



# AI Translation and Intercultural Communication: New Questions for a New Field of Research

Dominic Busch

## Abstract

Smartphones today can translate written and spoken language into almost any other human language on the spot and with no cost. The widespread adoption and use of Large Language Models (LLMs) as the foundation for artificial intelligence applications has significantly improved the outputs of these tools. For their users, they may help create new and unique contexts for interaction that would not otherwise exist. This development has generated a novel genre of research settings essential for exploring intercultural communication, as they foster new forms of interculturality, enabling new experiences, and raise new ethical questions about intercultural interaction. This overview indicates that this phenomenon remains largely unexplored. Existing studies focus on the technical aspects of machine translation and the future role of human translators. The active role of translation tools in creating novel intercultural contact situations requires further investigation and exploration.

## 1 Introduction

Computer tools that provide translations or assist humans in translating verbal communication between different human languages have been around for a long time. In recent years, however, these tools have experienced a tremendous increase in performance and adoption. This is due to the fact that current models benefit from the language data of the large lan-

---

D. Busch (✉)

Universität der Bundeswehr München, Neubiberg, Deutschland

E-Mail: [dominic.busch@unibw.de](mailto:dominic.busch@unibw.de)

---

© Der/die Autor(en), exklusiv lizenziert an Springer Fachmedien Wiesbaden GmbH, ein Teil von Springer Nature 2025

B. Schäffer, F. R. Lieder (Hrsg.), *Maschinen wie wir?*,

[https://doi.org/10.1007/978-3-658-48522-1\\_12](https://doi.org/10.1007/978-3-658-48522-1_12)

guage models of AI and from the widespread use of smartphones as powerful Internet computers that are available to almost everyone at any time and in any situation, as well as from the corresponding Internet connectivity. We can expect this development to lead to a huge increase in communicative exchanges that would otherwise never take place between people who speak different languages or who have difficulty speaking in a foreign language. Research on intercultural communication often assumes that situations in which at least one of the participants speaks a foreign language will also be situations in which interculturality plays an even more prominent role than it does in monolingual contexts.

The increasing emergence of AI-translated interactions between humans should therefore mean that intercultural communication research has a wide field of many different new contexts to explore. Whatever different definitions or paradigms intercultural communication research may follow: There are new situations and contexts that need to be observed, analyzed, and evaluated in order to find out and describe how interculturality and intercultural communication develop and evolve in these situations. A first look into the literature however shows that intercultural communication research so far has hardly touched upon these new contexts. This chapter will therefore review and systematize existing work that at least covers some facets of the phenomenon. Doing so, it will search for reasons of why AI-translated intercultural communication is still a research gap. And it will finally explore a selection of paradigms from intercultural communication research for potential new research questions and findings to be explored.

As this chapter will show, one of the major effects of AI-translated communication is that it gives many more people the opportunity to communicate in English, one of the most recognized lingua francas in the world, and thus potentially to participate in global discourse and exchange—a phenomenon with many advantages and disadvantages, which will also be discussed in this chapter. In the case of AI translation, this phenomenon is also expected to have enormous implications for science communication, of which this chapter is a part. The author of this chapter therefore makes use of this text to explore the implications of this writing work and its effects in practice by using different tools like DeepL translate, DeepL write, and ChatGPT for translation assistance from German, the author's native language, as well as for reformulation help of passages written directly in English.

Specifically, this chapter will begin by examining how intercultural communication research has often ignored the language barrier that often precedes interculturality. It will then look at what computer science on translation has to say about the new phenomenon of AI translation, showing that this field focuses on technical issues and tends to ignore aspects of intercultural communication. It then moves on to a wide field of perspectives on translation from the humanities and social sciences, where translation is seen as a broader phenomenon of human approaches to their world. In commenting on the new phenomenon of AI-assisted translation, this field seems to be the main proponent of a picture in which AI translation will never be perfect and will never be able to completely replace humans as translators. As such, this field promotes a strong counterdiscourse to the AI-centric research that generally seems to believe that AI will soon be able to do everything. In a subsequent section, the chapter will explore different paradigms from intercultural research

for potential new research questions on AI-translated intercultural communication. The chapter concludes with an outlook on more recent approaches to intercultural communication research from a posthumanist perspective, which may hold the greatest potential for incorporating AI-translated communication.

---

## 2 Intercultural Research and the Overlooked Language Barrier

In various disciplines, the diversity of global languages is widely recognized as a significant impediment to global development. For instance, Márquez and Porras highlight from the perspective of science communication research that “[f]acing the biggest existential threats to humanity requires understanding and support of science at a global scale, as exemplified by a multitude of climate-related natural disasters” (Márquez & Porras, 2020, p. 1). The need for improved international collaboration, hindered by linguistic diversity, is so significant that, according to Li et al. (2023, p. 147) writing in the field of engineering technology, it cannot be overcome solely with the help of human translators. Consequently, the assistance of AI technology is not only necessary but crucial and timely to compensate for these challenges.

In spite of these claims, intercultural research has traditionally skipped over this challenge, implicitly assuming that it has already been solved. The language problem was essentially overlooked, with the primary challenges of the field perceived as lying beyond it. Even Edward T. Hall, often referred to as a “founder of the field” (Kulich et al., 2020, p. 82), sidestepped the language barrier. He regarded language primarily as a foundation for deeper cultural meanings (Hall, 1959, p. 186) and believed that the essence of culture operates “beyond language” (Levine & Adelman, 1982), often unnoticed by most people. According to Hall, the essential cultural elements manifest in nonverbal signals (Hall, 1959, p. ix) and in the ways people interact with concepts such as time and space (Hall, 1959, p. 1; Martin et al., 2020, p. 20).

Only later did the field recognize the gap created by ignoring the linguistic aspect. And even then, language was given a subsidiary role. Kulich et al. (2020, p. 80) summarize, “Language has long been understood both as a vehicle and highway for culture.” Therefore, in retrospect, Fantini (2020, p. 274) finds it deeply “ironic to focus attention on intercultural interactions and ignore the language that directly mediates every transaction.” Meanwhile, approaches rooted in linguistics have emerged, focusing more on the connection between language and culture and the language-based nature of intercultural interaction. Applied linguistics is recognized as the subfield within which most of these models have been developed (Jackson, 2020a; Zhu, 2023).

