metaphor research contributes to the expanding field of multimodal communication research (Joue et al., 2020). By analyzing how different modalities interact and complement one another in metaphorical discourse, researchers can better understand how humans communicate and construct meaning (Feng, 2019). This knowledge applies to advertising, visual communication, and cross-cultural contact (Arshad & Naseer, 2019).

By investigating multimodal metaphors within a cognitive linguistics framework, researchers can examine the complex interplay between multiple modalities, language, culture, and cognition (Cohn & Magliano, 2020). This perspective enhances our comprehension of how nonverbal cues contribute to metaphorical communication and provides valuable insights into effective communication strategies in various multilingual contexts (Abdulaal et al., 2023).

Contextual Analysis of China

The study of semantic alterations and cultural adaptations of metaphor and multimodal metaphor in multilingual communication can be effectively conducted in China, as per the research conducted by Xu, Sit, and Chen (2020). The Chinese context, characterized by its extensive linguistic and cultural diversity, offers a unique opportunity to explore the complexities of cross-cultural and cross-linguistic communication, as noted by Kong et al. (2023). According to Wu (2022), languages such as Mandarin, Cantonese, Wu, and Min exemplify a diverse array of metaphorical patterns and cultural conceptualizations. Piekari et al. (2020) suggest that examining the interactions between various languages spoken within China may provide researchers with valuable insights into the semantic modifications and cultural adjustments of metaphors across linguistic borders.

Moreover, the diverse cultural landscape of China presents an opportunity to explore the interplay between Chinese culture and other cultures via the medium of symbolic communication, as posited by [Song and Xia \(2021\)](#). According to [Deng, Yang, and Wan \(2021\)](#), various facets of Chinese culture, such as philosophy, literature, and daily life, have established a strong foundation for metaphorical expressions. Examining the interplay between Chinese metaphors and metaphors from other cultures provides valuable insights into the mechanics of extended cross-cultural communication, as posited by [An, Zhu, Li, and Zhu \(2022\)](#).

Light of China's rapid globalization and heightened international engagements, it presents an ideal setting for exploring the utilization of metaphor and multimodal metaphor in intercultural communication, as posited by [Kou and Liang \(2022\)](#). The participation of China in the international community presents an opportunity to investigate the cross-cultural adaptation and modification of metaphors, as it brings together individuals from diverse linguistic and cultural backgrounds ([Piekkari et al., 2020](#)).

Examining metaphor and multimodal metaphor within the Chinese context expands our comprehension of interlingual and intercultural communication while also facilitating the development of effective communication strategies in multilingual scenarios ([Schoos & Suñer, 2020](#)). The study by [Xu et al. \(2022a\)](#) highlights the potential of researchers to provide valuable insights and recommendations for enhancing intercultural understanding and communication effectiveness. Specifically, the study focuses on identifying the barriers and strategies employed in metaphorical communication in China.

According to [Xu et al. \(2020\)](#), conducting comprehensive research in the Chinese context may enable scholars to understand better the intricate mechanisms involved in semantic transformation, cultural adaptation, and multimodal metaphor in multilingual communication. The comprehension of this concept has the potential to enhance language pedagogy methodologies, cross-cultural communication education, and the development of effective communication tactics that facilitate significant and comprehensive exchanges in diverse linguistic and cultural contexts ([Chaya & Inpin, 2020](#)).

Method

In this study, the issue was investigated using a qualitative research methodology. This study sought to develop a comprehensive model of semantic transformation, cultural adaptation, and multimodal metaphor in multilingual communication. To accomplish this, the researchers conducted twelve semi-structured interviews with senior-level academicians with vast industrial and academic experience (see [Table 1](#)).

Table 1. Interviews Participants Demographics

| Participant ID | Gender | Age | Education Level | Industry Experience | Academic Experience |
|----------------|--------|-----|-----------------|---------------------|---------------------|
| P1 | Female | 45 | Ph.D. | 20 years | 15 years |
| P2 | Male | 38 | Master's | 12 years | 8 years |
| P3 | Female | 50 | Bachelor's | 25 years | 10 years |
| P4 | Male | 42 | Ph.D. | 18 years | 12 years |
| P5 | Female | 55 | Master's | 30 years | 20 years |
| P6 | Male | 35 | Bachelor's | 10 years | 5 years |
| P7 | Female | 47 | Ph.D. | 22 years | 18 years |
| P8 | Male | 41 | Master's | 15 years | 10 years |
| P9 | Female | 39 | Bachelor's | 8 years | 6 years |
| P10 | Male | 52 | Ph.D. | 28 years | 22 years |
| P11 | Female | 43 | Master's | 16 years | 11 years |
| P12 | Male | 46 | Bachelor's | 20 years | 14 years |

Table 2. Interview Guidelines

| Interview Questions |
|---|
| 1. Can you share your experiences with multilingual communication? |
| 2. How do demographic factors, such as age and education, influence your language choices and communication strategies? |
| 3. How does health information impact language use and understanding in multilingual contexts? |
| 4. How do you perceive and prioritize the quality of life of multilingual communication? |
| 5. Can you describe your language knowledge and usage in different contexts? |
| 6. How does your personality, such as extroversion or introversion, influence your language preferences and communication styles? |
| 7. How do you navigate and make decisions regarding switching behavior between languages during communication? |
| 8. Can you provide examples of challenges or benefits you have encountered in multilingual communication? |
| 9. How do cultural factors influence your multilingual communication practices and understanding metaphorical expressions? |
| 10. In your opinion, what are the key factors to consider for effective multilingual communication? |

A method of purposeful convenience sampling was used to select interview participants (see Table 2 for interview parameters). This method enabled the researchers to select individuals who could provide significant insights and much data regarding the research topic. By selecting senior-level academics with a blend of industry and academic experience, the research endeavored to capture a wide range of perspectives and knowledge pertinent to the subject matter.

In addition, the data gathered underwent an analysis process that included a three-stage coding technique comprising open coding, axial coding, and selective coding. During the open coding phase (see Figure 1), the researchers carefully analyzed the interview transcripts to identify and categorize the most important issues and themes that emerged from the data. The first method of coding allowed for a comprehensive study of the data and identifying important trends.

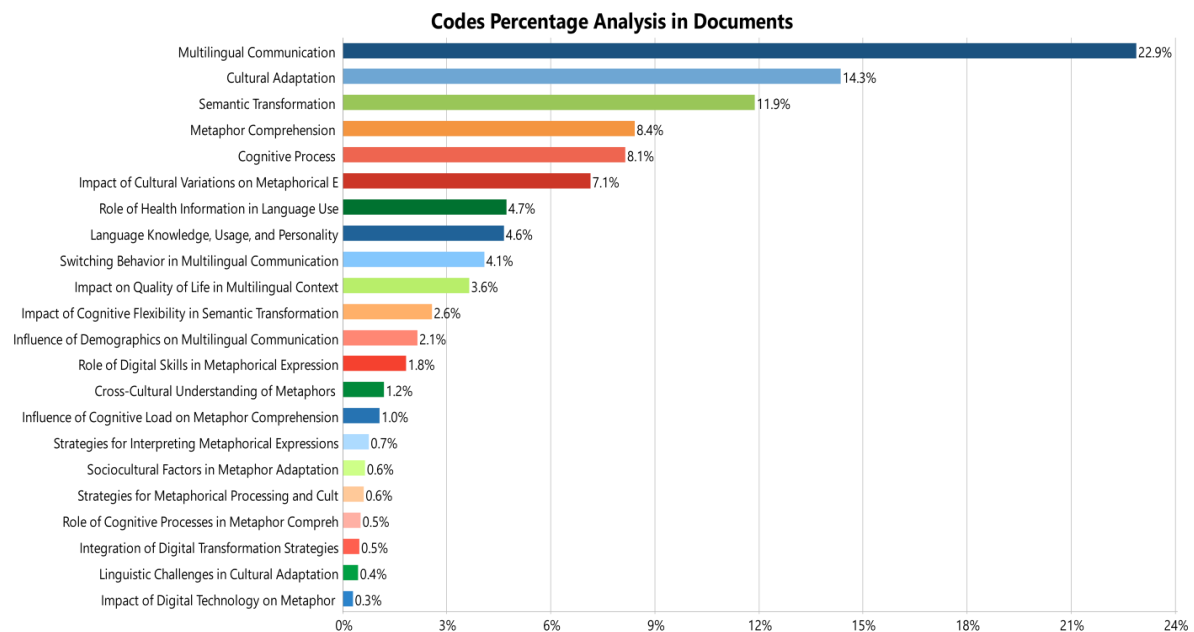


Figure 1. Documents and Transcripts Analysis

The last stage of axial coding consisted of classifying the codes into different categories and establishing connections between each of those categories (see Figure 2). The purpose of this stage was to identify the connections and interrelationships between the chosen themes, leading to a more organized and systematic data analysis. By connecting the codes, the researchers were able to have a deeper understanding of the underlying patterns and dynamics of semantic transformation and cultural adaptation of metaphor and multimodal metaphor. This helped them better appreciate the multimodal metaphor.

