

# How Does Generative AI Function as an Active Cross-cultural Communication Agent?

## A case study of Japanese literature translation using ChatGPT-4

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**ABSTRACT:** This study explores how generative AI, specifically ChatGPT-4, transcends its role as a mere translation tool to become an active agent in cross-cultural dialogue and meaning generation. Against the backdrop of the rapid evolution of AI translation technologies, this research employs a posthumanist framework, drawing on Karen Barad's (2007) agential realism and Roland Barthes' (1967) concept of the "death of the author," to examine how AI can function as a dynamic mediator in translation processes. Using the Japanese novel *Jimmy* as a case study, the research highlights a dual-method approach: translating the original Japanese text into English and Chinese using ChatGPT-4 and conducting a transnational reading session in Penang, Malaysia. The novel, chosen for its accessibility and themes of cultural intersection, served as a medium to examine the potential of AI in fostering cross-cultural understanding. Participants from Japan and Malaysia engaged in discussions on key chapters, offering interpretations shaped by their unique cultural contexts. The findings reveal that generative AI, through mechanisms like critical reading question generation and knowledge base updates, enables translations to incorporate deeper cultural nuances and reflect dynamic interpretations. The process illustrates AI's capacity to facilitate a "diffractive" translation approach, where intersecting perspectives generate new layers of meaning. However, limitations emerged, such as ChatGPT-4's RAG filtering, which restricted certain translations and necessitated human intervention. This interplay between AI and human translators underscores the evolving nature of their collaborative relationship. The study highlights generative AI's

potential to transform cultural dialogue and translation practices. By acting as a bridge between diverse cultural perspectives, AI can contribute to educational initiatives, enhance the quality of translations in the industry, and foster mutual understanding in cross-cultural interactions. Future research should explore the scalability of this approach across different languages and cultural contexts, further refining the collaborative dynamics between AI and human participants.

**KEYWORDS:** generative AI, cross-cultural dialogue, translation studies, collaborative translation, posthumanism

**要旨:** 本研究は、生成AIであるChatGPT-4を用いた日本文学作品『ジミー』の翻訳を事例に、AIが単なる翻訳ツールを超えて異文化対話と意味生成の活性化エージェントとして機能する可能性を探求したものである。カレン・バラッドの「実在の現実主義」やローラン・バルトの「作者の死」といったポストヒューマニズムの理論を枠組みに採用し、AIが翻訳プロセスで文化的ニュアンスや動的解釈を取り込む方法を分析した。具体的には、AIと人間の協働による翻訳プロセスを提案し、批評的質問や解析テキストを通じて翻訳内容を更新・深化させた。また、マレーシアで開催したトランスナショナル読書会を通じて、参加者の多様な文化的背景が新たな解釈を生み出す過程を観察した。研究結果から、生成AIは文化的文脈を動的に反映し、翻訳を単なる技術的行為ではなく文化的対話の場に転換する潜在能力を持つことが示された。本研究は教育や翻訳業界、国際交流の分野でのAIの新たな可能性を示し、異文化対話を促進する具体的手法を提案する。

**キーワード:** 生成AI, 異文化対話, 翻訳研究, 協働翻訳, ポストヒューマニズム

## 1. Introduction

The rapid advancement of generative AI, exemplified by ChatGPT and other large language models, has opened new possibilities for literary translation and cross-cultural dialogue. Traditional translation methods have predominantly focused on linguistic equivalence, often failing to capture cultural nuances and subtle contextual meanings, resulting in one-directional and static interpretations. Generative AI, by leveraging attention mechanisms, enables dynamic, context-dependent interpretations, allowing for continual

updates in alignment with specific cultural contexts. Particularly, the dynamic computation of attention scores based on contextually relevant information holds the potential to generate novel meanings at the intersection of diverse contexts and knowledge domains.

This capacity of generative AI can be reevaluated through the lens of posthumanism. Posthumanism transcends anthropocentric perspectives, emphasizing the co-creative processes of meaning generation that arise from interactions between human and non-human entities. Rosi Braidotti (2013) highlights that such collaboration within the posthuman framework fosters new forms of agency, suggesting that generative AI could function as an active agent in the translation process. Central to this perspective is Karen Barad's (2007) concept of agential realism, which posits that reality is dynamically constructed through the interactions of diverse agents, including observers and tools. Her notion of "diffraction," where intersecting contexts and agents dynamically generate multi-layered meanings, aligns closely with the operational principles of generative AI.

