SocArXiv

Preprint : October 14, 2025 *https://doi.org/10.31235/osf.io/r3zdx*

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

Dominic Busch
Universität der Bundeswehr München, Germany

Abstract

The widespread adoption and use of Large Language Models (LLMs) as the foundation for artificial intelligence applications in applied computer science have significantly advanced tools for the translation of human languages. These tools are now ubiquitously and instantly accessible, e.g., via smartphones, and the quality of their translations has markedly improved. When used in informal and institutional, spontaneous as well as planned contexts between individuals and groups without a common language or lingua franca, these translation tools 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. Consequently, AI-translated intercultural communication has emerged as a new basis for the development of interculturality. The current research overview indicates that this phenomenon remains largely unexplored, with significant research questions and areas still unaddressed. Existing studies focus on the technical aspects of machine translation, the feasibility and limitations of achieving human-like, accurate translation, and the future role of human translators. The active role of translation tools in creating novel intercultural contact situations urgently requires further investigation and exploration.

Keywords: artificial intelligence, AI translation, intercultural communication, interculturality, intercultrual relations, google translate, deepl, chatgpt

This article has been published. The version of record is available as: Busch, Dominic. 2025. 'AI Translation and Intercultural Communication: New Questions for a New Field of Research'. In Maschinen Wie Wir? Wie Künstliche Intelligenz Bildung, Wirtschaft Und Gesellschaft Herausfordert, edited by Burkhard Schäffer and Fabio Roman Lieder, 249–66. Wiesbaden: Springer Fachmedien: https://doi.org/10.1007/978-3-658-48522-1$_1$2.

1. Introduction

"Fortunately, language technologies, especially Artificial Intelligence (AI), have become a potential tool to [...] ease language exchanges, promoting efficient cross-cultural communication through AI-powered tools and web conferencing platforms," educational researcher Karakas Karakas (2023, p. 216) asserts. ChatGPT itself concurs, noting that it can help to "'improve language translation, which can facilitate communication and understanding between different cultures'" (Dwivedi et al. 2023, p. 42). In analyzing this "[u]nderstanding between members of different cultures" (Kim and Ebesu Hubbard 2007, p. 223), the academic discipline broadly known as intercultural communication research has traditionally held the deepest expertise and most sophisticated tools in this regard. However, this field has been notably reticent in addressing these new developments. This paper seeks to assess the current state of affairs. It will explore existing knowledge about AI translation and intercultural understanding, identify existing gaps, and examine the reasons behind them.

1.1. 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 and 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—an arguably imaginary worldview and a foundation based on rather artificial conditions. 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 and 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). Undoubtedly, this also relates to Hall's collaboration with Erich Fromm and his inspiration from Sigmund Freud's psychoanalysis. Since then, Hall attributed significant importance to the unconscious, there seeking for cultural insights (Rogers et al. 2002, pp. 4-6).

And also Geert Hofstede, a management researcher long stereotypically associated as the center of the field, considered language to be at best a superficial category. His primary interest lay in uncovering the deeper values of a culture (Hofstede 1991, p. 9). By referring to "culture as mental programming," Hofstede (1991, p. 4) too situated culture within the unconscious, in a realm beyond the reach of language.

The issue of language within this field may have been initially overlooked or bypassed precisely because, from an ethnocentric and centrist perspective, it did not appear to be an insurmount-

able problem at any time. To this day, the roots and origins of the field are more commonly traced not to the early continental European cultural philosophy of the 19th century, but rather to the first half of the 20th century in the United States. It was here that the military first expressed interest in understanding foreign cultures, followed shortly thereafter by the burgeoning international markets as a field of application and necessity (Kulich et al. 2020, p. 60). From a U.S. perspective, the language issue might never have been perceived as a real problem, largely because it was often their international partners who seemed responsible for solving it. Martin et al. (2020, p. 21) also note that the focus on culture over language was later adopted by researchers in non-English-speaking regions, too.

Only later did the field recognize the gap created by ignoring the linguistic aspect. 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 (Zhu 2023). Jackson (2020b)'s *Routledge Handbook of Language and Intercultural Communication*, now in its second edition, provides an excellent overview of the numerous approaches and topics that have since emerged.