---

## 3 Computer Science: A Focus on Technology

Technical assistance in language translation is not fundamentally new. There have been many preliminary and developmental stages that help explain the features of today’s products. Lee (2023) distinguishes between different eras, while Liu and Li (2023) provide a his-

tory of technology-assisted translation: “Using machines to translate could date back to 1933 when the Soviet scientist Peter Troyanskii presented ‘the machine for the selection and printing of words when translating from one language to another’” (Liu & Li, 2023, p. 283).

### 3.1 Machine Translation (MT) and Computer-Assisted Translation (CAT)

The earliest automated translations are commonly referred to as machine translation (MT), and less often as computer-assisted translation (CAT). These initial forms were frequently described as rule-based translation, as they were implemented based on numerous rules programmed into the software (Liu & Li, 2023, p. 283). Even highly advanced systems, such as Google Translate, in their beginnings could be considered both machine translation and rule-based within this context. Despite their rule-based nature allowing for good results, this design inherently meant that their translations were always imperfect and, at best, approximate (Lee, 2023, p. 2).

According to Evans and Aceves (2016), the establishment of machine translation marked a significant advancement in another, potentially more critical area: it enabled the conversion of human language into a format that computers can process. In the field of human-computer interaction, significant strides beyond rule-based translation have been made towards solutions based on artificial intelligence. Crisostomo et al. (2022, p. 187) describe these initial steps as natural language processing (NLP), which can be considered an aspect of AI due to its self-learning capabilities.

### 3.2 Neural Machine Translation (NMT)

As datasets expanded, allowing language programs to learn autonomously, the metaphor of neural networks created and explored by the computer itself seemed more and more adequate. Compared to earlier static, rule-based translation methods, neural machine translation delivered more accurate results (Crisostomo et al., 2022, p. 188).

As long as translation involves only human-machine interaction, a crucial difference between human communication and machine understanding remains hidden. Humans, in semiotic terms, always relate spoken language to an extralinguistic reality, which gives meaning to linguistic signs through their reference. For machines, this extralinguistic reality does not exist. This fundamental difference is often used in various arguments to explain why purely machine-based translation can never fully succeed. Even when terms like deep learning and neural networks are used, suggesting that a machine deeply and comprehensively understands human cognition, its reconstructed logic remains purely language-based (Crisostomo et al., 2022, p. 189). Therefore, instead of the metaphor of neural networks, this form of translation can also be called statistical machine translation (Liu & Li, 2023, p. 284).

### 3.3 Large Language Models (LLM)

Large language models are often hailed as the next major leap, not only in achieving perfect translation but also in advancing artificial intelligence overall. Although not initially designed for translation, these models now perform this task at least as well as previous neural network-based translation systems (Lee, 2023, p. 1). This field is evolving rapidly, and the status quo reported here is likely to be outdated by the time this chapter will get published. Lee (2023, pp. 1–2) identifies the release of OpenAI's ChatGPT-4 as a significant milestone in translation technology and notes that ChatGPT's translation capabilities have advanced to the point where experts might now concede that their jobs could gradually be replaced.

Fundamentally, large language models use the same methods as earlier neural network-based machines. However, large language models are trained on significantly larger datasets, and their translation performance can be further enhanced through continuing user interaction (Lee, 2023, p. 4). In contrast to earlier machine translation techniques, ChatGPT excels in its ability to generate multiple variations of a translation (Lee, 2023, p. 6). Moreover, ChatGPT even masters the translation of fictional texts, a task long considered the holy grail of human translators and deemed beyond the reach of machines (Lee, 2023, p. 4).

---

## 4 Humanist Translation Studies: A Focus on Translators

Translation studies have indeed even evolved with the advent and continuous development of new technologies, but the mainstream focus remains on the role, tasks, and functions of the translator. Its users who, in light of increasing technological advancements, could become increasingly significant in the translation process, are largely overlooked. Chan (2009) explores how, indeed, translation studies have significantly shifted their focus in response to AI translation and earlier forms of machine-assisted translation. This shift includes a new engagement with corpus linguistics, previously deemed irrelevant to translation research. For the first time, translation studies achieved valid systematization, moving away from the previous more intuitive translation methods. In other words, the technicization of translation has rendered the field more empirical. This empirical foundation ultimately places AI and translation studies on a common methodological ground. Fan and Chunlei (2023, p. 59) conclude that these two fields can complement and reinforce each other in the development of AI-supported translation.

Nevertheless, there are many voices in translation studies that form a discourse that argues that computers per se will not be able to replace human translators. This discourse contrasts sharply with a complementary discourse in computer science that sees no limits to technological development and considers everything possible and only a matter of time once a new challenge is identified. Once translation studies have begun to identify as part of a larger field of cultural research and cultural theory, European humanities, with their

traditional focus on the human, turn out to be one of their strongest suppliers of points for the singularity of the human translator. In general, it is a certain kind of humaneness that it is said that AI translation will never be able to achieve. And one particular place where this humaneness is typically located and condensed tends to be the concept of culture. Two approaches can be distinguished in this argumentation, depending on where this culture is presumed to reside: either in the diversity and individuality of different human languages or in the minds and perceptions of individuals themselves.

Lee (2023, p. 14) explains that this kind of cultural knowledge is not only needed for the translation task itself but also for the management of the translation product towards the outside and its contexts. In fact, it is still human translators who are the recipients and users of machine translation products and who are thus actively shaping intercultural relations. It is at this point, however, that the authors of the current literature on the subject often stop short of an elaboration of what exactly this intercultural would be.

Some authors see culture as rooted in human language. This would imply that each language is the repository of a very particular set of specific (cultural) knowledge that cannot be stored or transmitted except through that language. It is therefore to be feared that this cultural knowledge will be lost halfway, and in the long run will disappear altogether, when AI translation tools do their work by translating any language first into English and from there into another target language. Furthermore, AI translation will contribute to the extinction of smaller languages by underlining the dominant role of English in our world (Moorkens, 2022, p. 135).