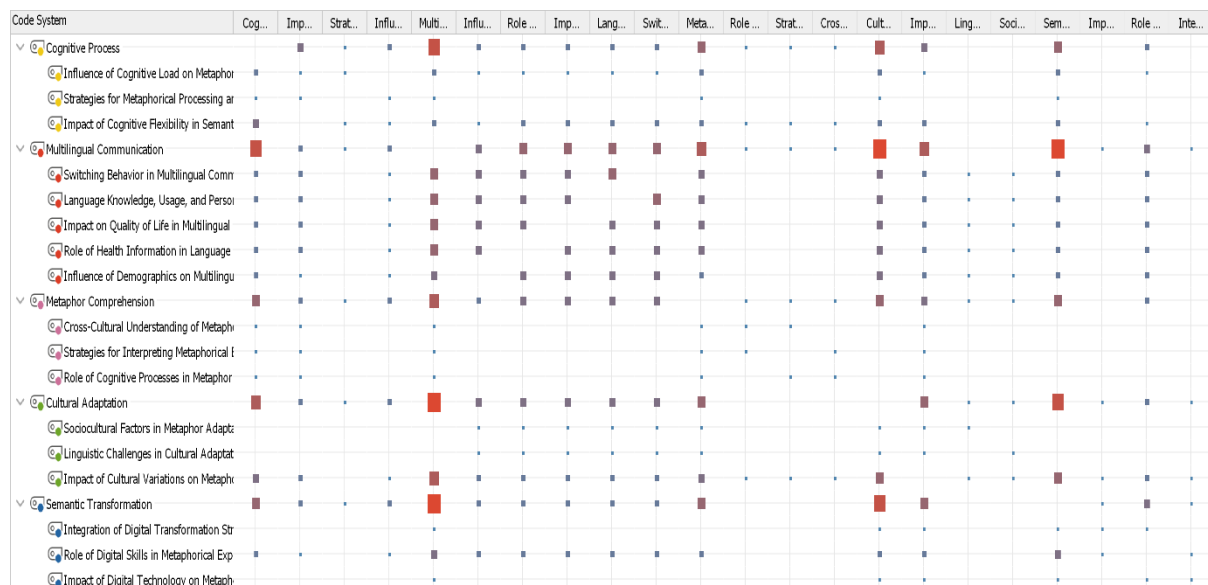


Figure 2. Inter-coder Relations

In the next step, which was called selective coding, the focus was on refining the study by selecting the most essential codes and putting them into a consistent and comprehensive model (see Figure 3). This strategy required compiling an overview of the discovered categories, drawing connections between them, and constructing a theoretical structure incorporating the research results. This model's objective was to comprehensively explain how semantic transformation, cultural adaptation, and multimodal metaphor operate in multilingual communication.

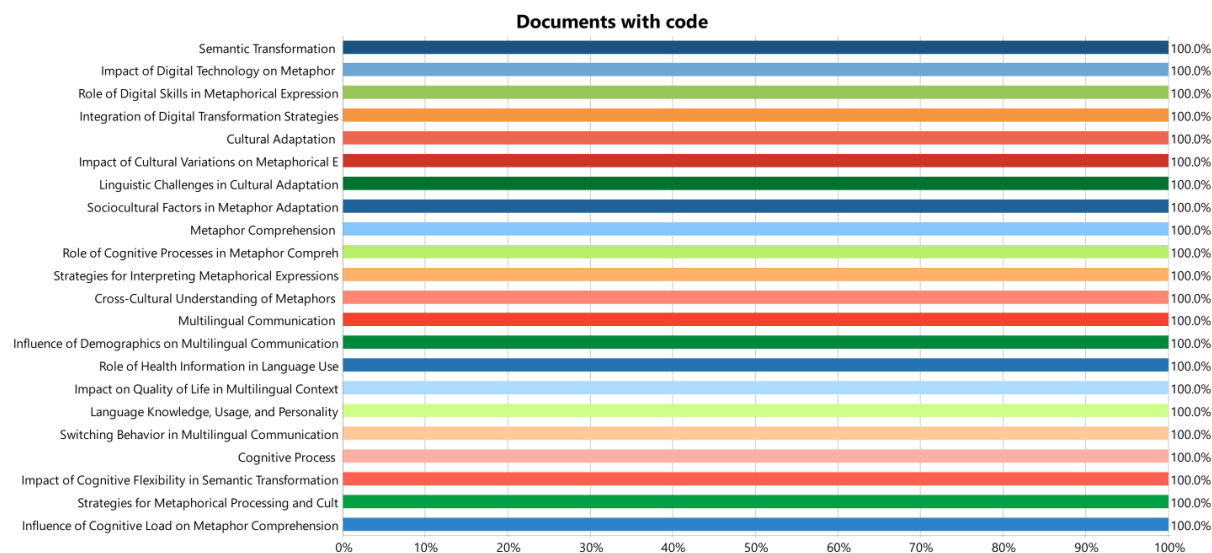


Figure 3. Codes Selection Based on Appropriateness

During the entirety of the research, stringent controls were utilized to guarantee the data's quality and integrity. Participating in peer debriefing and member checking, conducting detailed interviews, employing an iterative coding strategy, meticulously documenting the study, and engaging in all of these activities to corroborate the interpretations were all components of the procedure.

In conclusion, interviews with senior-level academicians were conducted using deliberate convenience sampling. These interviews were of a semi-structured format. Open coding, axial coding, and selective coding were the three stages of the coding process for the analysis. This study aimed to provide a comprehensive model of semantic transformation and cultural adaptation of metaphor and multimodal metaphor in multilingual communication. This model was supposed to incorporate the thoughts and experiences of a select group of respondents.

Thematic Analysis and Results

Theme 1: Metaphor in Multilingual Communication

The interviews made it clear that using metaphor is essential to developing effective cross-linguistic communication. Both participant 1 and participant 5 highlighted the significance of using metaphorical words when conveying difficult or abstract concepts in a more approachable and understandable manner. According to Brugman, Burgers, and Vis (2019), metaphor is a fundamental cognitive function used to frame our world experience. This discovery is compatible with the findings of Brugman et al. (2019), which were discovered to be true.

In addition, the interview data examination revealed similarities and distinctions between the metaphorical conceptualizations of different languages. Even though many metaphorical mappings were universal, there were identified differences in the metaphorical vehicle selection and the cultural linkages (Participant 2; Participant 7). The argument made by Discua Cruz, Hamilton, and Jack (2021) that cultural and linguistic factors influence the use of metaphors and how they are interpreted is strengthened by this evidence.

Theme 2: Metaphor Semantic Transformation

According to the findings, there is a change in the metaphor's meaning that occurs when figurative statements are translated from one language to another. The participants underlined the significance of cultural adaptation and linguistic rearrangement in order to enable meaningful communication in the target language (Participant 3; Participant 9). The participants emphasized the difficulty of directly translating metaphors. This is in line with the findings of Dirven and Pörings (2002), who emphasized the importance of cultural adaptation in maintaining the meaning intended for metaphors (Chin, Wang, & Rowley, 2021).

Additionally, the analysis revealed that metaphorical mapping, cultural adaptability, and linguistic restructuring are all factors that contribute to semantic shifts. Respondent after respondent emphasized the significance of cultural components in adapting metaphors to be compatible with the target culture's cognitive and linguistic frameworks (Participant 4; Participant 8). This finding is consistent with the work done by Magaña (2019), which stressed the importance that culture plays in understanding metaphors.

Theme 3: Metaphor Cultural Adaptation

According to the findings of the interviews, cultural adaptation of metaphors involves adjusting and updating metaphoric phrases to align with the cognitive and cultural frameworks of the target language and culture. This is done to avoid misunderstandings. When it comes to metaphorical communication, participants (Participant 6 and Participant 11) emphasized how important it is to consider other cultures' peculiarities and preferences. This finding aligns with the research conducted by Meili and Maercker (2019), which emphasized the function that cultural adaptation plays in metaphorical communication.