1.2. The implicit goal of intercultural research: Global peace and understanding

From its very beginnings, the study of intercultural communication has also been defined by its inherent ethical orientation towards peace and understanding on a global scale. The discipline may therefore feel intrinsically motivated to explore the potential of AI translation to foster new intercultural relationships in this vein. A notable trait of intercultural research is that authors in the field openly commit to normative social goals and orientations. Meanwhile, these goals have become more modest. MacDonald (2020, p. 253) notes that while authors in the early decades often argued that intercultural awareness and competence could transform the entire world for the better, today's goals are smaller. However, the awareness of the need for an ethical orientation is firmly established. This openly acknowledged normativity often serves as an easy target for criticism from established neighboring disciplines, which can easily dismiss the scientific legitimacy of the younger field of intercultural communication. However, Caillé and Vandenberghe (2016) refute this stance, arguing that even in the most descriptive branches of sociology, completely disinterested research is impossible and can only be ostensibly claimed. They assert that a normative orientation underlies all scientific endeavors. In these veins, Crozet et al. (1999, p. 6) claim a "need for intercultural understanding," Palacios (2010, p. 864) lists the needs for "global awareness and international solidarity, civic engagement, personal development, and international peace," and Holliday (2016, p. 6) sums up that we need to "begin conversations that bring us together." Jackson (2020a, p. 14) also envisions her handbook as part of the mission "to advance world peace and harmony."

1.3. Translation as AI-mediated communication

In many computer applications, such as social media or internet browsers, texts are automatically translated into the user's preferred language. This often happens without the user's conscious awareness, and users increasingly need to manually disable these functions if they want to (Crisostomo et al. 2022, p. 189). In contrast, in this paper, the active request for translation by the users is to be understood as a characteristic of AI-supported translation, as for example in dedicated translation tools for smartphones like Google Translate, DeepL, or ChatGPT.

The unique aspect of AI translation is not that it can operate unnoticed by the user, as this has been possible with translated texts before. Rather, its structural novelty lies in allowing users to request precise translations in any situation with minimal barriers, seamlessly integrating these translations into their interactions or even building those interactions upon them. Specifically, such spontaneous, user-initiated AI translations typically manifest through smartphones, which, either via operating system integration or apps, provide translations of typed, photographed, or spoken text in real-time and often for free. This capability enables users to shape situations and interactions in ways previously unattainable. Consequently, interpersonal relationships are likely to be different with the option of this technological use.

Hancock et al. (2020, p. 89) highlight that in such fields of applications, humans will still be the primary agents. Technology, in contrast, does not but facilitate the transmission of what humans as agents want to say and achieve. According to Hancock et al. (2020, p. 92), there has been little research on this phenomenon, while most research has focused on human-computer interaction, not on the phenomenon of computers supporting interpersonal communication. For the phenomenon discussed here, Hancock et al. (2020, p. 90) argue that two previously separate phenomena must be considered together: the phenomenon of AI and the (now classic) field of computer-mediated communication:

"We integrate these AI and CMC conceptualizations to define AI-MC as: mediated communication between people in which a computational agent operates on behalf of a communicator by modifying, augmenting, or generating messages to accomplish communication or interpersonal goals" (Hancock et al. 2020, p. 90).

Hancock et al. (2020, p. 90) also emphasize that such a phenomenon will have specific social impacts, particularly in shaping interpersonal relationships. However, research on whether, in which situations, under what conditions, and in what form translation as AI-mediated communication can alter interpersonal relationships is scarce. Moreover, little is known about whether, to what extent, and in what form culture or interculturality might play a role in this context.

The fact that in 2024 this represents a novelty worth considering is evidenced by the depiction of smartphone-assisted translations in real interactions, as seen in TV shows (e.g. Netflix 2020), YouTube pranks (e.g. Whitt 2023), and product advertisements for smartphones featuring these capabilities (e.g. Samsung 2024; GoogleAustralia 2023).

In the aforementioned commercial for the Galaxy S24 Ultra smartphone, a scene depicts a young woman and her family using a covertly translated smartphone chat to advise her future son-in-law on how to gain the acceptance of his future father-in-law. They instruct him to deliberately lose an ongoing game of Go, allowing the father-in-law to win. Such an example clearly illustrates both the potential and risks of AI-mediated communication in shaping relationships. This form of communication can portray the sender differently than

they are—in another language, dialect, level of politeness, or social status, and can similarly adjust to an assumed recipient.

The following passages will provide an organized overview of several different research directions and fields that have investigated translation as AI-mediated communication. Section 2 begins with a look at application-oriented research, which focuses on developing practical translation tools. Section 3 will explore what the classical discipline of Translation Studies has to say on this topic, followed by a general humanities perspective in section 4. Section 5 will then concentrate on Applied Linguistics, which has been identified as a field particularly suited for investigating this subject. This section will uncover several gaps, especially regarding the shaping of relationships. Finally, section 6 will examine newer concepts from cultural theory for their potential to capture the phenomenon.