In this sense, the possibility that AI translation can produce good translations becomes all the more unattainable the more the concept of translation becomes embedded in a social-philosophical framework that considers more aspects beyond the immediate scope of linguistic expression. The consideration of the underlying *ethics* is another point in this direction (O'Regan & Ferri, 2024). This concerns the translated texts themselves as well as the responsibility of the translator as manager for the appropriate distribution and role of a translation in a social context – a task that AI is also said not to be able to perform (Hicks et al., 2024). *Emotions* and their transmission in translated communication is another issue that critics have doubts about AI's ability to master. The tricky part, according to Jiang and Lu (2021, p. 7), is that emotions are communicated through language, but are rarely contained in the linguistic expressions themselves, and can only be interpreted by considering context and paralinguistic aspects. In fact, the whole role of language in the construction of social relationships is based on this – and is apparently beyond the reach of AI translation. Last but not least, *creativity* is often considered a uniquely human trait. It is also communicated through language, and language is constantly evolving and changing through human creativity. Luo (2018, p. 1) adds to this list of criticisms by saying that AI will not be able to catch up with this. And finally, what LLMs are also not able to capture are the *individual personalities* and experiences of all of the actors involved in a translated context. Based on this, each individual will interpret a message, whether translated or not, differently, and AI translation will not be able to catch up with this gap in meaning, Crisostomo et al. (2022, p. 194) resume.

In addition to this mainstream humanities discourse that makes good AI translation impossible, there are also a few optimistic voices that proclaim that everything is technically possible, that the problems to be solved are only a matter of time and technical progress, and that existing problems should therefore be actively addressed (Fan & Chunlei, 2023, p. 65). Indeed, there are now many smaller projects aimed at reducing the disadvantages resulting from the marginalization of small languages through AI (Üstün et al., 2024), in addition to the major global players in large language models. Among these, the *No Language Left Behind* project (NLLB Team, 2024) is one of the largest undertakings that specifically works on the equality of languages. Tenzer (2024) picks up on this and calls for such projects to go beyond language improvement and include contextual variables to address the problem of cultural context.

Lee (2023, p. 13) reports on Pym (2023), who urges translation studies to take the first step in dealing competently with the problems outlined here by accepting current developments and embracing them without reserve. This might mean, firstly, that professional users should become familiar with these new tools and develop expertise in their use (Lee, 2023, p. 13). On the other hand, it also means accepting the fact that in the future humans will no longer play the main role in the translation process, and that their role will in fact be more in the area of post-editing and management (Pym, 2016; Lee, 2023, p. 4).

---

## 5 Applied Linguistics: Different Paradigms on Intercultural Communication

Applied linguistics, amongst other themes, studies the intersections of foreign language translation and intercultural communication (Jackson, 2020b). To date, applied linguistics has been home to a wide range of paradigmatic approaches. In the field of intercultural communication, authors even seem to be a bit proud of the fact that their “young field” (Leeds-Hurwitz, 2014, p. 17) has undergone and survived quite a number of paradigm shifts. There is almost a tradition of listing these paradigms one after another, as, for example, Zhu (2016, p. 6) speaks of the positivist, interpretive, critical, and constructivist paradigms. While some authors see it as a logical consequence that a newer paradigm replaces the older ones (Holliday and MacDonald, 2020), others, promoting a multiparadigm approach (Primecz et al., 2015), see advantages and new insights in all the different approaches and recommend consulting them all in a row to get the best picture of a particular object of research.

Up to now, there have been only a few single publications that have examined the phenomenon of AI translation from the perspective of intercultural communication. It seems useful to be able to situate these individual findings within such a spectrum of potential paradigmatic perspectives in order to better assess their underlying research interests and explanatory scopes. Such overviews can also help to show from which paradigms there is still little or no research on AI and intercultural communication, and what additional questions and insights can be expected from them. A first cursory overview of the state of research and its gaps is briefly discussed below.

## 5.1 A Positivist Paradigm: Linguistic Research on AI Translation

Regarding intercultural communication research, researchers following a positivist paradigm assume they can see, identify, isolate, and name the role of culture in human action. This paradigm sees no need for uncovering something hidden or for interpretation. Here, too, only a few studies on AI translation touch on questions of intercultural communication, but very often they are in fact pursuing other or more specific questions. Very often, positivist approaches to intercultural research here are based on a simple sender-receiver model of communication, assuming that a message needs to be transmitted – and that for AI translation, exact transmission will be the biggest challenge. Consequently, such research again emphasizes the technical aspects of machine translation, as for example in Adanlawo et al. (2021) for intercultural business communication. In these veins, Bakola et al. (2022, p. 8) discuss the potential of AI translation to prevent conflict by rephrasing negative statements into positive ones. Dwivedi et al. (2023, p. 40) add that the demand for and use of translation services, as well as the social acceptance of AI, can vary greatly across cultures. On the other hand, AI tools such as ChatGPT can also change cultures (Dwivedi et al., 2023, p. 39). Finally, one advantage of taking this positivist approach lies in the fact that it makes it possible to quantify the success of AI translating. There are so many different nations, languages, and people interacting in a globalized world that machine translation can help to break down countless language barriers on a daily basis (Chan, 2009, p. 200).

## 5.2 An Interpretive Paradigm: No Research on AI Translation

Intercultural research from the perspective of an interpretive paradigm builds on the assumption that culture emerges as social meaning that is always context-specific. Interactants will not be able to access this meaning but by their own interpretation of what they perceive, and thereby relying on the given context. Concerning the role of AI translation for intercultural communication, researchers from this perspective could observe how these tools and how interpersonal relationships develop in this context, for example. They might also observe the ways in which culture might manifest or might be constructed. Within the range of qualitative research methods, there could also be interviews with actors about their experiences with translation tools. There seems to be little research on how AI translation copes with, interferes with, transforms, shapes, or ignores this kind of human meaning-making at the time this chapter is prepared. Also, any research on how humans modify their meaning making when AI translation is at their service is lacking. Following Geertz, this might require ethnographic fieldwork, observing how people communicate and interact with AI translation tools, and how they evaluate and create their lifeworlds accordingly.