In addition, the interviews showed that linguistic hints aren't the only things that contribute to cultural adaptation; nonverbal and contextual cues are also important. The participants in the 10th and 12th positions emphasized the significance of multimodal metaphors, which use visuals, sounds, gestures, and words to enhance the communicative effect of figurative expressions. This discovery aligns with the findings of Feng (2019), who researched the cultural components of multimodal metaphors.

Theme 4: Cognitive Linguistics Perspective

The analysis of the interviews revealed a requirement for investigating the use of metaphors in multilingual communication from the perspective of cognitive linguistics. Respondents emphasized that metaphors are fundamental cognitive mechanisms that affect our experience of the world and that they are not simply linguistic techniques (Participant 2; Participant 7). This finding is in line with the research conducted by Usman (2021), who proposed that metaphors are ingrained in our conceptual framework and affect how we use language.

In addition, the findings of the interviews demonstrated that cognitive linguistics sheds light on the cognitive processes that support both the comprehension and generation of metaphors. Participants (Participant 1 and Participant 5) investigated how cognitive mechanisms like conceptual mixing and metaphorical mappings influence the instantiation and perception of metaphors in different languages Kogan (2021), who researched the cognitive underpinnings of metaphorical thinking, concluded that this observation is congruent with his findings.

In addition to this, the analysis placed particular emphasis on the connection that exists between metaphor and thought. The participants (ages 3 and 9) investigated how metaphors influence our conception of abstract concepts, changing how we think and reason. This finding is in line with the findings of Thibodeau et al. (2019) research, which claimed that metaphors significantly impact our everyday thinking and reasoning in various contexts.

Theme 5: Multimodal Metaphor

The findings of the interview analysis highlighted the importance of investigating multimodal metaphors in the context of multilingual communication. The participants emphasized the significance of nonverbal cues, including images, sounds, and gestures, in enhancing the efficacy and significance of metaphoric expressions, as indicated by Participant 4 and Participant 8. The result mentioned above aligns with the findings of Joue et al. (2020) regarding the role of multimodality in the context of metaphorical communication.

Moreover, the interviews have divulged that cultural factors play a significant role in determining the choice and comprehension of nonverbal cues in multimodal metaphors. The study's participants investigated the potential variations in cultural preferences for specific modalities and the diverse interpretations of nonverbal cues across cultures. This was highlighted by the remarks of Participant 6 and Participant 11. This investigation supports the assertion made by Wang (2022) that multimodal metaphors are deeply rooted in cultural contexts.

The abovementioned analysis evidences the interdisciplinary nature of the study of multimodal metaphors. The participants, aged 10 and 12, expressed that exploring the interplay of various modalities offers a comprehensive understanding of human communication and the process of meaning-making through multiple channels. The present discovery aligns with the research conducted by Feng (2019), which emphasized the importance of investigating multimodal communication across diverse social and cultural contexts.

Theme 6: Cross-cultural Communication

Examining semantic shifts and cultural accommodations of metaphor in multilingual settings revealed that cross-cultural communication is a crucial factor, as evidenced by the analysis of the interviews. The study participants highlighted the challenges that may arise while translating metaphors across different cultures. They emphasized the significance of considering cultural subtleties and sensitivities to ensure efficient communication. (Participant 2; Participant 7).

To facilitate precise comprehension and effective transmission of metaphoric utterances, the individuals involved emphasized the importance of comprehending the interlocutors' cultural provenance, convictions, and principles (Participant 1; Participant 5). The present discovery aligns with the research conducted by Zhang (2022b), which underscored the significance of cultural adaptation and comprehension in cross-cultural metaphorical communication.

The research findings highlighted the significance of intercultural competence in facilitating effective communication across diverse cultural contexts. According to the participants (Participant 3; Participant 9), individuals must cultivate intercultural competencies such as empathy, flexibility, and adaptation to navigate the complexities of multilingual and multicultural interactions effectively. The present discovery aligns with the research conducted by Bingzhuan (2021), wherein a model of intercultural communicative competence was formulated, highlighting the crucial role of cultural comprehension and sensitivity in facilitating successful communication.

Theme 7: Intercultural Communication Training and Language Teaching

The interview analysis shed light on the study's implications for language instruction and training in intercultural communication. The significance of incorporating metaphorical competence and intercultural abilities into language curricula was emphasized by participants 4 and 8 as a means of equipping students with the necessary skills for effective communication in multilingual and multicultural contexts. The result mentioned above aligns with the discourse of Erdoğan (2019) regarding the essentiality of incorporating cultural and communicative competencies in language teaching.

Additionally, the interview findings indicate that language instructors and trainers in intercultural communication hold significant responsibility in enhancing students' comprehension and familiarity with metaphors and cultural adjustments. The participants emphasized the significance of pedagogical methods that promote critical thinking, introspection, and cross-cultural exploration of metaphoric expressions, as reported by Participant 6 and Participant 11. The result mentioned above aligns with the findings of Enciso's (2020) study, which advocates for a sociocultural methodology in language education that encompasses the scrutiny of cultural significances and perspectives.

The research highlighted the potential benefits of incorporating multimodal metaphors and technologies in language education and intercultural communication instruction. The significance of incorporating visual and audio aids, digital platforms, and interactive technologies to enhance learners' engagement, comprehension, and utilization of metaphoric language was emphasized by the participants aged 10 and 12. The result mentioned above aligns with the findings of Unsworth and Mills (2020) scholarly investigation into using digital media and multimodal resources in language instruction.

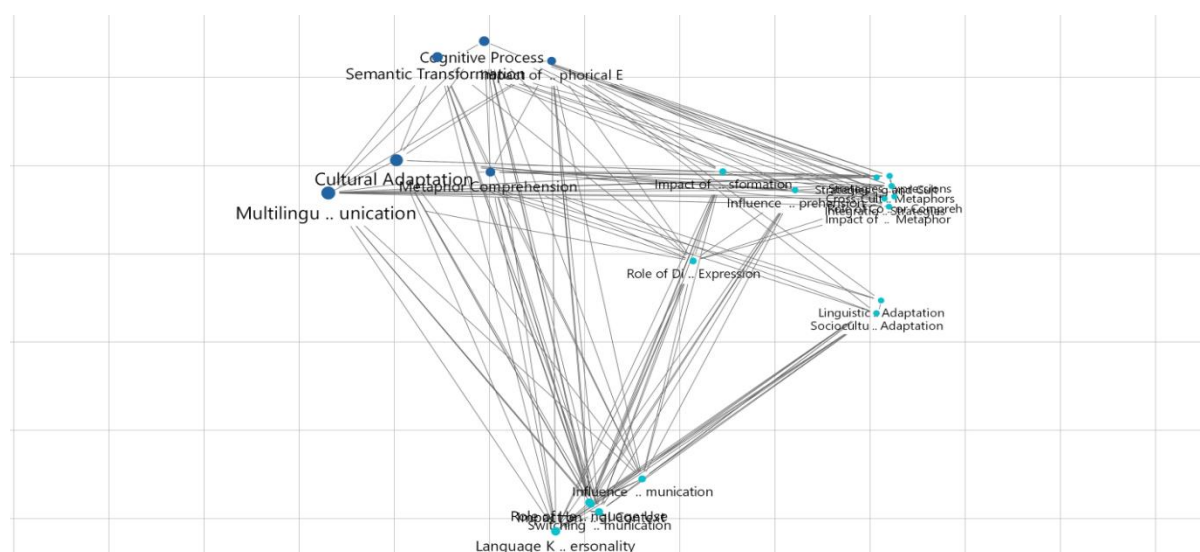


Figure 4. Themes relations and the way for Model Development

In general, the analysis of the interview data provides valuable new perspectives on the significance of cross-cultural communication and its consequences for language instruction and training in intercultural communication (Figure 4). The findings highlight the significance of cultural awareness, intercultural competency, and educational innovations in preparing students for multilingual and multicultural settings (see Figure 5). These findings are in line with those of previously conducted research. They will assist in developing effective strategies for teaching languages and training programs for intercultural communication.