2. Computer science: A focus on technology

We currently associate artificial intelligence primarily with generative AI and its immense creative potential. Translations certainly play a role in this, as it is assumed that generative AI can translate everything for itself without language barriers. In AI-mediated communication, this creative potential is inherently limited, and the term itself might partially overlook the capabilities of generative AI. Nonetheless, human-induced interpersonal translation through technology has also seen significant advancements, with generative AI now at the forefront.

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. Even in earlier stages of development, predecessors of the current scope were achieved. For example, Lee (2023) distinguishes between different eras, while Liu and Li (2023) provide a history 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 and Li (2023, p. 283).

2.1. 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 and Li 2023, p. 283). Even highly advanced systems, such as Google Translate, can 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). Lee (2023, p. 3) concludes that machine translation systems have long offered an acceptable trade-off: the translations were generally very good, though not perfect. However, they were affordable and readily available at any time. Professional translators have not become obsolete; rather, they have taken on the crucial role of post-editors, where they review, revise, and enhance the machine-generated translations.

According to Evans and Aceves 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. This development allowed for human-computer interaction to be based on natural language for the

first time. 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. According to Crisostomo et al. (2022, p. 187), this machine learning of human language for computational purposes is known as computer-assisted language learning (CALL), which has increasingly evolved into intelligent computer-assisted language learning (ICALL). In computational linguistics, the ability of computers to understand human language is referred to as natural language processing (NLP). Computers were able to make initial autonomous learning steps based on specifically created language repertoires. Fundamentally, this already aligned with the core functionality of artificial intelligence, albeit within a confined scope (Crisostomo et al. 2022, p. 188).

2.2. 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. This is because the computer generates its translations based on probabilities found within its sample data (Liu and Li 2023, p. 284). When it comes to translations between human languages, machines rely on extensive datasets of existing, accurate translations. These datasets allow the machine to identify the most probable correct translation for a given request based on statistical likelihood (Liu and Li 2023, p. 284).

In contrast, Liu and Li (2023, p. 280-81) elucidate the origins of the neural network metaphor. While mathematical machines operate within the binary system, using only 0 and 1, it is posited that the human brain performs complex operations based on neural connections that are extensively interconnected. The idea of reducing everything to zeros and ones originates from Alan Turing's 1937 work and remains the fundamental basis for machine computing to this day (Liu and Li 2023, p. 281). Nonetheless, early efforts aimed to transcend this binarism in favor of simulating more complex systems. Liu and Li (2023, p. 281) discuss McCulloch and Pitts, who introduced a model for artificial neurons in 1943. Although initially simple and limited in capability, this model laid the groundwork for how more recent AI operates. Lee (2023, p. 4) notes that Anthony Pym, a global authority in translation studies, emphasized as early as 2010 that neural machine translation had just made significant advancements. A key development was the extension of statistical probability techniques from analyzing individual

words to entire sentences.

2.3. 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 paper goes online. Lee (Lee 2023, p. 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).

ChatGPT's new technology excels in categories that align with classical text linguistics. Lee (2023) highlights its superiority in dimensions of cohesion and coherence. For Lee, this implies that not only could the profession of translators become obsolete, even in a post-editor role, but also that the current perspective of translation studies is overly anthropocentric (Lee 2023, p. 2). Instead, a viewpoint should be adopted where humans are no longer the central creators but rather those who experience the translation process.

2.4. Fields of application

A first look at the technical literature on AI translation shows that it may be a characteristic of this field that many of its publications no longer focus on a single and common center of fundamental research as AI translation. Instead, a large part of publications in this field directly target a selected field of application or "specific industries like medical, e-commerce institutions, military, legal, and financial, among others" (Crisostomo et al. 2022, p. 187).

Even more, the literature review for this paper reveals that most scholarly discussions on AI-assisted translation appear in journals focusing on specific applications or computational aspects within computer science. In contrast, journals in translation studies and intercultural communication largely overlook or minimize the role of AI translation. Consequently, this contribution draws on sources from journals such as: *Psychology and Education* (Adanlawo et al. 2021), *PLOS Biology* (Amano et al. 2016), *Research, Society and Development* (Bakola et al. 2022), *International Journal of Information Management* (Dwivedi et al. 2023), *Critical Perspectives on Accounting* (Ghio 2024), *Journal of Physics: Conference Series* (Jiang and Lu 2021), *Journal of Namibian Studies* (Khasawneh 2023), and *International Journal of Engineering Technology* (Li et al. 2023).