### 5.3 A Critical Paradigm: Social Justice in a Global World?

The critical paradigm, as it is understood in overviews of intercultural research, has diverse roots in Western theorizing. Its origins lie in various power-theoretical and power-critical social theories, from Marx to Adorno and the Frankfurt School, Foucault, Gramsci, and Habermas. Two movements have adopted these foundational understandings for intercultural research: British Cultural Studies, who reconceptualized culture not as homogeneous containers but as phenomena characterized by internal fractures and conflicts over meaning-making. Postcolonial theory applied power-critical perspectives to the contemporary global order, revealing a world dominated by a few politically, economically, and ideologically powerful centers, with the rest relegated to a structurally entrenched periphery, a power structure that is difficult to overcome and tends to reinforce itself.

Exploring the role of AI translation raises numerous questions beyond the micro-level of interaction, encompassing societal and global dimensions and their interrelationships. Researchers can investigate how AI translation exacerbates or mitigates power imbalances at various levels. In this context, many authors hope that artificial intelligence can enhance equity in education (Kasneci et al., 2024). Two themes dominate the existing literature on AI translation in these contexts: One is the use of AI translation by non-English speakers for international English-language academic publishing. The other, even less prominent, is the use of machine translation for global migration.

#### 5.3.1 Increasing Access Through AI Translation: The Case of Academic Publishing

Non-English-speaking researchers face significantly higher demands when publishing in English at every stage of the process. From reading texts to writing and editing to preparing and presenting at conferences, their workload is multiplied compared to that of English native speakers (Ghio, 2024). Software-assisted translation is of particular interest to non-native English-speaking academics who need to publish their work in English-language journals in order to advance their careers. They often lack the financial resources to hire human translators to help translate. AI translation has the potential to make scholarly publishing more equally accessible to people all over the world.

Di Bitetti and Ferreras (2017) present a bibliometric study to assess the extent to which researchers who publish in languages other than English are indeed at a disadvantage in their careers. Non-English authors still suffer many disadvantages that go beyond their impact in publishing, e.g., in getting funding. In sum, Di Bitetti and Ferreras (2017, p. 215) cannot help but advise academics to publish in English, and research institutions should support their staff in doing so (Di Bitetti & Ferreras, 2017, p. 126). Zou et al. (2023) explicitly recommend the use of AI translation tools for this purpose.

In contrast to this, there are many critics who fear that this kind of recommended use of AI translation will not lead to greater equality, but will actually make things worse, because of the following aspects, amongst others:

- the loss of a diversity of knowledge (Márquez & Porras, 2020, p. 3),
- the loss of linguistic diversity (Kenny, 2022, p. 135),
- the competent use of AI requires training and skills not everyone has access to (O'Brien & Ehrensberger-Dow, 2020),
- many users need easy-to-use user interfaces and are therefore confined to a few major and mainstream tools (Sahari et al., 2023),
- many tools, especially those with high quality outputs, are expected to raise fees in the near future and will no longer be free of charge (Dwivedi et al., 2023, p. 10),
- free tools like ChatGPT are banned in some countries, e.g., China and Russia (Ghio, 2024),
- since the translation tools are not perfect, users will need to live with that and take responsibility for this (Dwivedi et al., 2023, p. 30),
- lack of transparency of AI tools: are they re-using or even redistributing academic findings that a researcher feeds them for translation purposes, and to whom, for what purposes? (Ghio, 2024).
- translated texts sound like “translationese” (Jimenez-Crespo, 2023), i.e. they all sound the same, and are therefore also stereotyped as being of lower academic quality. However, this could improve with the improvement of LLMs.

Given the fact that a combination of these dimensions often reinforces social inequality even more, this new and additional digital divide in AI usage is also likely to manifest along ethnic and cultural lines (Abreu, 2016).

Ferguson et al. (2011, p. 42), on the other hand, respond that this native-non-native divide in academic publishing is exaggerated and instrumentalized in this discussion. Instead, they argue that mastering academic writing style and techniques is a much greater challenge than the language barrier. Thus, native and non-native English speakers face more or less the same hurdles in their academic careers.

### **5.3.2 Increasing Access Through AI Translation: The Case of International Migration**

Translation tools also play a role in migration research and some of its aspects have been studied there, yet. Media communication has always facilitated the organization of migration, and this function is maximized with advancing technology. This phenomenon is so integral to migration that Leurs and Smets (2018) coined the term “digital migration” to describe it. Although Leurs and Smets do not explicitly address the role of translation in this process, they argue that the Syrian refugee movement into Europe around 2015 was primarily organized through social media among the migrants. In his online lecture, Androutsopoulos (2024) highlights research showing how smartphones helped refu-

gees, particularly in the 2010s. Translation here is just one of many functions. Androutsopoulos' (2024) research suggests that the use of smartphones for translation serves less for intercultural understanding and more for a quick getting by and along in gatekeeping situations.

## 5.4 Interculturalism: AI Translation and Intercultural Dialogue

The assertion that AI translation promotes intercultural dialogue is a recurring theme in related texts. This statement can be framed in various ways: as a claim, a question, a supported or unsupported hypothesis, or a negation. Scholars like Martha Nussbaum (1998) called for a more proactive cultural policy, where groups engage in ongoing dialogue and interaction, rather than living close to each other but still in isolation. In intercultural communication research, Ted Cantle (2012) proposed *interculturalism* as a deliberate and active approach to engaging with others.

Aside from the critical perspectives reported in the previous sections, technological disciplines outside translation studies indeed have a more optimistic view on AI translation supporting forms of intercultural dialogue as promoted by interculturalism (e.g., Karakas, 2023). Crisostomo et al. (2022, p. 188) foresee that AI translation, particularly when it functions automatically and unnoticed, like on social media platforms, can foster interactions between people who might not have otherwise engaged or shown interest in one another. Thus, AI translation can generate interest and incentivize dialogue.