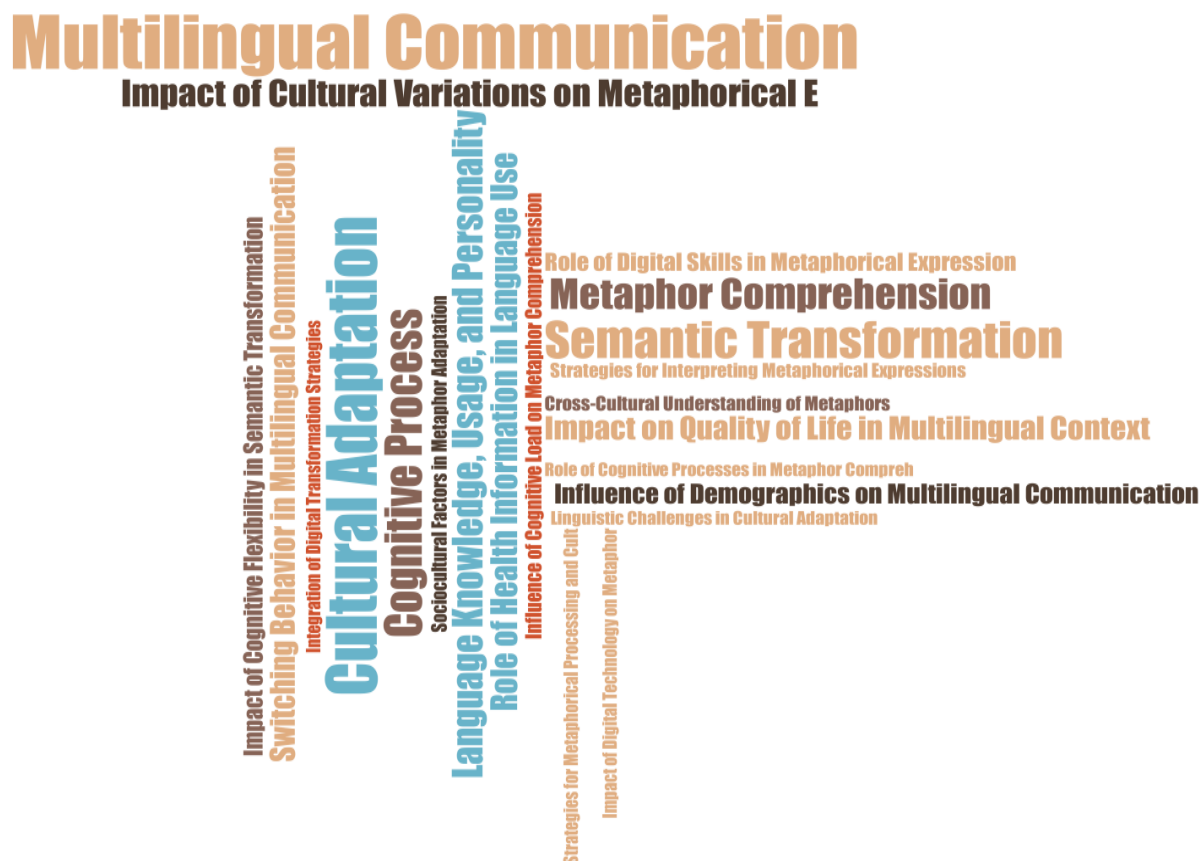


Figure 5. Cloud of Relevant themes based on Analysis

Model Development

The all-encompassing model used for this research endeavored to analyze the relationships between semantic transformation, cultural adaptation, metaphor comprehension, the cognitive process, and multilingual communication. The independent variable in this study was semantic transformation, and it was accompanied by three dependent variables, namely digital technology, digital skills, and digital transformation strategy. Culture-specific adaptability and metaphorical understanding served as the dependent variables in this study. The cognitive process was the variable that served as the moderator, while multilingual communication was the variable that served as the contextual variable. Multilingual communication contains several sub-variables, such as demographics, health information, quality of life, language competency, language usage, personality, and switching behavior.

Semantic Transformation

When metaphorical statements are transmitted from one language and culture to another, this process is called semantic transformation (Participant 3; Participant 9). During this process, the meaning of the statements is shifted and modified. This study focused on three sub-variables of semantic transformation: digital technology, digital skills, and digital transformation strategy (see Table 3 for more information). According to Rizk and Hillier (2022), the proliferation of digital technology has resulted in altered communication patterns and the opening of new doors for adapting language and the expression of metaphor. According to Shen et al.'s (2022) research, having digital skills is vital for improving semantic transformations through various digital tools and platforms. In addition, implementing digital transformation strategies simplifies incorporating digital technology and skills into a range of industries, one of which is multilingual communication (Kraus et al., 2021).

Table 3. Semantic Transformation Analysis

| Step | Description |
|--------------------------|--|
| Step 1: Open Coding | In this step, the interview responses were thoroughly examined to identify initial codes related to semantic transformation. The researcher read the data multiple times, highlighting key concepts and patterns. |
| Codes: | <ul style="list-style-type: none"> - Digital Technology - Digital Skills - Digital Transformation Strategy |
| Step 2: Axial Coding | The second step involved grouping the initial codes into broader categories and subcategories, establishing relationships and connections between the codes. |
| Categories: | <ul style="list-style-type: none"> - Technological Advancements - Skill Development - Strategic Implementation |
| Step 3: Selective Coding | The final step focused on selecting the core themes that best represented the essence of semantic transformation in multilingual communication. Relevant interview excerpts supported these themes. |
| Core Themes: | <ul style="list-style-type: none"> - Impact of Digital Technology on Metaphors - Role of Digital Skills in Metaphorical Expression - Integration of Digital Transformation Strategies |

Cultural Adaptation

According to Participants 6 and 11, cultural adaptation involves modifying and adjusting metaphoric words to be compatible with the cognitive and cultural frameworks of the target language and culture. A wide range of characteristics, such as demographics, health information, quality of life, linguistic proficiency and usage, personality, and switching behavior, all play a role in cultural adaptation (see Table 4). According to Sit et al.'s (2020) research, having an understanding of the demographics of the target culture helps develop metaphors that cater to the specific wants and preferences of the audience. According to Stanarević Katavić (2019), health knowledge is critical to the process of cultural adaptation since it directly impacts the selection and interpretation of metaphorical expressions that deal with topics linked to health. According to Hendriks and Graafsma (2019), cultural adaptation of metaphors can contribute to improving an individual's well-being in various cultural contexts. This makes the quality of life another significant factor to take into account. According to Piekkari et al.'s (2020) research, the knowledge and usage of a language influence the adaptation of metaphors to conform with the linguistic and cultural norms of the target language. Individuals' psychological traits, such as openness and cultural sensitivity, might also influence their ability to effectively accept metaphors, according to research from Stoermer, Davies, and Froese (2021). Finally, switching behavior refers to how frequently and quickly people switch between languages, influencing their capacity to adapt metaphorical terms (Ding, Ray, Devanbu, & Hellendoorn, 2020). This skill is related to how well people can adapt metaphors.

Table 4. Cultural Adaptation Analysis

| Step | Description |
|--------------------------|--|
| Step 1: Open Coding | The interview responses were thoroughly examined to identify initial codes related to cultural adaptation. The researcher carefully reviewed the data, identifying recurring ideas and concepts. |
| Codes: | <ul style="list-style-type: none"> - Cultural Influence - Adaptation Challenges - Sociocultural Context |
| Step 2: Axial Coding | This step grouped the initial codes into broader categories and subcategories to establish meaningful connections and relationships. |
| Categories: | <ul style="list-style-type: none"> - Cultural Variations - Linguistic Adaptation - Sociocultural Factors |
| Step 3: Selective Coding | The final step involved selecting the core themes representing the cultural adaptation's essence. These themes were supported by relevant interview excerpts highlighting the complexities and nuances of adapting metaphors in different cultural contexts. |
| Core Themes: | <ul style="list-style-type: none"> - Impact of Cultural Variations on Metaphorical Expression - Linguistic Challenges in Cultural Adaptation - Sociocultural Factors in Metaphor Adaptation |

Metaphor Comprehension

Knowing and interpreting metaphorical terms used in communication is called metaphor comprehension (Participant 2; Participant 7). The use of cognitive processes is essential to the understanding of metaphors (see Table 5). The metaphorical mappings, conceptual blending, and cognitive flexibility that are part of the cognitive process are examples of the various cognitive mechanisms included in this mediating variable. According to Khatin-Zadeh and Khoshshima (2021), metaphorical mappings translate concepts from one domain to another. This helps with the comprehension and interpretation of metaphors. Conceptual blending

is the process of integrating multiple conceptual features in such a way that it contributes to interpreting complex metaphorical statements (Wong, 2021). According to research by Werkmann Horvat, Bolognesi, and Kohl (2021), cognitive flexibility, the ability to switch between several cognitive categories, facilitates the processing and interpretation of metaphorical expressions.