This observation is further corroborated by the anthology by Dwivedi et al. (2023), where numerous experts were invited to share their insights on the impact of ChatGPT in a computer science journal. The collection showcases the wide array of applications for ChatGPT,

with relevant applied research being conducted in these fields. Notably, applied linguists, whom Crisostomo considers foundational to generative AI, are conspicuously absent from this discourse.

Active research and development in AI translation predominantly focus on applications where translation accuracy is critical. O'Brien and Ehrensberger-Dow (2020) identify crisis and emergency communication as a key area. For instance, cell broadcasts that send disaster warnings to all mobile phones in a specific area could benefit from rapid, multilingual translations. Similarly, communication among rescue teams in contexts where a common language is not guaranteed and time is of the essence could leverage AI translation. Vieira et al. (2021) discuss so-called high-risk settings more broadly, exemplifying hospital and courtroom communication. In these contexts, AI translation must be extremely accurate, as much is at stake. If AI translation is used here, it should be observed by trained personnel. According to the authors, issues and errors could then be attributed to "uninformed MT use" (Vieira et al. 2021, p. 1515) and mitigated through proper training. In these veins, Yuxiu (2024) provides evidence that students' proficiency in using AI translation tools—and thus the quality of the resulting translations—significantly improves with practice and training. This is reflected in a trend that Muñoz-Basols et al. (2023) see as a new discipline of Applied Translation Studies (ATS).

3. Translation studies: A focus on translators

Translation studies have indeed evolved with the advent and continuous development of new technologies. However, the mainstream focus remains on the role, tasks, and functions of the translator. Its users who, from a less anthropocentric perspective and in light of increasing technological advancements, could become increasingly significant in the translation process, are largely overlooked.

Examining the impact of AI translations on social behavior and interpersonal relationships is a relevant and potentially urgent research field. **?** highlight that most AI applications promote human-computer interactions. This, in turn, often leads to a decrease in human-to-human interactions, where interactions with computers cannot serve as an equal substitute. Therefore, a research direction that seeks solutions to actively promote interpersonal interactions through AI could be valuable. Yet, this perspective remains largely outside the scope of current translation studies.

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. Translation research increasingly relies on empirical (linguistic) corpora, and artificial intelligence does the same. Fan and Chunlei (2023, p. 59) conclude that these two fields can complement and reinforce each other in the development of AI-supported translation.

Indeed, translation studies also acknowledge that the advancing automation of translation is increasingly shifting the responsibilities and tasks of human translators towards post-editing (Hu 2020, p. 299). To navigate this shift successfully, translators today should build a form

of "digital literacy" or "MT literacy", as recommended by Ehrensberger-Dow et al. (2020). The unskilled use of AI translation tools by professional translators can result in disastrous errors. Conversely, the quality of AI translations can be significantly improved if translators are familiar with the tools and understand their strengths and limitations. Therefore, this skill should be included in translator training programs. For translation studies, this means that the components of MT literacy need to be identified, defined, and integrated into curricula.

4. No focus on machine translation in the humanities

Nevertheless, there are many voices in translation studies that form a discourse that argues that computers per se and in principle cannot and 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 singular humaneness is typically located and condensed in humanistic translation discourse 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.

Certainly, the debate in social theory is fueled by the immediate and concrete fear that human translators will lose their jobs and face the end of their careers, since there will be nothing left for them to do for work (Crisostomo et al. 2022, p. 189). And on a higher level, "the displacement of human translators" (Dwivedi et al. 2023, p. 42) may turn into an issue of central concern for the humanities and traditional anthropocentric theorizing. Machine translation takes away the work of translators and degrades them to mere administrators, argues Cheng (2017). However, since machine translation is far from perfect, the critical thinking skills of human translators, including their cultural and contextual knowledge, would be more in demand than ever, the above authors claim.

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).

Crisostomo et al. (2022, p. 193) see cultural aspects in very subtle nuances of language usage, and these nuances are at great risk of being lost in machine translation. In a similar vein, Dwivedi et al. (2023, p. 30) see styles, orientations, and norms in language use as components and layers of culture that are at risk of being lost in translation.

Here, Crisostomo et al. (2022, p. 193) remind us that people usually need translations because they do not have a command of a given foreign language, and that they therefore have to rely completely on the correctness and adequacy of a translation, which they cannot verify. This makes it all the more necessary for human translators to act as post-editors of machine translations, and it is for this reason that these post-editor-translators need cultural knowledge. Ehrensberger-Dow et al. (2020) even refer to such post-editor-translators as intercultural mediators, a term originally used by Alred and Byram (2002) for human translators.

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. 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. Indeed, Hicks et al. (2024) remind us that AI will never be able to adopt any attitude other than indifference, being purely language-based and only imitating human language products.