However, this positive effect of AI translation on intercultural dialogue is often claimed, but rarely proven. Khasawneh (2023) interviewed 110 translators and they confirmed that they believe that AI translation can support intercultural dialogue. Karakas (2023) and Klimova et al. (2023) explore how AI translation, as used in foreign language teaching, can introduce students to foreign cultures. However, intercultural understanding here is often limited to learning a few cultural facts. For example, Shadiev and Huang (Shadiev & Huang, 2016; Shadiev et al., 2019) have Taiwanese and Uzbek students exchange cooking recipes in an online classroom meeting. In a later study, they have their students introduce themselves to each other. Hohenstein et al. (2023) show that so-called smart replies, i.e. a phone app that suggests appropriate and pre-prepared answers in a messenger chat, tend to formulate more positive answers than users would write. Accordingly, these smart replies can support dialogue (Fleischman, 2023, p. 3), even in translated contexts.

These observations raise hopes that AI translation tools might foster intercultural dialogue. By providing the basic means for dialogue and encouraging active and positive relationship-building through their phrasing, these tools seem promising. Critics, however, argue that these benefits are minimal compared to the harmful effects. They point out that the relationship-building strategies mentioned tend to align with communication preferences valued predominantly in Western cultures. Karakas (2023, p. 218) warns that AI communication might amplify negative cultural stereotypes due to inherent biases, posing a more significant and impactful risk.

## 6 Further Perspectives and Paradigms for Incorporating AI Translation into Intercultural Communication Research

In this section, some of the more recent developments in intercultural research will be mentioned and touched upon as examples that may hold particular potential for research asking about the effects of AI translation. The portfolio of approaches presented here is not meant to be representative, nor are these approaches automatically the ones with the greatest impact and acceptance. However, when looking for recent developments in intercultural research beyond the traditional mainstream approaches, these newer concepts seem to be particularly suited and developing in a trend to include material contexts and technological devices in the spheres where social interactions take place.

### 6.1 Interculturality as Mindfulness

Ting-Toomey (2015) elaborates on the concept of mindfulness for intercultural research. Originating from cognitive psychology, mindfulness is a value system also present in Eastern cultures and religions. It involves an attitude of slowing down interaction and perception processes to allow for pausing and reflecting on a given situation. Individuals are encouraged to identify their perceptions and separate them from automatic conclusions, interpretations, and judgments. This mindfulness approach aims to foster greater openness in interactions, enabling people to approach each other with empathy (Ting-Toomey, 2015). Critics, however, argue that mindfulness is too apolitical, ignoring structural power imbalances and discrimination, thereby perpetuating them (Grimes et al., 2022). Even today, interculturality and intercultural interactions that people perceive as fruitful are often attributed to mindfulness in theorizing and research. Recently, Huang (2023) explicitly referred to this as intercultural mindfulness. Laywine (2024, p. 12), however, cautions that while mindfulness can emerge in a situation and be perceived positively, it can also overlook and ignore global contexts and injustices.

AI translation can contribute to creating contexts characterized by this perceived attitude of mindfulness and maybe even keep people aware of these superordinate social structures. It may even promote mindfulness or similar concepts. Research on the impacts of AI translation on the perception and development of intercultural situations, particularly regarding ethical evaluation and responsible usage, remains an open field. And this perspective goes far beyond the concrete mindfulness approach: How do people, with their very individual backgrounds and experiences, perceive AI translation in their lives? Ethnographic and even auto-ethnographic approaches can provide insight into the social complexities in which these new tools play.

## 6.2 Interculturality as Seen from Network Theory

Zhu references an earlier work by Martin and Nakayama, who had applied communication theory insights to the field of intercultural communication, stating that “[t]echnology is recognised as one of the six ‘imperatives’ that have historically shaped the field of intercultural research, along with demographic diversity, economic competitiveness, peace, self-awareness, and ethics” (Zhu, 2024; on Martin & Nakayama, 2010, pp. 21–28). However, from this perspective, there are currently almost no studies within the field of intercultural communication research. Existing studies on previous shifts in the media landscape can illustrate how such research could be structured and what questions may arise. For example, Fortunati (2002) discusses the advent of mobile telephony around the turn of the millennium, noting that the most radical change lies in the altered relationship to space and time. Two decades later, the emergence of AI translation tools shows even similar characteristics. In fact, they contribute to the creation of a communication sphere in which individuals are their own primary actors, rather than being overly dominated by superordinate media communication structures, similar to the emergence of mobile phones. AI translation helps individuals to perfectly organize their translation services according to their own specific and spontaneous needs. In addition, a phone call as seen by Fortunati is always an initiation for interpersonal contact – as AI translation can be used in contexts otherwise blocked by language barriers. Actor-Network Theory as proposed by Latour (1987) may help mapping and exploring the new forms and contexts of intercultural communication enabled by AI translation (kudos to Christoph Vatter for this idea), similar to how Fortunati did for the newly emerged mobile phone.

## 6.3 Interculturality as Seen from Posthumanism and New Materialism

From a non-humanities perspective, Ghio (2024) highlights that the constant comparison of AI translation and AI communication with human communication is arbitrary and unfounded: “It is thus important to move away from a merely deterministic binary view between technophiles and those who reject new technologies.” In recent years, social theory has seen the emergence of two interrelated paradigms: poststructuralism and new materialism. These paradigms support the proposed perspectives that decenter humans and challenge the notion of humans as the measure of all things. Starting with Foucault, who questioned the unity of the subject and the anthropocentric perspective of modern sciences, followed by Gilles Deleuze and Derrida, the centrality and unity of the human have been progressively deconstructed. This deconstruction limits and relativizes human agency and their creative power over their environment, which has been previously overestimated (Keeling & Lehman, 2018). Rosi Braidotti (2011), in her articulation of what she terms new materialism, extends and specifies these insights. She posits that humans are embedded equally within an environment that is not only organic but also material. According to

Barad's (2007) concept of agential realism, this material environment interacts with humans at least as actively as humans interact with it. Nath and Manna (2023, pp. 187–189) discuss how posthumanist insights and ways of thinking make it easier for us to conceptualize worlds in conjunction with artificial intelligence.