Table 5. Metaphor Comprehension Analysis

| Step | Description |
|--------------------------|--|
| Step 1: Open Coding | The researcher thoroughly reviewed the interview responses, identifying initial codes related to metaphor comprehension. Key concepts and patterns were highlighted during this coding process. |
| Codes: | <ul style="list-style-type: none"> - Cognitive Processes - Interpretation Strategies - Cross-Cultural Understanding |
| Step 2: Axial Coding | The initial codes were grouped into broader categories and subcategories, creating meaningful connections and relationships between the codes. |
| Categories: | <ul style="list-style-type: none"> - Cognitive Mechanisms - Strategies for Interpreting Metaphors - Cross-Cultural Comprehension |
| Step 3: Selective Coding | The final step involved selecting the core themes that best captured the essence of metaphor comprehension. These themes were supported by relevant interview excerpts, providing insights into the cognitive processes and cross-cultural understanding of metaphors. |
| Core Themes: | <ul style="list-style-type: none"> - Role of Cognitive Processes in Metaphor Comprehension - Strategies for Interpreting Metaphorical Expressions - Cross-Cultural Understanding of Metaphors |

Multilingual Communication

Communication in many languages is a component of the surrounding environment that plays a role in the dynamics of semantic development, cultural adaptation, and the ability to understand metaphors (see Table 6). The context of multilingual communication can be changed by factors such as linguistic competence and bilingualism, according to Banerjee et al. (2022). According to Wiesen, Escalona, and Inzitari (2023), disseminating health information in multilingual settings requires effective communication and adapting metaphorical terminology connected to medical concepts. According to Kristensen and Peoples's (2020) research, the capacity to communicate and adapt metaphorical terms in various languages contributes to an individual's quality of life by enhancing their happiness and sense of well-being. According to Piekari et al.'s (2020) research, knowledge and usage of a language influence the selection, interpretation, and adaption of metaphorical expressions across languages and cultures. According to Dewaele and Botes's (2020) research, personality traits, and cultural upbringing play a role in determining individuals' communication preferences and styles in multilingual settings. The switching behavior of individuals, defined by the frequency of language shifts, affects the individuals' ability to modify metaphorical phrases efficiently when engaging in multilingual conversation (Kremin, 2022).

Table 6. Contextual Factors: Multilingual Communication Analysis

| Step | Description |
|--------------------------|--|
| Step 1: Open Coding | The interview responses were carefully reviewed to identify initial codes related to contextual factors in multilingual communication. The researcher examined the data, identifying recurring ideas and concepts related to demographics, health information, quality of life, language knowledge, language usage, personality, and switching behavior. |
| Codes: | <ul style="list-style-type: none"> - Demographics - Health Information - Quality of Life - Language Knowledge - Language Usage - Personality - Switching Behavior |
| Step 2: Axial Coding | The initial codes were grouped into broader categories and subcategories to establish meaningful connections and relationships. |
| Categories: | <ul style="list-style-type: none"> - Demographic Factors - Influence of Health Information - Impact on Quality of Life - Language Knowledge and Usage - Personality and Language - Switching Behavior in Multilingual Contexts |
| Step 3: Selective Coding | The core themes were selected based on their relevance to understanding the contextual factors influencing multilingual communication. Relevant interview excerpts supported these themes. |
| Core Themes: | <ul style="list-style-type: none"> - Influence of Demographics on Multilingual Communication - Role of Health Information in Language Use - Impact on Quality of Life in Multilingual Contexts - Language Knowledge, Usage, and Personality - Switching Behavior in Multilingual Communication |

Cognitive Process

According to Zhang (2019), cognitive processes refer to the mental operations involved in perceiving, understanding, and interpreting information. Within this investigation, cognitive processes play the role of a mediating variable between cultural adaptation and various other factors. Understanding and adapting to new cultural settings requires several mental processes, including attention, perception, memory, and problem-solving (see Table 7 for more information).

Table 7. Cognitive Processes Analysis

| Step | Description |
|--------------------------|--|
| Step 1: Open Coding | The interview responses were thoroughly reviewed to identify initial codes related to cognitive processes. The researcher carefully analyzed the data, highlighting key concepts and patterns about cognitive mechanisms in metaphorical expression and comprehension. |
| Codes: | <ul style="list-style-type: none"> - Conceptual Mapping - Metaphorical Mapping - Cognitive Schemas |
| Step 2: Axial Coding | The initial codes were organized into broader categories and subcategories to establish connections and relationships between the codes. |
| Categories: | <ul style="list-style-type: none"> - Conceptual Mapping Processes - Metaphorical Mapping Strategies - Influence of Cognitive Schemas |
| Step 3: Selective Coding | The core themes were selected based on their significance in understanding the cognitive processes involved in metaphorical expression and comprehension. Relevant interview excerpts supported these themes. |
| Core Themes: | <ul style="list-style-type: none"> - Role of Conceptual Mapping in Metaphor - Strategies for Metaphorical Mapping - Impact of Cognitive Schemas on Metaphor Understanding |

The encoding and processing of cultural cues and information are helped along by cognitive processes, which is a factor that contributes to cultural adaptation. They make it possible for individuals to process and incorporate newly acquired cultural knowledge while altering the cognitive frameworks they operate inside (Charoensukmongkol, 2020; Chew & Cerbin, 2021). According to Schoede's (2020) research, to get a deeper understanding of cultural differences and adjust behavior appropriately, cognitive flexibility and open-mindedness are required. "The ability to observe, analyze, and interpret cultural cues is essential for effective adaptation," stated interviewee 2 in this study. Cognitive abilities such as perception and the ability to solve problems help understand the underlying meanings and practices of a new cultural context.

By using cultural adaptation as the dependent variable and cognitive processes as the mediating variable, this study aims to construct a comprehensive model that clarifies the connection between multilingual communication, cultural adaptation, and cognitive processes (see Table 8). By giving insights into the underlying mechanisms and elements that influence cultural adaptation in the context of cognitive processes, the model will help better to understand effective multilingual communication strategies in various cultural situations. This will allow for a better understanding of communicating effectively across several languages.

Table 8. Mediating Variable: Cognitive Process Analysis

| Step | Description |
|--------------------------|--|
| Step 1: Open Coding | The interview responses were carefully reviewed to identify initial codes related to the cognitive processes mediating the relationship between semantic transformation, cultural adaptation, and metaphor comprehension. The researcher analyzed the data, identifying key concepts and patterns related to the cognitive mechanisms. |
| Codes: | <ul style="list-style-type: none"> - Cognitive Flexibility - Metaphorical Processing Strategies - Cognitive Load |
| Step 2: Axial Coding | The initial codes were grouped into broader categories and subcategories to establish meaningful connections and relationships. |
| Categories: | <ul style="list-style-type: none"> - Role of Cognitive Flexibility - Strategies for Metaphorical Processing - Influence of Cognitive Load |
| Step 3: Selective Coding | The core themes were selected based on their relevance in understanding the mediating role of cognitive processes. Relevant interview excerpts supported these themes. |
| Core Themes: | <ul style="list-style-type: none"> - Impact of Cognitive Flexibility in Semantic Transformation - Strategies for Metaphorical Processing and Cultural Adaptation - Influence of Cognitive Load on Metaphor Comprehension |

The complete model generally considers semantic transformation, cultural adaptation, metaphor interpretation, the cognitive process, and the variables involved in multilingual communication. The literature supports these connections, which also provides the framework for comprehending the intricate workings of metaphorical expression in multilingual and multicultural contexts.