Furthermore, Roland Barthes' (1967) concept of "The Death of the Author" underscores that the meaning of a text is not fixed by the author's intent but dynamically re-generated through interaction with readers. Applying this framework, generative AI transcends its role as a translation tool, dynamically mediating cultural contexts through its attention mechanism.

While generative AI and human collaboration models introduce new possibilities for translation, they also reveal limitations. Tong King Lee (2023) highlights that AI translation often exhibits a literal bias and struggles to incorporate cultural nuances, necessitating human intervention to enhance translation quality. This study proposes a novel collaboration model wherein generative AI and humans engage in "intra-action" by sharing a knowledge base and dynamically updating the AI's attention mechanism to integrate cultural nuances into translations. However, the study also identifies challenges, such as the restrictions imposed by Retrieval-Augmented Generation (RAG) filtering, which sometimes limits AI's capacity to translate specific content. These constraints underscore the evolving role of human intervention in complementing AI translation, redefining human-AI collaboration.

This study examines how translations are refined through novel human-AI collaborative approaches and how cross-cultural meaning generation

occurs in transnational reading groups using multilingual translations. Employing Barad's agential realism and the concept of diffraction as its theoretical framework, the study explores how generative AI mediates cross-cultural dialogue and generates new interpretations through translation. Using the Japanese novel *Jimmy* (Aoumi, 2022) as a case study, the research demonstrates how generative AI collaborates with humans to reflect cultural nuances and co-create innovative interpretations.

In contrast to previous studies that primarily emphasize performance comparisons and technical limitations of AI translation, this research redefines the translation process as a collaborative act involving AI, humans, and intersecting cultural contexts. From this perspective, it seeks to elucidate the cultural and social significance of generative AI beyond its technical capabilities, offering new possibilities for translation and cross-cultural communication.

## 2. Literature Review

### 2.1 Technical Background and Challenges of AI Translation

AI translation has shown potential to surpass traditional translation techniques with the advent of generative AI technologies. Notably, the transformer model introduced by Ashish Vaswani et al. (2017), based on attention mechanisms, enables dynamic, context-aware translation. This model significantly improves translation accuracy by capturing precise dependencies between words and phrases. However, Lee (2023) observes that AI translation faces significant challenges in addressing cultural nuances and contextual subtleties, often producing overly literal translations. To mitigate this, human translators are frequently required to refine and contextualize these outputs. AI translations tend to be overly literal, often requiring human translators to supplement and enhance cultural and contextual accuracy.

To address this limitation, this study proposes a novel approach where generative AI interacts with humans to update its attention mechanisms through the incorporation of analytical texts into its knowledge base. This method seeks to integrate cultural nuances into AI translations, offering an innovative solution to existing challenges.

## 2.2 Theoretical Framework of Posthumanism and Its Application to Translation

Posthumanism reexamines the relationships between humans and non-human entities, exploring new possibilities for meaning-making. Braidotti (2013) emphasizes that posthuman agency arises through the collaboration of humans and technologies, generating new forms of subjectivity. This perspective is instrumental in reassessing the role of generative AI within the translation process. Moreover, Barad's (2007) concept of agential realism demonstrates how reality is co-constructed through the intra-action of observers and tools, providing a theoretical basis for understanding how generative AI and humans collaboratively generate new meanings during translation.

Generative AI becomes an active "actor" in translation, fostering dynamic cultural interactions. It plays a critical role in bridging cultural contexts and fostering dynamic interactions. This study reevaluates generative AI from a posthumanist perspective, framing the translation process as a site of cultural dialogue.

## 2.3 Importance of Cultural Nuance in Translation Studies

Translation studies have long emphasized the importance of reflecting cultural contexts and nuances beyond simple linguistic conversion. Barthes' (1967) theory of "The Death of the Author" asserts that textual meaning is not fixed by the author's intent but dynamically generated through interaction with readers. This concept suggests that generative AI can collaborate with human readers and authors to generate new meanings during translation.

In the case of *Jimmy*, the novel analyzed in this study, the nuanced psychological depictions of characters and cultural contexts are central to understanding the narrative. By incorporating these elements into the knowledge base through analytical texts, the generative AI translation process enables deeper cultural interpretation and reflects subtleties essential to the story's comprehension.

## 2.4 Gaps in Existing Research and the Position of this Study

While existing studies primarily discuss the performance and technical limitations of AI translation, there is a lack of exploration into how AI and human collaboration can evolve the translation process. Lee (2023) underscores the necessity of human intervention to supplement AI's shortcomings in capturing cultural nuances, yet does not explore how this collaboration could be systematized. This study applies Barad's concept of intra-action to the translation process, proposing a new collaborative model for generative AI and humans. Furthermore, it demonstrates how generative AI can function as an active agent capable of fostering cultural dialogue in translation.