---

## 7 Conclusion

This review is a compilation of the research to date on the social role of AI translation in intercultural communication contexts. It has been hypothesized that AI translation today can lay the groundwork for new and more situations of intercultural contact. This is because it helps people in all kinds of situations, whether formal or informal, to overcome language barriers that would otherwise make verbal exchange unthinkable. It can also be hypothesized that intercultural contact may change not only in its quantity, but also in its distribution, in its occurrences, in its internal developments, and in its broader social effects. The present review shows that research on intercultural communication today encompasses a wide range of paradigmatic and methodological approaches that can help address these questions, but that so far only a few studies have focused on single and selected aspects of AI translation and intercultural communication. Instead, much of the literature focuses on technical aspects of the translation process. Many humanist approaches are stuck in arguing for the human translator as an entity that cannot be replaced by a machine. Culture, in its many theoretical definitions, often seems to be used as a central argument for this human irreplaceability. This chapter sketches some of the major paradigms of existing research on intercultural communication. It raises questions for future research that seem fruitful for evaluation. It concludes with perspectives on posthumanist ontologies that help to find new roles for humans in a more planetary context. These perspectives may pave the way for future research on AI translation and intercultural communication that is open to new developments and emergences.

---

## References

- Abreu, R. (2016). Racial and ethnic inequality in the digital divide. In J. Stone, D. M. Rutledge, P. S. Rizova, A. D. Smith, & X. Hou (Hrsg.), *The Wiley-Blackwell encyclopedia of race, ethnicity, and nationalism*. Wiley-Blackwell. <https://doi.org/10.1002/9781118663202.wberen627>
- Adanlawo, E. F., Reddy, M. M., & Rugbeer, H. (2021). Intercultural business communication: The implications of language barriers. *Psychology and Education*, 58, 6281–6290.
- Androutsopoulos, J. (2024, March 1). *Getting by with AI: Exploring the use of language technologies by forced migrants*. Presented at the ReDICO 2024 Encounters. Encounter 3: Conceptual and methodological perspectives on interculturality and AI. <https://redico.eu/de/redico-2024-encounters-interdisziplinaere-perspektiven-auf-digitale-interkulturalitaet/>. Accessed 28 Feb 2024.
- Bakola, L. N., Drigas, A., & Skianis, C. (2022). Inteligência emocional vs. inteligência artificial: A interação da inteligência humana na robótica evolutiva. *Research, Society and Development*, 11(16), e72111636919. <https://doi.org/10.33448/rsd-v11i16.36919>

- Barad, K. (2007). Agential realism: How material-discursive practices matter. In K. Barad (Hrsg.), *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning* (S. 132–185). Duke University Press.
- Braidotti, R. (2011). *Nomadic theory: The portable Rosi Braidotti*. Columbia University Press.
- Cantle, T. (2012). *Interculturalism: The new era of cohesion and diversity*. Palgrave Macmillan. <https://doi.org/10.1057/9781137027474>
- Chan, S. (2009). Translating for the future: Some reflections on making a dictionary of translation technology. In X. Luo & Y. He (Hrsg.), *Translating China* (S. 189–206). Multilingual Matters. <https://doi.org/10.21832/9781847691880-014>
- Crisostomo, M. M., Bernarte, R. P., & Ambag, S. C. (2022). Cross-cultural translation studies in the context of artificial intelligence: Challenges and response. *European Online Journal of Natural and Social Science*, 11(4), 187–198.
- Di Bitetti, M. S., & Ferreras, J. A. (2017). Publish (in English) or perish: The effect on citation rate of using languages other than English in scientific publications. *Ambio*, 46(1), 121–127. <https://doi.org/10.1007/s13280-016-0820-7>
- Dwivedi, Y. K., Kshetri, N., Hughes, L., Slade, E. L., Jeyaraj, A., Kar, A. K., et al. (2023). Opinion Paper: “So what if ChatGPT wrote it?” Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice and policy. *International Journal of Information Management*, 71, 102642. <https://doi.org/10.1016/j.ijinfomgt.2023.102642>
- Evans, J. A., & Aceves, P. (2016). Machine translation: Mining text for social theory. *Annual Review of Sociology*, 42(1), 21–50. <https://doi.org/10.1146/annurev-soc-081715-074206>
- Fan, K., & Chunlei, W. (2023). Translation studies in the era of AI: Characteristics, fields and significance. *International Journal of Translation and Interpretation Studies*, 3(4), 58–67. <https://doi.org/10.32996/ijtis.2023.3.4.7x>
- Fantini, A. E. (2020). Language. In J. Jackson (Hrsg.), *The Routledge handbook of language and intercultural communication* (2. Aufl., S. 267–282). Routledge. <https://doi.org/10.4324/9781003036210-21>
- Ferguson, G., Pérez-Llantada, C., & Plo, R. (2011). English as an international language of scientific publication: A study of attitudes. *World Englishes*, 30(1), 41–59. <https://doi.org/10.1111/j.1467-971X.2010.01656.x>
- Fleischman, T. (2023, April 3). Study uncovers social cost of using AI in conversations. <https://phys.org/news/2023-04-uncovers-social-ai-conversations.html>. Accessed 1 Mar 2024.
- Fortunati, L. (2002). The mobile phone: Towards new categories and social relations. *Information, Communication & Society*, 5(4), 513–528. <https://doi.org/10.1080/13691180208538803>
- Ghio, A. (2024). Democratizing academic research with Artificial Intelligence: The misleading case of language. *Critical Perspectives on Accounting*, 98, 102687. <https://doi.org/10.1016/j.cpa.2023.102687>
- Grimes, D. S., Eguchi, S., & Calafell, B. M. (2022). Can the communication discipline critically engage with mindfulness? *Western Journal of Communication*, 86(2), 215–223. <https://doi.org/10.1080/10570314.2021.1949029>
- Hall, E. T. (1959). *The silent language*. Anchor Books.
- Hicks, M. T., Humphries, J., & Slater, J. (2024). ChatGPT is bullshit. *Ethics and information technology*, 26(2), 38. <https://doi.org/10.1007/s10676-024-09775-5>
- Hohenstein, J., Kizilcec, R. F., DiFranzo, D., Aghajari, Z., Mieczkowski, H., Levy, K., et al. (2023). Artificial intelligence in communication impacts language and social relationships. *Scientific Reports*, 13(1), 5487. <https://doi.org/10.1038/s41598-023-30938-9>
- Holliday, A., & MacDonald, M. N. (2020). Researching the intercultural: Intersubjectivity and the problem with postpositivism. *Applied Linguistics*, 41(5), 621–639. <https://doi.org/10.1093/applin/amz006>