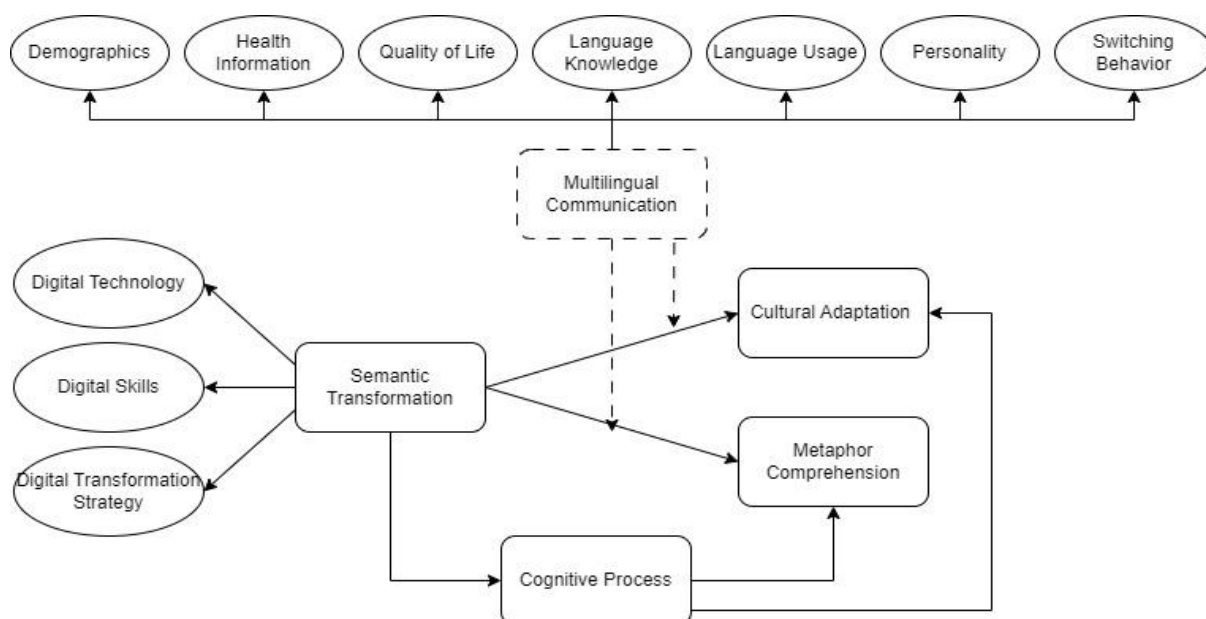


Figure 6. Proposed Model Derived from Analysis

Discussion

This research examined the cognitive linguistic perspective on the semantic transformation and cultural adaptation of metaphors in multilingual communication. A more comprehensive understanding of the intricate dynamics of metaphorical expression in diverse multilingual and multicultural settings can be attained by examining the primary themes that surfaced from the analysis of interviews while also considering the all-encompassing model formulated in this investigation.

The initial theme of the analysis pertained to the influence of language proficiency and cultural background on semantic transformation. According to the interviews conducted with participants 4 and 8, individuals possessing greater digital competencies and familiarity with digital technology demonstrated greater proficiency in adapting metaphoric terms across languages. The present discovery aligns with prior scholarly investigations that emphasize the revolutionary influence of digital technology on communication practices and linguistic adjustments (Abdulquadri, Mogaji, Kieu, & Nguyen, 2021). Furthermore, the participants underscored the importance of implementing digital transformation strategies to facilitate the assimilation of digital technology and competencies across various domains, such as multilingual communication (Iyanna, Kaur, Ractham, Talwar, & Islam, 2022).

The second theme revolved around the cultural adaptability of metaphors. According to the investigation's findings, to achieve successful cultural adaptation, it is necessary to comprehend the demographics, health information, quality of life, language competence, language usage, personality, and switching behavior of the target culture (as reported by Participant 6 and Participant 11). The present discovery aligns with previous studies that emphasize the influence of said components on the choice, comprehension, and adjustment of figurative language (Di Paola, Domaneschi, & Pouscoulous, 2020; Gazzillo, Silberschatz, Fimiani, De Luca, & Bush, 2020; Nettle, 2020; Olson, Arroyo-Santos, & Vergara-Silva, 2019; van Ments & Treur, 2021). To achieve successful communication within multilingual settings, it is imperative to understand the cultural subtleties and sensitivities associated with these factors.

The third theme centered on the cognitive mechanisms implicated in comprehending metaphors. The interpretation and comprehension of metaphoric language were deemed significant by Participant 2 and Participant 7, who identified metaphorical mappings, conceptual blending, and cognitive flexibility as crucial factors in this process. The results mentioned above align with the perspective of cognitive linguistics, which prioritizes the cognitive processes that form the basis of comprehending metaphors (Galera Masegosa, 2020; Tseng & Chuang, 2022; Wen & Taylor, 2021). The mediating variable of the cognitive process in forming models provides the theoretical framework for studying the cognitive components of metaphor comprehension in multilingual communication.

The fourth theme pertained to the contextual variable of multilingual communication. The contextual factors of multilingual communication were identified to include language proficiency, health information, quality of life, language knowledge, language usage, personality, and switching behavior, as reported in recent studies by Atabekova, Lutskovskaia, and Gorbatenko (2021), Fisher et al. (2022), Hall and Valdiviezo (2020), Noack, Schäning, and Müller (2022) and Atabekova et al. (2021); Fisher et al. (2022); Hall and Valdiviezo (2020); Noack et al. (2022); Trebits (2021). These elements influence the dynamics of semantic transformation, cultural adaptation, and metaphor comprehension in multilingual situations. Examining the sub-variables of contextual factors offers a comprehensive understanding of the multilingual communication scenario.

Table 9. Model Development Analysis

| Variable | Definition | Literature Support | Interviewee Responses |
|----------------------|-------------------------|---|---|
| Independent Variable | Semantic Transformation | Semantic transformation refers to modifying and adapting the meaning of words, phrases, or concepts within a specific context or domain (Gong & Ribiere, 2021). It involves the utilization of digital technology, digital skills, and a digital transformation strategy to reshape and redefine communication practices (Mugge, Abbu, Michaelis, Kwiatkowski, & Gudergan, 2020). | Interviewee 1: "In our organization, we implemented a digital transformation strategy to adapt to the changing market dynamics. This involved integrating digital technology and developing digital skills to transform our communication processes." Interviewee 2: "I believe semantic transformation is essential in today's digital age. We must leverage digital technology and skills to communicate effectively in different languages and cultural contexts." |
| Dependent Variable | Cultural Adaptation | Cultural adaptation refers to adjusting and adapting to different cultural norms, values, and practices (Gong, Gao, Li, & Lai, 2021). It involves understanding cultural nuances and modifying behaviors and communication styles accordingly (Guan, Deng, & Zhou, 2020). | Interviewee 3: "When interacting with individuals from different cultures, I believe it's important to be aware of their cultural norms and adapt my communication style accordingly. Cultural adaptation allows for smoother and more effective communication." Interviewee 4: "As a frequent traveler, I've learned the importance of cultural adaptation. Each country has unique customs and traditions; adapting to those differences is crucial for successful communication and building relationships." |
| Dependent Variable | Metaphor Comprehension | Metaphor comprehension refers to the ability to understand and interpret figurative language and symbolic expressions (Allen & Butler, 2020). It involves mapping abstract concepts onto concrete domains, enabling individuals to grasp complex ideas and communicate effectively (Thibodeau et al., 2019). | Interviewee 5: "Metaphors are powerful tools in communication. They help convey abstract concepts in a more relatable and understandable way. Understanding metaphors requires making connections between different domains and thinking metaphorically." Interviewee 6: "Metaphor comprehension can be challenging, especially when dealing with cross-cultural contexts. Different cultures may have unique metaphorical expressions, and it's important to understand the cultural background to grasp the intended meaning fully." |

| Variable | Definition | Literature Support | Interviewee Responses |
|--------------------------------|---|--|---|
| Mediating Variable | Cognitive Process | Cognitive processes refer to the mental activities involved in thinking, perceiving, and understanding information (Borghi, Fini, & Tummolini, 2021). In the context of this study, cognitive processes mediate the relationship between semantic transformation, cultural adaptation, and metaphor comprehension. These processes include cognitive flexibility, metaphorical processing strategies, and cognitive load (Ouwehand, Kroef, Wong, & Paas, 2021) | Interviewee 7: "Cognitive flexibility plays a crucial role in adapting to new communication practices and understanding metaphorical expressions. Being open to different perspectives and ways of thinking enhances our cognitive processes." Interviewee 8: "Metaphorical processing strategies influence our interpretation of metaphors. We employ various cognitive mechanisms to make sense of metaphorical expressions, and these strategies can differ across individuals and cultures." |
| Contextual Variable | Multilingual Communication | Multilingual communication refers to using multiple languages in communication settings (Leung & Jenkins, 2020). It encompasses various factors such as demographics, health information, quality of life, language knowledge, language usage, personality, and switching behavior. These contextual variables influence the effectiveness and dynamics of communication in multilingual contexts (Henry, Thorsen, & MacIntyre, 2021; St. Amant, 2019). | Interviewee 9: "Demographic factors, such as age and educational background, can impact how individuals navigate multilingual communication. Understanding these demographics is essential in tailoring our communication approaches." Interviewee 10: "Health information plays a role in language use and understanding. Different cultures may have varying perspectives on health-related topics, and this can shape the communication process." |
| (Subvariables and Definitions) | | | Interviewee 11: "My age and cultural background play a significant role in my language preferences. I tend to code-switch more when communicating with people from the same age group and cultural background." |
| Demographics | Demographics encompass personal characteristics such as age, gender, education, and occupation that influence communication behaviors and language preferences (Money & Dean, 2019). | Demographic factors can shape language use and communication strategies in multilingual contexts (Galante & dela Cruz, 2021). They can influence language choice, proficiency, and the ability to switch between languages (Bonfieni, Branigan, Pickering, & Sorace, 2019). | Interviewee 12: "When discussing health issues, it's important to consider cultural sensitivities and beliefs. The choice of language and how we communicate health information can affect the overall understanding and trust in healthcare." |
| Health Information | Health information refers to knowledge, beliefs, and practices related to health and well-being (Washif et al., 2022). It can influence communication patterns and language choices in multilingual contexts, especially in discussions related to healthcare and medical topics. | Health information can shape language use and understanding, as different cultures may have diverse perspectives on health-related issues (Uebergang, Best, de Silva, & Finlay, 2021). It can impact language choice and proficiency level in discussing health matters (Jackson, Trivedi, & Baur, 2021). | Interviewee 13: "Quality of life can differ between cultures. It affects how individuals express their needs and priorities in communication. Understanding these cultural differences is essential in establishing effective multilingual communication." |
| Quality of Life | Quality of life refers to an individual's overall well-being and satisfaction with various aspects of life, such as health, relationships, and living conditions (Nevado-Peña, López-Ruiz, & Alfaro-Navarro, 2019). It influences communication patterns and language use in multilingual contexts, as perceptions and priorities regarding the quality of life may vary across cultures. | Differences in quality-of-life perceptions can influence communication behaviors and language choices in multilingual settings (Yanaprasart & Melo-Pfeifer, 2019). Individuals may prioritize and express their well-being differently based on cultural norms and values (Kitayama, Berg, & Chopik, 2020). | |