The significance of this study lies in redefining translation as a dynamic space of meaning generation through the collaboration of generative AI and humans. It establishes a new framework for promoting cross-cultural dialogue, positioning translation as not merely a technical process but a collaborative cultural endeavor.

## 3. Theoretical Framework

This study explores how generative AI dynamically generates cultural meaning in translation and facilitates cross-cultural dialogue. To achieve this, the research integrates Barad's (2007) concept of agential realism, Barthes' (1967) theory of "The Death of the Author," the attention mechanism proposed by Vaswani et al. (2017), and N. Katherine Hayles' (1999) perspectives on human-technology interaction. It also builds upon Lee's (2023) findings on AI translation to establish a theoretical foundation for a collaborative model between generative AI and humans.

### 3.1 Agential Realism and Diffraction

Barad's (2007) agential realism posits that reality is not static or independent but dynamically generated through the intra-action of various agencies, including observers and tools. This framework emphasizes that human and non-human elements mutually interfere to create new meanings. Her concept of "intra-action" differs from traditional "interaction," as it focuses on the creation of agency and existence through the process of mutual engagement itself.

She also employs the metaphors of “reflection” and “diffraction” to explain phenomena:

- **Reflection:** Represents static, singular perspectives and the transmission of fixed meanings.
- **Diffraction:** Describes dynamic processes where differing contexts and agencies intersect and interfere, generating new meanings.

In the context of AI translation, the concept of diffraction offers critical insights. When generative AI incorporates cultural contexts into translations, it operates as a space for intra-action, generating novel interpretations through collaboration with humans. In this process, generative AI emerges as an active mediator, dynamically facilitating cross-cultural dialogue through intra-action.

This study redefines the collaborative model between humans and AI by applying Barad’s theories to address challenges identified by Lee (2023). He emphasized that AI translations tend to be overly literal, struggling with cultural nuance and requiring human intervention to enhance quality. His framework conceptualizes AI translation as primarily reflective, requiring human engagement to transform static interpretations into dynamic, multi-layered ones, a process Barad’s concept of diffraction can illuminate. However, this study proposes a novel methodology where generative AI dynamically updates its attention mechanisms by integrating “analytical texts” into its knowledge base. This approach enables AI to produce culturally nuanced translations, fostering a collaborative diffraction process between AI and humans.

### 3.2 “The Death of the Author” and Dynamic Interpretation

Barthes’ (1967) theory of “The Death of the Author” asserts that textual meaning is not fixed by the author’s intent but dynamically generated through interaction with readers. Within this framework, readers are positioned as active agents in the interpretation process, where meaning is influenced by cultural contexts and individual experiences.

The relationship between generative AI and Barthes’ theory can be conceptualized as follows:

- **Providing new perspectives:** Generative AI produces critical questions

and translations that offer readers novel viewpoints.

- **Mutual interference:** The interpretations generated by AI and those of human readers interact, creating new insights through intra-action.
- **Intersection of cultural backgrounds:** Readers from diverse cultural contexts integrate AI-generated interpretations, enabling multi-layered meaning-making.

Generative AI, therefore, is not merely a static translator but an active agent capable of dynamically generating interpretations.

### 3.3 Attention Mechanisms and RAG-Based Information Control

The attention mechanism in generative AI plays a central role in dynamically focusing on relevant information during translation. This study analyzes the process of uploading “analytical texts” into the GPT application, enabling AI to produce translations that reflect contextual nuances. This process aligns with Barad’s concept of intra-action, where AI integrates external information with its internal knowledge to create new meanings.

However, the RAG framework imposes limitations on AI’s access to certain information, leading to instances where specific texts cannot be translated. In such cases, human translators must intervene to complete the translation process, redefining the division of roles between humans and AI. This highlights a shift from the traditional “AI translation → human supplementation” model to a dynamic, intra-active collaboration where generative AI and humans interactively enhance the translation process.

This evolving role of generative AI aligns with Hayles’ (1999) perspective on human-technology interaction. She suggests that humans and technology co-evolve through mutual influence. The findings of this study exemplify this co-evolution, demonstrating a novel form of collaboration between humans and generative AI that advances the translation process.