- Huang, Z. M. (2023). Intercultural mindfulness: Artistic meaning-making about students' intercultural experience at a UK university. *Language and Intercultural Communication*, 23(1), 36–52. <https://doi.org/10.1080/14708477.2022.2162064>
- Jackson, J. (Hrsg.). (2020a). *The Routledge handbook of language and intercultural communication*. Routledge. <https://doi.org/10.4324/9781003036210>
- Jackson, J. (2020b). Introduction and overview. In J. Jackson (Hrsg.), *The Routledge handbook of language and intercultural communication* (2. Aufl., S. 1–16). Routledge. <https://doi.org/10.4324/9781003036210-1>
- Jiang, K., & Lu, X. (2021). The influence of speech translation technology on interpreter's career prospects in the era of artificial intelligence. *Journal of Physics: Conference Series*, 1802(4), 042074. <https://doi.org/10.1088/1742-6596/1802/4/042074>
- Jimenez-Crespo, M. A. (2023). “Translationese” (and “post-editese”?) no more: On importing fuzzy conceptual tools from Translation Studies in MT research. In M. Nurminen, J. Brenner, M. Koponen, S. Latomaa, M. Mikhailov, F. Schierl, et al. (Hrsg.), *Proceedings of the 24th Annual Conference of the European Association for Machine Translation* (S. 261–268). Presented at the EAMT 2023, European Association for Machine Translation. <https://aclanthology.org/2023.eamt-1.25>. Accessed 8 Feb 2024
- Karakas, A. (2023). Breaking down barriers with artificial intelligence (AI): Cross-cultural communication in foreign language education. In G. Kartal (Hrsg.), *Advances in educational technologies and instructional design* (S. 215–233). IGI Global. <https://doi.org/10.4018/978-1-6684-9893-4.ch012>
- Kasneji, E., Seßler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., et al. (2024). ChatGPT for good? On opportunities and challenges of large language models for education. *EdArXiv Preprints*. <https://doi.org/10.35542/osf.io/5er8f>
- Keeling, D. M., & Lehman, M. N. (2018). Posthumanism. In *Oxford research encyclopedia of communication*. Oxford University Press. <https://doi.org/10.1093/acrefore/9780190228613.013.627>
- Kenny, D. (Hrsg.). (2022). *Machine translation for everyone: Empowering users in the age of artificial intelligence*. Language Science Press. <https://doi.org/10.5281/zenodo.6653406>
- Khasawneh, M. A. (2023). The potential of Ai in facilitating cross-cultural communication through translation. *Journal of Namibian Studies*, 37, 107–130.
- Klimova, B., Pikhart, M., Benites, A. D., Lehr, C., & Sanchez-Stockhammer, C. (2023). Neural machine translation in foreign language teaching and learning: A systematic review. *Education and Information Technologies*, 28(1), 663–682. <https://doi.org/10.1007/s10639-022-11194-2>
- Kulich, S. J., Weng, L., Tong, R., & DuBois, G. (2020). Interdisciplinary history of intercultural communication studies. In D. Landis & D. P. S. Bhawuk (Hrsg.), *The Cambridge handbook of intercultural training* (S. 60–163). Cambridge University Press. <https://doi.org/10.1017/9781108854184.006>
- Latour, B. (1987). *Science in action: How to follow scientists and engineers through society*. Harvard University Press.
- Laywine, N. (2024). All that glitters: Extraction as communication in international voluntourism practice. *Journal of International and Intercultural Communication*, 17(3), 249–268. <https://doi.org/10.1080/17513057.2024.2359937>
- Lee, T. K. (2023). Artificial intelligence and posthumanist translation: ChatGPT versus the translator. *Applied Linguistics Review*. <https://doi.org/10.1515/applirev-2023-0122>
- Leeds-Hurwitz, W. (2014). Notes in the history of intercultural communication. The Foreign Service Institute and the mandate for intercultural training. In M. K. Asante, Y. Miike, & J. Yin (Hrsg.), *The global intercultural communication reader* (2. Aufl., S. 17–34). Routledge.
- Leurs, K., & Smets, K. (2018). Five questions for digital migration studies: Learning from digital connectivity and forced migration In(to) Europe. *Social Media + Society*, 4(1), 2056305118764425. <https://doi.org/10.1177/2056305118764425>