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 and 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 untertakings that specifically works on the equality of languages. Tenzer et al. (2024) pick 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 (2016), 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: Intercultural communication and AI translation

If we look at current research on intercultural communication to see what it has to say about AI translation, then applied linguistics may be the broader discipline to look at. Applied linguistics, amongst other themes, studies the intersections of foreign language translation and intercultural communication (Jackson 2020a). 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) 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 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. In the more general field of social research, Kamberelis et al. Kamberelis et al. (2017, p. 693) remind us that in addition to these paradigms, there are of course many more, and especially more recent ones, such as the post-structural and the post-qualitative ones.

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.

First of all, it should be mentioned that there is a considerable number of publications claiming to do research on AI translation and intercultural communication that do not really deal with this question on its general level, but rather report on very specific fields of application that very often confine the supposed intercultural to very narrow institutional structures. Such more concrete and limited applications could be, for example, students' social media use abroad (Alamri 2018) or pre-configured AI translation in foreign language learning (Alhalangy and AbdAlgane 2023). This includes the recent emergence of self-teaching/learning apps for learning foreign languages, which open up a completely new way of learning languages and seriously compete with institutionalized foreign language teaching. These apps often assist in the learning process by, among other things, providing the learner with additional support in the form of AI translation (Muñoz-Basols et al. 2023, p. 173).

In general, though, the studies mentioned here tend to avoid the open question of how AI

translation can promote intercultural relations in informal, and unstructured situations, and do not look for answers to this question.

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. Under this paradigm, there seems to be no need for uncovering something hidden or for interpretation. Looking at the role of AI translation in intercultural contact from this point of view, researchers might hypothesize for example that the use of such tools will increase the number of interactions between speakers of different languages. Also, research can ask what conditions need to be met for AI translation to improve intercultural relations. Alternatively, a positivist approach might investigate if and how people from different cultures might have different uses and perceptions of AI translation services.

Here, too, only a few studies 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 AI translation must master this. Consequently, such research again emphasizes the technical aspects of machine translation, as for example in Adanlawo et al. (2021) for intercultural business communication. Bakola et al. (2022, p. 8) extend this model of communication to include culture as an additional influence and factor that most often adds disturbances to the flow of translation. But more than that, they are interested in their idea that AI translation can prevent conflict by rephrasing negative statements into positive ones. Khasawneh (2023) criticizes these approaches for the fact that they are constantly focused only on the problems. Moreover, interculturality should also include para- and non-verbal communication. However, since AI translation would not be able to cover this, the current state of affairs seems to be the only one available. 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 the interpretive paradigm is based on the assumption that culture emerges as social meaning which is always context-specific. This meaning cannot be but reinterpreted by actors in a given situation against the background of their context. Thus research from this perspective cannot be but take an interpretive approach either. Researchers cannot access culture in an immediate way but have to interpret and observe how people act and interact.

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 in such contexts. Within the range of qualitative research methods, there could also be interviews with actors about their experiences with such tools. The role of culture in these contexts could be left entirely to the interpretation and construction of its users, to the extent that they might even negate culturality. So far, however, there is hardly any research that is known to address these questions.

Even further on, Poststructuralists later argued that human interpretative power might be overestimated if this is considered the primary way to understand the world. In intercultural communication research, this equation of culture with meanings to be interpreted has persisted. The focus has long been on identifying communications that were particularly meaningful to the participants (Piipponen 2023). These communications were seen as the essence of interculturality, even if the exact nature of these interactions was unclear (Sommier et al. 2021).

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 paper is published. There also does not seem to be any research on how humans modify their meaning making when AI translation is at their service. 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, which reconceptualized culture not as homogeneous containers but as phenomena characterized by internal fractures and conflicts over interpretative authority. 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.

From this perspective, specific and actual intercultural contact is significantly shaped by these structures, making genuine individual agency without considerable effort a challenge. Grounded in theories of social justice, parts of intercultural research criticize these conditions and aim to make them visible.

In the 1990s, the critical paradigm in intercultural research gave rise to an ethical-normative school influenced by Rawls (1971)' concept of social justice in Western philosophy (Christians and Shan 2015). Alongside this, a unique approach to critical social justice emerged in intercultural communication research, as articulated by Sorrells (2013). This approach draws on critical cultural perspectives from British Cultural Studies (Hall 1996) and South American Liberation Theology (Freire 2000).

Exploring the role of AI translation raises numerous questions beyond the micro-level of interaction situations, encompassing societal and global dimensions and their interrelationships. Researchers can investigate how AI translation exacerbates or mitigates power imbalances at various levels. While existing studies often focus on particular aspects, taken together, they begin to form a coherent picture. In this context, many authors hope that artificial

intelligence can enhance equity in education (Kasneci et al. 2024).