## 4. Case Study: Multilingual Translation and Book Discussion of *Jimmy*



## 4.1 Overview of the Study

This study analyzes a transnational book discussion held on August 11, 2024, in Penang, Malaysia, as a case study. Participants included five Japanese individuals, two Malaysian Chinese students learning Japanese (whose primary study languages were English and Chinese), the author of *Jimmy*, and a facilitator. Japanese participants were provided with the original Japanese text, while Malaysian Chinese participants received the text translated into English and Chinese using generative AI (ChatGPT-4). This setup facilitated dialogue that transcended linguistic and cultural boundaries.

The selection of *Jimmy* as the focus of this study was based on three considerations. First, its simple language ensures comprehension even after translation. Second, its low dependency on Japanese cultural contexts makes it more accessible to readers from other linguistic and cultural backgrounds. Third, the story, centered on Jimmy—a boy unbound by fixed notions of nationality or language—and the transformative interactions he has with the protagonist, Mai, aligns with the experimental nature of the transnational book discussion. Furthermore, permissions for multilingual translations were secured from the publisher and the author, facilitating its inclusion in this study.

Originally written in Japanese, *Jimmy* was translated into English and Chinese using generative AI. Discussions during the book session focused on Chapters 1 and 6, the narrative's core, but expanded to encompass the entire text. The protagonist, Jimmy, is portrayed as a boy raised in Penang who transfers to a Japanese high school. Japanese participants experienced firsthand the environment in which Jimmy grew up and engaged with Malaysian participants, which prompted them to reinterpret the story. Conversely, Malaysian Chinese participants gained new insights into the Japanese school setting by interacting with Japanese participants.

## 4.2 Synopsis of *Jimmy*

*Jimmy* tells the story of Junichiro (nicknamed Jimmy), a transfer student returning to Japan from Malaysia, who navigates cultural conflicts and struggles at a Japanese high school. While attending an international school in Malaysia, Jimmy chose the English name “Jimmy” as a representation of his multicultural identity. However, within Japan's rigid school culture, his name

and behavior are perceived as “other,” leading to prejudice and alienation from his peers.

The story is narrated from the perspective of Mai, one of Jimmy’s classmates, who herself experiences pressures and self-doubt within Japan’s educational environment. Meeting Jimmy becomes an opportunity for Mai to reevaluate her own life and struggles.

In Chapter 1, Jimmy introduces himself by choosing to go by “Jimmy” rather than “Junichiro,” creating cultural tension in the classroom. This choice reflects his multicultural identity but is met with confusion and subtle distancing from his peers in Japan’s uniform school culture. This scene highlights societal pressures to conform and the implicit expectations of “normalcy” in Japanese society, symbolizing both Jimmy’s isolation and Mai’s internal conflict.

Chapter 6 delves into Jimmy’s experiences at his international school in Malaysia and reveals the significance behind his choice of the name “Jimmy.” This episode sheds light on the interplay between identity and naming while exposing the arbitrariness and violence embedded in the act of naming. Meanwhile, Mai opens up about her own struggles within Japan’s school culture, particularly a traumatic experience involving her inability to perform a pull-over on a horizontal bar, which became a symbol of her self-doubt and over-internalized societal expectations. Through her conversations with Jimmy, Mai revisits her past, gaining an opportunity to reframe her experiences and discover a new sense of self in her relationships with others.

### **4.3 Collaborative Translation Process Between Generative AI and Humans**

This study utilized generative AI (ChatGPT-4) to translate the complete Japanese text of *Jimmy* into English. The Japanese text was uploaded to the GPTs app as a knowledge base, and the context was shared to facilitate the translation of individual sections. This initial output is referred to as “Translation 1.” However, due to restrictions imposed by the RAG filtering mechanism of ChatGPT-4, certain parts of Chapter 13 were deemed “non-compliant with usage policies” and could not be translated. These portions were subsequently completed by human translators to produce a finalized translation.

The study then introduced a collaborative process. Generative AI was

tasked with generating critical reading questions based on Chapter 1 of the Japanese text. The author provided responses to these questions, which were compiled into an “analytical text” for Chapter 1. This analytical text was then reuploaded to the GPTs app as part of its knowledge base, dynamically updating the AI’s attention mechanism. Using this updated framework, generative AI retranslated Chapter 1, resulting in “Translation 2.” This process demonstrates the intra-action between generative AI and humans, as outlined in Tables 1 and 2, and highlights how collaborative interactions dynamically enhance the translation process.