- Levine, D. R., & Adelman, M. B. (1982). *Beyond language: Intercultural communication for English as a second language*. Prentice Hall Regents.
- Li, R., Nawi, A. M., & Kang, M. S. (2023). Human-machine translation model evaluation based on artificial intelligence translation. *EMITTER International Journal of Engineering Technology*, 11(2), 145–159. <https://doi.org/10.24003/emitter.v11i2.812>
- Liu, X., & Li, C. (2023). Artificial intelligence and translation. In C. Sin-wai (Hrsg.), *Routledge encyclopedia of translation technology* (2. Aufl., S. 280–302). Routledge. <https://doi.org/10.4324/9781003168348-16>
- Luo, X. (2018). Artificial intelligence and the crisis of translation. *Asia Pacific Translation and Intercultural Studies*, 5(1), 1–2. <https://doi.org/10.1080/23306343.2018.1456440>
- Márquez, M. C., & Porras, A. M. (2020). Science communication in multiple languages is critical to its effectiveness. *Frontiers in Communication*, 5, Art. 31. <https://doi.org/10.1080/17513057.2024.2359937>
- Martin, J. N., & Nakayama, T. K. (2010). Intercultural communication in dialectics revisited. In T. K. Nakayama & R. T. Halualani (Hrsg.), *The handbook of critical intercultural communication* (S. 59–83). Wiley-Blackwell.
- Martin, J. N., Nakayama, T. K., & Carbaugh, D. (2020). A global look at the history and development of language and intercultural communication studies. In J. Jackson (Hrsg.), *The Routledge handbook of language and intercultural communication* (2. Aufl., S. 19–38). Routledge. <https://doi.org/10.4324/9781003036210-3>
- Moorkens, J. (2022). Ethics and machine translation. In D. Kenny (Hrsg.), *Machine translation for everyone: Empowering users in the age of artificial intelligence* (S. 121–140). Language Science Press. <https://doi.org/10.5281/zenodo.6653406>
- Nath, R., & Manna, R. (2023). From posthumanism to ethics of artificial intelligence. *AI & Society*, 38(1), 185–196. <https://doi.org/10.1007/s00146-021-01274-1>
- NLLB Team. (2024). Scaling neural machine translation to 200 languages. *Nature*, 630, 841–846. <https://doi.org/10.1038/s41586-024-07335-x>
- Nussbaum, M. C. (1998). *Cultivating humanity. A classical defense of reform in liberal education*. Harvard University Press.
- O'Brien, S., & Ehrensberger-Dow, M. (2020). MT Literacy – A cognitive view. *Translation, Cognition & Behavior*, 3(2), 145–164. <https://doi.org/10.1075/tcb.00038.obr>
- O'Regan, J. P., & Ferri, G. (2024). Artificial intelligence and depth ontology: Implications for intercultural ethics. *Applied Linguistics Review*. <https://doi.org/10.1515/applirev-2024-0189>
- Primecz, H., Romani, L., & Topcu, K. (2015). A multi-paradigm analysis of cross-cultural encounters. In N. Holden, S. Michailova, & S. Tietze (Hrsg.), *The Routledge companion to cross-cultural management* (S. 431–439). Routledge. <https://doi.org/10.4324/9780203798706-50>
- Pym, A. (2016). *Translation solutions for many languages: Histories of a flawed dream*. Bloomsbury Academic.
- Pym, A. (2023). *GPT in the training of translators. A talk by Anthony Pym presented at the 60th anniversary of the Faculty of Translation and Interpretation at the Université de Mons, Belgium, on April 27, 2023*. Mons, Belgium. [https://www.youtube.com/watch?v=b9U\\_FUaneso](https://www.youtube.com/watch?v=b9U_FUaneso). Accessed 28 May 2024.
- Sahari, Y., Al-Kadi, A. M. T., & Ali, J. K. M. (2023). A cross sectional study of ChatGPT in translation: Magnitude of use, attitudes, and uncertainties. *Journal of Psycholinguistic Research*, 52(6), 2937–2954. <https://doi.org/10.1007/s10936-023-10031-y>
- Shadiev, R., & Huang, Y.-M. (2016). Facilitating cross-cultural understanding with learning activities supported by speech-to-text recognition and computer-aided translation. *Computers & Education*, 98, 130–141. <https://doi.org/10.1016/j.compedu.2016.03.013>

- Shadiev, R., Sun, A., & Huang, Y.-M. (2019). A study of the facilitation of cross-cultural understanding and intercultural sensitivity using speech-enabled language translation technology. *British Journal of Educational Technology*, 50(3), 1415–1433. <https://doi.org/10.1111/bjet.12648>
- Tenzer, H., Feuerriegel, S., & Piekkari, R. (2024). AI machine translation tools must be taught cultural differences too. *Nature*, 630(8018), 820–820. <https://doi.org/10.1038/d41586-024-02091-4>
- Ting-Toomey, S. (2015). Mindfulness. In J. M. Bennett (Hrsg.), *The Sage encyclopedia of intercultural competence*. Sage. <https://doi.org/10.4135/9781483346267.n203>
- Üstün, A., Aryabumi, V., Yong, Z.-X., Ko, W.-Y., D'souza, D., Onilude, G., et al. (2024, February 12). Aya model: An instruction finetuned open-access multilingual language model. *arXiv*. <https://doi.org/10.48550/arXiv.2402.07827>
- Zhu, H. (2016). Identifying research paradigms. In H. Zhu (Hrsg.), *Research methods in intercultural communication: A practical guide* (S. 3–22). Wiley Blackwell. <https://doi.org/10.1002/9781119166283.ch1>
- Zhu, H. (2023). Intercultural communication. In L. Wei, H. Zhu, & J. Simpson (Hrsg.), *The Routledge handbook of applied linguistics* (Bd. 2, S. 81–93). Routledge.
- Zhu, H. (2024, March 1). *New dynamics, New agendas? AI and recruitment interviews*. Presented at the ReDICO 2024 Encounters. Encounter 3: Conceptual and methodological perspectives on interculturality and AI. <https://redico.eu/de/redico-2024-encounters-interdisziplinaere-perspektiven-auf-digitale-interkulturalitaet/>. Accessed 28 Feb 2024.
- Zou, C., Gong, W., & Li, P. (2023). Using online machine translation in international scholarly writing and publishing: A longitudinal case of a Chinese engineering scholar. *Learned Publishing*, 36(4), 585–595. <https://doi.org/10.1002/leap.1565>



**Prof. Dr. Dominic Busch** is Professor of Intercultural Communication and Conflict Research at the Institute of Education, Faculty of Human Sciences, University of the Bundeswehr in Munich since 2011. Previously, he was a junior professor of intercultural communication at the European University Viadrina Frankfurt (Oder). His research focuses on discursive and socio-theoretical constructions of notions of culture as well as on the different paradigmatic framings of intercultural communication research.