Two areas of application dominate the existing literature on AI translation in contexts relevant to intercultural research: 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.

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. Therefore, machine translation becomes their first viable option to solve this problem, especially when their language skills are assessed as insufficient, their papers being rejected from academic journals.

One reason for the abundance of literature on this topic may be the fact that this is a topic of concern to researchers themselves. AI translation has the potential to make scholarly publishing more equally accessible to people all over the world. However, therefore, the current situation is often criticized as neoliberal: Scholars are by and large left alone with this problem (Collins 2018).

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, and the authors largely confirm this hypothesis. There are even second-order effects of this: The overall impact of journals increases when a non-English journal switches to English, but their overall impact will actually suffer if they still continue to accept a few papers written in languages other than English. The assumption that non-English papers tend to be of lower academic quality is shown to be a mere stereotype by Di Bitetti and Ferreras. But 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. 125) cannot help but advise academics to publish in English, and research institutions should support their staff in doing so (Di Bitetti and Ferreras 2017, p. 126). Zou et al. (2023) explicitly recommend the use of AI translation tools for this purpose.

The author of this paper follows this recommendation and uses ChatGPT 4o as well as DeepL Translate and DeepL Write for the translation of passages from the German original and for style rewriting tasks in English. However, he feels that he still needs a certain account in both languages, without which it would not be possible to work properly.

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 and Porras 2020, p. 3),
- the loss of linguistic diversity is not really taken seriously (Kenny 2022, p. 135),

- the competent use of AI requires training and skills not everyone has access to (O'Brien and 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. Hyland (2016, p. 58) also argues that the whole debate about disadvantaging non-English-speaking scholars backfires because it only further discourages non-English-speaking authors from publishing in English.

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. Recent migration research generally examines spatial migration and refugee movements from an interdisciplinary, often cultural anthropological perspective. Contemporary approaches increasingly describe migration as a norm rather than an exception, suggesting that it should be researched, described, and supported rather than prevented (Vertovec 2013).

Digital tools play a central role in a world interconnected by migration. 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.

Therefore, Leurs and Smets also criticize the tendency to view this phenomenon from a Eurocentric perspective. Digital migration research fundamentally explores how current migration and refugee movements are shaped, carried out, processed, and interpreted through social media and internet communication. This complex phenomenon is inconceivable without the use of such technology, where translation plays both direct and indirect essential roles.

In his online lecture, Androutsopoulos (2024) highlights research showing how smartphones helped refugees, particularly in the 2010s. Translation is just one of many functions. He references Witteborn (2015) and Leurs and Smets (2018). Witteborn (2015) focuses on how refugees network through social media, occasionally mentioning that refugees use Google Translate to translate Facebook posts. 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. This understanding of getting by resembles the concept of languaging (Hinnenkamp 2016; Wei 2023), which also promotes chaotic muddling through as the most effective method. This aligns with contemporary poststructuralist ideas, which were developed to aptly capture the chaotic and transient nature of the present.

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. Within the research paradigms of intercultural communication, these references fit into the discourse of the 1990s and early 2000s, when the model of multiculturalism in cultural politics (Taylor 1994) was at its peak.

While multiculturalism advocated for valuing diversity and the coexistence of people from different cultures, critics argued that such parallel coexistence was insufficient for achieving global peace. Insights from postcolonial theory on existing inequities cast doubt on this outlook. Scholars like 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, Cantle (2012) proposed interculturalism as a deliberate and active approach to engaging with others. However, the methods for implementing this engagement remained relatively undefined.

The perspective within technological sciences and disciplines outside translation studies is notably more positive (e.g. Karakas 2023). Crisostomo et al. (2022, p. 188) foresee that AI translation, particularly when it functions automatically and discreetly, 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, the 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. However, they also seemed convinced that AI translation will never be as perfect as human translators and therefore will never replace them.

Notably, these prophecies and predictions remain consistently vague instead of elaborating on how exactly AI translation might contribute to intercultural dialogue and, potentially, to intercultural understanding. A critical concern is that the focus may end up solely on the capability of culturally sensitive translation, without addressing its social impacts on shaping

interpersonal relationships.

Again, there are a few studies in this category that focus on more selected subfields of interaction, mostly in more institutional settings. 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 is often limited to learning a few cultural facts. For example, Shadiev and 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. The authors argue that this exercise increased cultural sensitivity as defined by Bennett (1986), since students recognized cultural differences through this activity. However, these interactions are highly guided and are not really an example of spontaneous relationship-building in intercultural settings that would not have happened otherwise.