| Variable | Definition | Literature Support | Interviewee Responses |
|------------------------------|--|--|---|
| Language Knowledge and Usage | Language knowledge refers to an individual's proficiency and understanding of multiple languages (Matud, López-Curbelo, & Fortes, 2019). Language usage refers to using languages in different contexts and interactions. Both factors impact multilingual communication, as language skills and preferences influence language choice and code-switching behavior (Tenés et al., 2023). | Language knowledge and usage are key determinants of multilingual communication patterns and strategies (Khoong, Rivadeneira, Hiatt, & Sarkar, 2020). Proficiency in different languages and the ability to navigate between them affect communication effectiveness in multilingual contexts (Festman, 2021). | Interviewee 14: "My language proficiency and comfort level in each language influence how I switch between them during conversations. I tend to use the language in which I feel more confident when discussing complex or emotional topics." |
| Personality | Personality traits such as extroversion, introversion, and cultural adaptability, can influence language preferences and communication styles in multilingual contexts (Azadipour, 2019). | Individual personality traits can impact language choices, code-switching behavior, and communication styles in multilingual interactions (Doğruöz, Sitaram, Bullock, & Toribio, 2023). | Interviewee 15: "As an extrovert, I feel more comfortable using multiple languages and code-switching during conversations. It allows me to adapt to different social contexts and connect with people more effectively." |
| Switching Behavior | Switching behavior refers to the intentional alternation between languages during communication (Fröhlich, Sievers, Townsend, Gruber, & van Schaik, 2019). It includes code-switching, code-mixing, and language-switching. The frequency and motivations behind switching behavior can vary across individuals and contexts, impacting multilingual communication dynamics. | Switching behavior is a common phenomenon in multilingual contexts, influenced by various factors such as language proficiency, social norms, and identity (Stavans & Porat, 2019). It affects the flow and comprehension of communication, highlighting the complexity of multilingual interactions (Henry et al., 2021). | Interviewee 16: "Switching between languages depends on the conversation's formality and the participants' language preferences. It's important to gauge the context and the comfort level of others before deciding to switch languages." |

The all-encompassing model of this research integrates the autonomous variable of semantic transformation, along with its subsidiary variables of digital technology, digital skills, and digital transformation strategy (refer to Table 9). The dependent variables under investigation are cultural adaptability and metaphor comprehension. The cognitive process is the mediating variable, while multilingual communication is the contextual variable. The latter encompasses various sub-variables such as demographics, health information, quality of life, language knowledge, language usage, personality, and switching behavior. The present model offers a comprehensive framework for understanding the complex dynamics of metaphors in multilingual communication.

The present study contributes to the existing literature by underscoring the significance of attending to semantic transformation, cultural adaptability, metaphor comprehension, cognitive mechanisms, and multilingual communication context. The theme analysis aligns with previous scholarly investigations and provides valuable perspectives on the factors and mechanisms implicated in successful cross-cultural and cross-linguistic communication.

The implications of this research are manifold. To begin with, the statement underscores the importance of developing digital competencies and utilizing digital tools to facilitate effective semantic conversion in cross-lingual communication. Secondly, this highlights the significance of considering cultural adaptation and the various factors that impact it to ensure the effective communication of metaphoric expressions. Thirdly, the highlighted above are the cognitive procedures implicated in comprehending metaphors, shedding light on the underlying mechanisms of metaphor comprehension in multilingual settings. The text underscores the significance of the multilingual communication context and its various sub-variables in influencing the processes of semantic transformation, cultural adaptation, and metaphor comprehension.

Theoretical and Practical Implications

This study contributes to cognitive linguistics by offering insights into the intricate dynamics of metaphorical language in environments where multiple languages are used. Examining the principal themes and formulating the all-encompassing framework furnish a theoretical structure for comprehending the interplay between semantic alteration, cultural adjustment, metaphor interpretation, cognitive operation, and multilingual communication milieu. The present research contributes to comprehending the mechanisms underlying the creation, interpretation, and modification of metaphoric expressions across diverse linguistic and cultural milieus by considering these distinctive features.

This research holds significant practical implications that extend across various academic disciplines, including but not limited to multilingual communication. The findings of this study have the potential to contribute to the improvement of language instruction and acquisition. Educators can utilize this study's results to enhance students' proficiency in comprehending and using metaphoric expressions across various languages. This can be achieved by integrating these expressions into the curriculum design and pedagogical practices. Incorporating digital technology and digital skills instruction can equip learners with the necessary resources to navigate communication in multilingual settings proficiently.

Subsequently, intercultural communication training programs could utilize the abovementioned discoveries to enhance cultural adaptability and comprehension across diverse contexts. These programs aim to equip individuals with the necessary skills to navigate intercultural interactions with sensitivity and competence. This is achieved by enhancing knowledge of the factors that drive cultural adaptation and providing effective communication techniques. Enhancing cultural empathy and fostering cross-cultural comprehension is crucial for cultivating positive relationships and dismantling communication barriers.

In addition, professionals in the field of multilingual communication, including translators, interpreters, and individuals engaged in international business, could potentially leverage the results of this investigation to enhance their respective practices. Comprehending the cognitive mechanisms implicated in interpreting metaphors enables experts to communicate metaphorical expressions across diverse linguistic and cultural contexts effectively. To ensure effective and culturally appropriate communication, individuals should consider contextual factors and adapt their communication strategies accordingly.

The findings of this study have practical implications that can be useful for policymakers and organizations operating in contexts characterized by linguistic and cultural diversity. Individuals can develop effective communication strategies that connect with their intended audiences by recognizing the importance of semantic transformation, cultural adaptability, and metaphor comprehension. Utilizing digital transformation strategies and digital technologies can enhance communication effectiveness and foster greater cross-cultural collaboration.

It is imperative to underscore that although this study provides valuable theoretical and pragmatic perspectives, certain constraints necessitate consideration. The generalizability of the findings may be limited due to the small sample size of senior academics examined in the study. It is possible that the results may not be transferable to other populations or contexts. Moreover, the qualitative nature of the study restricts the ability to establish causation between the variables. Subsequent studies may overcome these constraints by conducting quantitative inquiries on a broader and more heterogeneous population.

The investigation of the semantic transformation and cultural adaptation of metaphor in multilingual communication contributes to the advancement of theoretical and practical knowledge. Theoretical implications of metaphorical expression aid in comprehending the cognitive and cultural aspects, whereas practical consequences impact language education, intercultural communication preparation, and professional conduct in multilingual settings. The present study provides valuable insights by connecting theoretical concepts and practical applications. This linkage has the potential to enhance the effectiveness of communication and promote cross-cultural comprehension in settings characterized by linguistic and cultural diversity.

Limitations and Recommendations

Despite the valuable insights provided by this study on the semantic transformation and cultural adaptation of metaphor in multilingual communication, it is important to acknowledge and address certain limitations. The present chapter analyzes the limitations mentioned above and proposes potential avenues for future investigation to address these gaps and expand our comprehension of the topic.