**Table 1: Analytical text for Chapter 1 (critical reading questions and author’s responses)**

No.	Question	Author’s response
1	What is the meaning of the chapter title “Different”? Specifically, how does it relate to the appearance of Jimmy, the new transfer student?	Mai describes her high school life as being akin to a “village society.” Japanese schools are often homogenous groups composed of students raised in similar environments with shared values. The story begins with the arrival of Jimmy, a returnee student who represents something “different.” Thus, the title “Different” hints at the expectation that Jimmy will bring something unique and transformative to the story.
2	Through the reactions of Yukari and other classmates, what can we learn about the attitudes and values of Mai’s classmates?	The classmates initially judge Jimmy by his appearance and evaluate him within their perceived social hierarchy. For example, when they laugh at his name, saying “Is he a foreigner?”, it reflects their preconceived notion that foreign-sounding names are not Japanese. Additionally, their assumption that returnee students always come from the U.S. reveals another stereotype: the tendency to equate all foreignness with America in Japanese culture.
3	How did Jimmy’s introduction as “Jimmy” affect the class as a whole? How do you interpret their reactions?	The name “Jimmy” caused confusion, revealing the classmates’ uncertainty about how to classify him within their social framework. When the class eventually bursts into laughter, it indicates their shared decision to frame Jimmy as “funny.” To these students, the combination of “Jimmy” and the returnee student represents a “blank slate” of meaning, which is only filled when Tanaka remarks, “He’s totally Japanese—or maybe Chinese.” This process illustrates how the class resolves ambiguity by assigning meaning.

No.	Question	Author's response
4	What emotions does Mai have toward Jimmy? What can be inferred from her actions and internal monologue?	Mai feels a sense of pity for Jimmy, as evident when she remarks that it would be “cruel to abandon him.” Her statement about feeling “empathetic shame” also suggests that she empathizes with him, perhaps identifying with his situation. This sense of connection likely motivated her to offer to help him with homework.
5	At the end of the chapter, Mai says to Jimmy, “Let’s do homework together again.” How can this be interpreted in terms of her emotional transformation and its background?	Mai’s internal monologue reflects her confusion about Jimmy: “He feels disjointed, awkward, pathetic, troubling... incomprehensible.” For Mai, Jimmy represents “difference,” someone she struggles to understand. Yet, her dissatisfaction with the “village society” and her oppressive daily life—marked by social conformity and emotional exhaustion—makes her see in Jimmy a potential escape from these confines. Her offer to reconnect with him suggests an unconscious hope for transformation.

**Table 2: Differences between Translation 1 and Translation 2**

Comparison element	Translation 1	Translation 2
<b>Title translation</b>	“Different—Our World Is Not a Hollywood Movie”	“The Different”—Our World Is Not a Hollywood Movie
<b>Jimmy’s appearance description</b>	“His hair, just short of being a bob cut, was messy with bedhead... He wasn’t terribly ugly, but his appearance wouldn’t catch anyone’s attention anywhere.”	“His hair, just short enough to almost be a bob, was disheveled with bedhead... He wasn’t exactly ugly, but his appearance wouldn’t catch anyone’s interest no matter where he went.”
<b>Class’s reaction</b>	“An awkward vacuum-like silence filled the room . . . small chuckles and murmured voices began to fill the gaps.”	“A vacuum-like silence filled the room . . . small giggles and murmurs started to fill the gaps in the air, as if trying to smooth over the awkwardness.”
<b>Taninaka’s teasing remark (appearance)</b>	“He doesn’t even look like a Jimmy. He’s clearly Japanese—or maybe Chinese.”	“He doesn’t look like a Jimmy at all. He’s totally Japanese—or maybe Chinese.”

Comparison element	Translation 1	Translation 2
<b>Mai's reflection (social hierarchy)</b>	"In a group of people with similar traits, we rank ourselves based on certain measures . . . If you're at the bottom, you endure it for three years."	"We sort ourselves based on certain measures . . . If you're at the bottom, you endure for three years."
<b>Koki's provocative line at lunch</b>	"Even if you can speak English, you're still just Jimmy, aren't you?" His voice was provocative and condescending.	"Even if you can speak English, you're still just Jimmy, right?" His voice was mocking and condescending.

The differences between Translation 1 and Translation 2 in this study highlight the impact of incorporating knowledge-based inputs and the critical reading question generation process into the functionality of generative AI. These changes can be better understood through the lens of Barad's concept of agential realism. Specifically, the progression from Translation 1 to Translation 2 can be interpreted as a process of new meaning generation occurring through "intra-action"—the dynamic interplay between the generative AI and the author.