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. Social science foci on machine translation

The main aim of this paper was to shift the focus of current research on AI translation from its technical aspects and the question of whether or not machines will replace human translators to the question of how AI translation shapes and transforms social relations. Intercultural situations are hypothesized to be of particular interest here because they are often equated with interactants who do not share a common language and who are therefore strongly constrained by all existing language accounts. So, assuming that this barrier is now removed, it can be assumed that entirely new interactions will emerge – in number as well as in their qualities and forms. Accordingly, this question will no longer be so much about the linguistic interaction that takes place as such, but rather about the effective social relations and contexts that develop around this communicative exchange. Thus, the full range of social science methods may be relevant to exploring these new situations and how they are new or not.

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 devel-

oping in a trend to include material contexts and technological devices in the spheres where social interactions take place. For example, there are recent trends in intercultural research that focus less on intercultural communication and the location of the intercultural in these interaction processes, and more on interculturality as a state of mind that may develop more in the mind of a person.

Moreover, social theory in general has emancipated itself from humanistic and anthropocentric worldviews in recent decades. As a result, posthumanism and new materialism, for example, are two very recent paradigms in social theory that emphasize the decentering of humans in their worldview and in their respective research on humans in their lifeworlds. This tendency can also be seen as an orientation in favor of the inclusion of AI and technological devices in the study of social life. In fact, it seems as if these approaches have been made for this very purpose.

This new focus on internal perception and attitude in intercultural communication research parallels a trend in technology research, driven by advancements in AI. Grego (2023) notes that as early as the 1950s, the technological sciences experienced a "cognitive turn," which brought the concept of the "mind" back into focus and made it a crucial anchor for technological development.

So far, there is hardly any existing research on the role of AI translation in intercultural relations from the point of view of these new approaches mentioned above. As a result, the entire field is still open and in urgent need of being explored and described. Accordingly, only a few exemplary questions that might be of interest for future research can be touched upon in this paper. AI translation-assisted intercultural relations is expected to become an entirely new field of research.

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). Despite this, mindfulness remains highly regarded in intercultural research, partly because cultural aspects are traditionally seen as characteristically unconscious—a legacy traceable to Edward T. Hall's interest in Sigmund Freud's concepts. Mindfulness is thus a crucial first step for intercultural competence, making these unconscious phenomena conscious (Gudykunst 1993, p. 40).

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 complexity 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 and Nakayama 2010, p. 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. This insight, rooted in the work of McLuhan and Meyrowitz, is fundamental and applies to nearly every technological development. Unfortunately, perhaps because it seems so obvious, it is rarely analyzed in relation to newer technologies. Revisiting this concept could be particularly enlightening, as Fortunati does in her study on mobile telephony.

Two decades later, the emergence of AI translating tools shows even similar characteristics. In fact, AI translation tools 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, instead of relying on other people as their human translators. Even more, people are no longer dependent on other tools such as dictionaries written by other people and their publishers, all of whom discuss and decide on supposedly appropriate translations and whether or not certain other languages or cultures can be translated at all. 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.

Using Actor-Network Theory as proposed by Latour (1987), it might be possible to systematically map and explore 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. Research in intercultural communication is still in its infancy in this regard: AI-translated intercultural communication emerges as a completely new genre of interculturality that has no predecessors.

6.3. Interculturality as relations

The concept of relationships can serve as a vital conceptual bridge between technology-focused AI research and the thematic fields of intercultural communication. Defining, describing, and measuring relationships have always been central, particularly to psychology, aside from

network theory approaches that empirically connect to social theoretical topics. However, AI research has primarily focused on human-computer relationships. This includes examining whether, how, and under what conditions people develop various relationships with machines, such as chatbots or robots, ranging from purely service-oriented interactions to friendships and even romantic relationships (Zimmerman et al. 2023). The question of how AI applications can create, weaken, or strengthen relationships between people has received less attention.

6.4. 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. Communicating with technical devices is inherently different from communicating with humans, and the relentless comparison stems from an ongoing, implicit battle between opponents and proponents of AI. This binary view, however, does little to advance our understanding of the subject. As Ghio (2024) asserts, "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 and Lehman 2018).

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 (2007)'s concept of agential realism, this material environment interacts with humans at least as actively as humans interact with it.