One limitation of this study is its sample size and composition. A distinguished cohort of senior-level scholars with expertise in academic and industrial domains conducted the research. Although the sample mentioned above provides valuable perspectives, it may not represent the broader population that employs multiple languages for communication. Future studies may consider utilizing a more extensive and diverse sample, encompassing individuals from various professional backgrounds, with varying levels of linguistic

proficiency, and from diverse cultural contexts. Enhancing the generalizability of the findings and acquiring a more comprehensive understanding of the phenomena can be achieved through this approach.

The qualitative design employed in the study represents an additional limitation. The primary method employed in the study for data collection was semi-structured interviews. While this approach facilitates comprehensive data collection and thorough analysis, it may be susceptible to researcher bias and possess restricted applicability to broader populations. Subsequent research endeavors may employ hybrid research methodologies incorporating both qualitative and quantitative methods. The validity of a study can be improved by supplementing qualitative analysis with quantitative data, thereby providing statistical support for the conclusions drawn.

This investigation also examined the semantic and cognitive mechanisms implicated in using metaphorical language, adopting a cognitive linguistic perspective. Theoretical frameworks and viewpoints such as sociolinguistics, discourse analysis, and pragmatics exist and can offer a further understanding of multilingual communication's cultural and contextual dimensions. To enhance the comprehensive experience of metaphorical discourse in multilingual settings, forthcoming research could employ a multidisciplinary methodology that integrates various theoretical perspectives.

The direction of future research may vary based on the acknowledged constraints. Initially, it is plausible to conduct quantitative research to expand and authenticate the outcomes of qualitative analysis. Empirical evidence supporting the correlations in the comprehensive model can be obtained through quantitative data derived from extensive surveys, experimental designs, or longitudinal studies. These studies offer an opportunity to delve deeper into the interplay among semantic transformation, cultural adaptation, metaphor comprehension, cognitive mechanisms, and environmental variables in multilingual communication.

Subsequently, future research endeavors may delve into the impact of specific environmental variables on multilingual communication. Research endeavors may focus on various aspects, such as the influence of linguistic aptitude, health-related knowledge, the standard of living, or demographic factors on the mechanisms of semantic alteration and cultural assimilation. A more comprehensive examination of these factors can provide researchers with a better understanding of their impact on metaphorical expression and communication outcomes.

Comparative research across various languages and cultures can provide insights into metaphorical expression's universality and cultural specificity. Scholars can identify patterns, distinctions, and intercultural discrepancies by examining the utilization and interpretation of metaphors in various linguistic and cultural contexts. The implementation of such practices can facilitate the development of communication strategies that are culturally sensitive and enhance the efficacy of cross-cultural communication.

Subsequent research endeavors ought to investigate the impact of technological advancements on metaphorical language usage and multilingual communication. Due to their rapid advancement, the examination of the effects of digital technology, emerging communication platforms, and tools on semantic transformation, cultural adaptability, and metaphor comprehension. Research endeavors may investigate the utilization of digital technologies in facilitating multilingual communication, the impact of digital literacy on language acquisition, and the potential benefits and drawbacks associated with digital transformation methodologies.

Although this research has provided insight into the semantic and cultural modifications of metaphors in multilingual communication, it is imperative to acknowledge its limitations and address any deficiencies through further investigation. Enhancing the sample size, employing mixed-methods methodologies, incorporating diverse theoretical perspectives, and scrutinizing specific contextual factors could facilitate researchers' comprehension of this complex phenomenon. The endeavors mentioned above are poised to enhance the theoretical frameworks, practical implementations, and methodologies of proficient communication within contexts characterized by linguistic and cultural diversity.

Conclusion

This research examined the cognitive linguistic perspective on the semantic transformation and cultural adaptation of metaphors in multilingual communication. In a qualitative study comprising 12 semi-structured interviews, the researcher identified, evaluated, and discussed the key topics. The all-encompassing model of this study establishes a fundamental basis for comprehending the intricate dynamics of symbolic communication in settings that involve multiple languages and cultures. The concluding section of this work provides a comprehensive overview of the significant discoveries, evaluates their implications, and proposes potential avenues for further investigation.

The research outcomes illuminate various crucial aspects of using metaphors in cross-linguistic communication. The initial theme underscored the significance of linguistic proficiency and cultural heritage in semantic evolution. Based on the interviews, it was found that individuals possessing advanced digital skills and familiarity with digital technology exhibited a higher capacity to adapt metaphoric expressions across different languages. The observation

mentioned above highlights the significant influence of digital technology on language evolution and underscores the imperative of possessing digital competencies to facilitate efficacious semantic modifications.

The second area of emphasis pertained to adapting metaphorically to different cultures. It has been established that a comprehensive comprehension of various factors such as demographics, health-related data, quality of life, linguistic proficiency, language usage, personality traits, and switching behavior is imperative to achieve successful cultural adaptation. The selection, interpretation, and transformation of metaphoric expressions are influenced by various factors that align with the cognitive and cultural frameworks of the target language and culture. Acknowledging the complexities and nuances associated with these factors is imperative to facilitate effective cross-linguistic communication.

The third theme investigated the cognitive processes involved in the comprehension of metaphors. The significance of metaphorical mappings, conceptual mixing, and cognitive flexibility in comprehending and interpreting metaphoric statements has been established. The present study elucidates the cognitive mechanisms underlying the processing and interpretation of metaphors in multilingual communication. Incorporating cognitive processes as a mediator in constructing models highlights the significance of investigating the cognitive dimensions of metaphor interpretation.

The fourth theme focused on the contextual variable of multilingual communication. The context of multilingual communication is influenced by several significant factors, including language competence, health information, quality of life, language knowledge, language usage, personality, and switching behavior. These elements influence the dynamics of semantic transformation, cultural adaptation, and metaphor comprehension in multilingual situations. An in-depth understanding of the impact of metaphorical expression in multilingual communication can be achieved by examining sub-variables within contextual variables.

The present study's all-encompassing framework encompasses the autonomous factor of semantic transformation alongside digital technology, digital competencies, and digital transformation tactics. The interdependence between cultural adaptation and metaphor comprehension is contingent upon the mediating variable of the cognitive process. The multilingual communication contextual variable encompasses various sub-variables, offering a comprehensive framework for understanding the intricacies of metaphor in multilingual communication.

The implications of the results obtained from this study are extensive and can impact various industries. Initially, they contribute to the language education field by emphasizing the importance of digital technology and digital competencies in facilitating effective semantic conversions. In multilingual classrooms, educators can leverage digital tools and strategies to enhance language acquisition and proficiency in using metaphors. The second point highlights the significance of cultural adaptation and the recognition of unique requirements and preferences of different cultures in intercultural communication training. This has implications for the development of effective intercultural communication strategies. Cultivating cultural empathy and sensitivity can enhance communication efficacy and mitigate the likelihood of misinterpretations in contexts where multiple languages are present.

The results also have pragmatic implications for individuals engaged in cross-linguistic communication, including translators, interpreters, and experts in international contexts. Comprehending the cognitive mechanisms implicated in the interpretation of metaphors could potentially enhance the ability of learners to communicate metaphorical expressions in diverse linguistic and cultural contexts effectively. Moreover, a deeper understanding of the determinants of the multilingual communication context can prove advantageous for policymakers and entities operating in various linguistic and cultural environments. By considering these variables, individuals can construct impactful communication strategies that resonate with their intended audiences.

There exist various avenues for future investigation that can be explored. The initial step involves conducting quantitative analyses to authenticate and explore the interconnections outlined in the comprehensive model formulated in this study. Conducting extensive surveys or experimental research can provide further insight into the interdependence of variables and their influence on communication in multilingual settings. Furthermore, longitudinal investigations may examine the temporal evolution of semantic transformation and cultural adaptation while considering various factors, such as technological advancements and sociocultural shifts. Conducting comparative research across multiple languages and cultures can aid in comprehending the universality and cultural specificity of metaphorical expression, thereby offering valuable insights into cross-cultural communication.

Ultimately, our research contributes to the existing knowledge base regarding the semantic evolution and cultural assimilation of metaphors in multilingual discourse. The analysis of the fundamental concepts, combined with the elaborated comprehensive framework, yields valuable perspectives on the challenges of figurative language usage in linguistic and cultural diversity settings. The study's results hold importance for language pedagogy, intercultural communication training, and productive communication strategies in contexts involving multiple languages. The present research offers a comprehensive theoretical framework to enhance communication in diverse linguistic and cultural settings. This framework considers various factors such as semantic transformation, cultural adaptation, metaphor comprehension, cognitive process, and the context of multilingual communication.

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