Using her concept of "diffraction," this translation process can be characterized not as a simple "reflection" grounded in static contextual understanding, but as a dynamic and multilayered meaning-making process facilitated through the collaboration between generative AI and humans. The re-input of analytical texts into the generative AI enabled the emergence of novel interpretations of the novel *Jimmy*, which contributed significantly to the enhanced quality of Translation 2.

Applying Barthes' theory of "The Death of the Author" further reveals that generative AI functions not merely as a translator transmitting a fixed authorial intent but as an active agent that dynamically regenerates meaning through interactions with readers. This translation process aligns with Barthes' theory, as the meaning of the text is reconstructed through the interaction of all involved agents—generative AI, the author, and readers—rather than being fixed or singular.

From the perspective of the AI's attention mechanism, the uploading of analytical texts into the GPTs application significantly influenced the generative AI's interpretative focus by dynamically adjusting its attention scores. This process exemplifies Hayles' (1999) concept of "collaboration

between humans and technology” while also aligning with Bruno Latour’s (2005) Actor-Network Theory (ANT). Within the ANT framework, generative AI is not merely a tool but an “actor” within the translation and cross-cultural dialogue network. It interacts dynamically with other agents—such as the author, human translators, and readers—to facilitate new meaning generation. This network-driven interaction underscores the evolution from Translation 1 to Translation 2, highlighting AI’s role in shifting translation from a static activity to a culturally dialogic process.

Moreover, the limitations introduced by RAG filtering, which rendered certain text segments untranslatable, necessitated human intervention. This human contribution redefined the collaborative relationship between humans and generative AI, positioning human translators as “indispensable actors” who complement the limitations of AI. This redefinition of roles signals a new collaborative model for translation processes, where the interplay between generative AI and human actors evolves to meet both technological and contextual challenges.

### 4.4 Comparison of Translation 1 and Translation 2

To examine how ChatGPT-4o acted as a translation agent to update interpretations, responses were generated using the following two prompts:

**Prompt 1:** “What differences can be observed between Translation 1 and Translation 2 regarding cultural context and character depiction?”

Table 3: ChatGPT’s response to Prompt 1

Aspect	Translation 1	Translation 2
<b>Cultural context</b>	Predominantly literal expressions are noticeable. For example, descriptions of Jimmy’s appearance and classmates’ reactions flatten cultural nuances, potentially failing to adequately convey the context to English-speaking readers. Example: “His hair, just short of being a bob cut,	Expressions are more attuned to cultural nuances, reflecting greater subtlety and depth. Example: “His hair, just short enough to almost be a bob, was disheveled with bed-head...” This expression clearly conveys the nuance of “not attracting attention anywhere,” making Jimmy’s balance of ordinariness and

Aspect	Translation 1	Translation 2
	<i>was messy with bedhead...</i> This expression partially conveys Jimmy’s “peculiarity” but lacks specificity.	peculiarity more accessible to English-speaking readers.
<b>Character representation</b>	The psychological depiction and intent of characters remain superficial, failing to adequately express Jimmy’s “peculiarity” or the “unconscious biases” of his classmates.	The reactions of classmates and Jimmy’s internal traits are more finely portrayed, effectively illustrating the “vacuum of peculiarity” intended in the original text.

**Prompt 2:** “How do the expressions in Translation 1 and Translation 2 differently reflect the intentions of the original text?”

**Table 4:** ChatGPT’s response to Prompt 2

Aspect	Translation 1	Translation 2
<b>Reflection of original intent</b>	Faithfully reflects the surface content of the original text but fails to fully convey nuanced cultural and psychological aspects. Consequently, themes such as the “village-like” social dynamics and “peculiarity” are less directly communicated to readers.	More deeply reflects the original intent, successfully conveying subtle nuances related to Jimmy’s “peculiarity” within a cultural context. For instance, the classmates’ unconscious biases are more explicitly communicated, enhancing the story’s overarching themes.

While Tables 3 and 4 do not provide an objective basis for assessing translation accuracy, they serve as valuable indicators of how ChatGPT4o updates its interpretation of the original text. These insights reveal how the AI navigates shifts in meaning and expression, offering a foundation for understanding its dynamic role as a translation actor.

#### 4.5 Implementation of the Transnational Reading Circle

This study employed three versions of the novel *Jimmy*—the original Japanese text and its English and Chinese translations generated by AI—to observe the process of creating new interpretations through dialogue among participants from diverse cultural backgrounds. The reading circle focused primarily on Chapters 1 and 6, fostering *intra-action* (mutual interferences) among

participants from different cultural contexts. Japanese served as the primary language of dialogue, with interpretation provided by participants and the author when necessary. This process aligns with Barad's (2007) concept of "diffraction," wherein the intersection of intercultural perspectives generates new literary meanings.

#### **4.5.1 Chapter 1: Dialogue on Jimmy's "peculiarity" and his name**

Chapter 1, where Jimmy introduces himself as "Jimmy" at his new Japanese high school, became a focal point of discussion. Japanese participants reflected on their own school experiences and recognized the "pressure to conform" and the tendency to reject "peculiarity" within Japanese society. In contrast, Malaysian Chinese participants noted that in Malaysia's multicultural environment, differences in names and appearances are generally less significant and often perceived as intriguing rather than alien. This highlighted how Jimmy's "peculiarity" is deeply rooted in Japan's cultural context.

Moreover, participants explored how cultural and historical contexts shape perceptions of the name "Jimmy." In post-WWII Japan, heavily influenced by American culture, the name "Jimmy" is often associated with America. Conversely, in Malaysia, a former British colony, English names like "Jimmy" are commonly adopted by Malaysian Chinese for practical purposes, such as facilitating business interactions. The discussion revealed that the name "Jimmy" carries distinct cultural connotations depending on the context, emphasizing the cultural contingency of meaning.

#### **4.5.2 Chapter 6: A pull-over on a horizontal bar and the struggle for self-recognition**

In Chapter 6, participants discussed Jimmy's backstory of choosing his English name and Mai's recollection of her struggles with performing a pull-over on a horizontal bar in physical education. Jimmy's narrative revealed the complex relationship between names and identity, while Mai's experience illustrated how "failure" within the pressures of Japanese societal norms became a source of self-denial.

Japanese participants shared their perspectives on the pull-over on a horizontal bar as a rite of passage in school life, reflecting on their own



memories and empathizing with Mai's distress. Malaysian participants, on the other hand, expressed surprise at the significance attributed to this act in Japanese culture, prompting them to reconsider the meanings of societal expectations and standardized roles in different cultural contexts. These exchanges deepened participants' understanding of how cultures impose standardized norms—manifested in acts such as naming or performing a pull-over on a horizontal bar—and how individuals might resist or reinterpret these pressures. Consequently, Jimmy's act of naming himself was reinterpreted as a symbolic departure from cultural frameworks.

#### 4.5.3 Deepening interpretations through dialogue with the author

The session concluded with a dialogue with the author, Amy Aoumi, who provided fresh perspectives on the novel's themes and background. Notably, compared to previous reading circles held in Japan, the multicultural environment of Penang prompted a reevaluation of Jimmy's "peculiarity" as a character shaped by intercultural contexts. Through this dialogue, participants reaffirmed that the novel's themes acquire different meanings depending on cultural and contextual lenses, highlighting the fluid, multilayered nature of interpretation.

#### 4.5.4 Diffractive processes and the generation of new perspectives

Throughout the reading circle, interactions between participants' differing cultural backgrounds led to the emergence of new interpretations. Key insights included:

- **Jimmy's name and otherness:** The contrast between the sense of "peculiarity" associated with Jimmy's name in Japan and its "ordinariness" in Malaysia illustrated how the cultural meanings of names vary across social and geographical contexts.
- **Impact of conformity pressure:** The influence of societal expectations and norms on individual identity formation in Japan was illuminated through its juxtaposition with Malaysia's multicultural environment.
- **Reinterpretation of symbolism:** The pull-over on a horizontal bar episode was reexamined as a symbol of social expectations and personal struggle, transcending its original physical context.

These findings exemplify Barad's (2007) concept of "diffraction," wherein the interplay of diverse cultural perspectives generates new literary meanings through a dynamic process of mutual interference.

## 5. Conclusion

This study demonstrates that generative AI, beyond being a mere translation tool, has the potential to act as an active agent in facilitating intercultural dialogue and generating new interpretations. Through translation processes and a transnational reading circle, it was revealed that AI, in collaboration with humans, plays a critical role in supporting a "diffractive process" of generating new literary meanings that reflect diverse cultural contexts.

### 5.1 Key Findings

#### **Advancement in translation and enhanced interpretation**

Unlike traditional translations, which often remain fixed in their transmission of meaning, this study proposed a dynamic translation approach through collaboration between generative AI and humans. By combining questions generated through critical reading by the AI with human-created analytical texts, translations were refined to better capture cultural contexts and the psychological nuances of characters.

#### **Facilitation of intercultural dialogue**

Through dialogue among participants from diverse cultural backgrounds, the study confirmed that intersecting cultural perspectives led to the evolution of interpretations. Discussions surrounding Jimmy's "peculiarity" and specific episodes enabled participants to share new perspectives, deepening their understanding of the novel's themes.

#### **Alignment with posthumanism**

By applying Barad's (2007) concept of agential realism and Braidotti's (2013) posthumanism, this study illustrated how AI dynamically evolves as a collaborator in the process of interpretation. This collaborative process redefines translation, transforming it from a technical procedure into a space for cultural dialogue.

### **Emerging collaborative relationships between AI and humans**

While incorporating analytical texts into the AI's knowledge base improved translation accuracy, the limitations of Retrieval-Augmented Generation (RAG) necessitated human intervention for certain texts. This highlights the evolving relationship between AI and humans, shifting from humans merely supplementing AI to a more reciprocal partnership where both complement each other.

## **5.2 Significance and Applications**

This study underscores the potential of generative AI as a novel tool for intercultural dialogue, with implications in the following areas:

- **Education:** Designing dialogic reading processes for novels and literary works using generative AI to foster intercultural communication skills.
- **Translation industry:** Reconstructing the relationship between AI and human translators to deliver high-quality translations that reflect cultural nuances and contextual meanings.
- **International exchange and multilingual dialogue:** Using AI to create spaces where individuals from diverse cultural backgrounds can engage deeply with shared literary works, fostering mutual understanding.

## **5.3 Limitations and Future Challenges**

### **Applicability to other languages and cultural contexts**

While this study focused on translations into English and Chinese, further validation is needed to assess the reproducibility of these findings in other languages and cultural contexts. For example, a Korean-Japanese reading circle conducted in October 2024 revealed novel discussions rooted in differing cultural contexts, but further exploration of its scalability is necessary.

### **Technical limitations**

The RAG function of ChatGPT-4 restricted the translation of certain texts. Overcoming such limitations will require advancements in generative AI's ability to understand complex contexts. Additionally, improving translation

accuracy for culturally sensitive content and intricate nuances remains a critical challenge.

### **Selection of dialogue language and utilization of AI**

This study employed Japanese as the primary language for the reading circle. However, expanding transnational reading circles raises questions about selecting a common dialogue language. Leveraging generative AI as a supplementary tool offers potential for overcoming linguistic and cultural barriers, necessitating the development of new methodologies.

### **Objective evaluation of translation improvements**

While this study focused on interpretative updates through intra-action between AI and humans, it did not objectively evaluate how translation accuracy improved. Future research could consider using metrics such as Multidimensional Quality Metrics (MQM) to evaluate the impact of this collaborative approach.

## **5.4 Future Directions**

Building on the findings of this study, future research will explore:

- Improvements and dissemination of translation processes based on analytical texts
- Applications in multilingual and multicultural environments
- Development of methodologies to utilize generative AI as a dialogue agent
- Real-time use of transnational reading circle data to foster new spaces for intercultural dialogue

This study lays the groundwork for understanding how generative AI evolves through collaboration with humans, opening new avenues for translation and intercultural communication.

## **References**

- Aoumi, Amy. (2022). *Jimī* [Jimmy]. Meta Brain.
- Barad, Karen. (2007). *Meeting the Universe Halfway: Quantum Physics and the Entanglement of*

- Matter and Meaning*. Duke University Press.
- Barthes, Roland. (1967). The Death of the Author. *Aspen*, 5-6. [www.ubu.com/aspen/aspen5and6/threeEssays.html#barthes](http://www.ubu.com/aspen/aspen5and6/threeEssays.html#barthes)
- Braidotti, Rosi. (2013). *The Posthuman*. Polity Press.
- Hayles, N. Katherine. (1999). *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*. University of Chicago Press.
- Latour, Bruno. (2005). *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford University Press.
- Lee, Tong King. (2023). Artificial intelligence and posthumanist translation: ChatGPT versus the translator [Advance online publication]. *Applied Linguistics Review*. <https://doi.org/10.1515/applirev-2023-0051>
- Vaswani, Ashish, Noam Shazeer, Niki Parmar, Jakob Uszkoreit, Llion Jones, Aidan N. Gomez, Łukasz Kaiser and Illia Polosukhin. (2017). Attention is all you need. *Advances in Neural Information Processing Systems (NeurIPS)*, 30, 5998-6008.

## Professional Profile

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