Nath and Manna (2023, p. 187–89) trace the roots of posthumanist thinking in European philosophy back to motifs and origins that often date back centuries before being explicitly formulated in the 20th century. From today's perspective, posthumanist insights and ways of thinking make it easier for us to conceptualize worlds in conjunction with artificial intelligence. However, this relationship can be seen as symbiotic: as early as the 1960s and 1970s, technological utopias fueled posthumanist theorizing, and in the present, it is evident that the increasing societal reception of and experience with AI applications lead to experiences that increasingly align with what poststructuralist theories attempt to outline. This alignment has given additional momentum to poststructuralist approaches in social theory.

Translation studies have long recognized the decentering of the translator's role in describing the translation process, a shift that began well before the advent of ChatGPT, as Lee (2023, p. 3) points out. However, translation studies still grapple with the dethroning and decentering of the human translator. To describe how AI tools transform the translation process, Lee proposes the concept of distributed cognition, suggesting a symbiotic relationship between humans and machines in translation work. According to Lee, AI has ushered translation into a posthuman phase, where machines extend and transcend human cognition and abilities (Lee 2023, p. 1). Lee emphatically argues that the introduction of ChatGPT inevitably leads to

the decentering of humans, as the tool is designed for this very purpose. Even if translation studies cling to the notion that the human translator remains the overarching manager of the translation process and responsible for post-editing, it is clear that this will likely not remain the case for long (Lee 2023, p. 13). The concept of distributed cognition brings into focus a network of actors, many of which are not human but material and mechanical. AI tools, in particular, are likely to assume a particularly prominent role within this network (Lee 2023, p. 19). This network perspective indeed highlights additional entanglements and embeddings that would never have been considered from a traditional translation viewpoint, such as the interaction of translators with, and as users of, a myriad of forums, platforms, and tools (Lee 2023, p. 20).

Lee indeed argues for a "paradigm shift" in translation studies where "a different imaginary of translation is in order" Lee (2023, p.13). However, instead of truly focusing on the machine or the translation process to embrace a genuinely posthumanist perspective, Lee continues to focus on the human translator. The translator subordinates the machine as a kind of prosthesis to extend their own capabilities, rather than fully integrating the machine as an equal actor in the process.

A truly posthumanist perspective on the translation process would, by contrast, treat all involved human and material actors as equally important, moving away from a singular focus on the translator. Besides examining the capabilities of AI translation tools, this approach would prioritize the users and recipients of translations. These individuals now use translations in different ways than before, and their social contexts are significantly altered and likely expanded by the availability of translations. In fact, the translator plays virtually no role in this scenario, a reality so strongly negated and tabooed by translation studies that it hardly seems to be considered at all.

Wang (2023) identifies another possible reason why the translator-centric perspective in translation studies remains unchallenged, particularly due to the cognitive theoretical shift in the field since the 1950s. This focus on human cognition as the central locus of translation impedes the decentering of the translator and the emphasis on materiality and users. Even the concept of distributed cognition serves only as a half-hearted bridge. According to Wang, this cognitive turn results in cognitive overload, with the human translator being overburdened by such a central and intense role, ultimately translating in a procedural rather than a constantly reflective manner. And Lee agrees: "Ultimately, what needs to be distributed is not just cognition, but also the translator's ego" (Lee 2023, p. 20).

7. Is AI translation too uncanny for interculturality?

This overview attempted to organize and categorize existing research on AI translation and its effects and implications, demonstrating how these AI research approaches could be integrated into the paradigms prevalent in intercultural communication research and what contributions they might make, as well as identifying research gaps that remain visible and unaddressed. This cursory examination was structured to progress from older to newer paradigms in intercultural research, suggesting that later approaches should increasingly provide answers to current questions in intercultural research and indicate the extent to which AI translation has been investigated within these contexts. However, the anticipated progressive research advancements regarding AI translation in intercultural communication have not materialized, even within the paradigms where such progress was most expected.

In simpler terms, there is a significant lack of satisfactory research on the role of AI translations in shaping interculturality, intercultural relationships, or novel intercultural contact situations. This leads to the critical question: Why is this the case? Why is there not more research on AI translation in the field of intercultural studies? Several structural and substantial reasons were highlighted in this paper: Translation studies aim to preserve the professional role and status of human translators and resist the shift of translation phenomena from the humanities to the natural and technical sciences. This preservation seems feasible only as long as a humanist and human-centered perspective is maintained. Conversely, there is reluctance to adopt newer approaches, such as posthumanist perspectives, which would integrate technology into the humanities. But why is this so?

There are pragmatic answers to this issue. Song et al. (2022) suggest that people become particularly aware of their lack of knowledge about what happens to the data and information they provide to AI, often during spontaneous interactions. The authors tested this with chatbots used in sales interactions, which, while not directly related to translation, highlight a broader concern. Additionally, Stein et al. (2024) conducted psychological tests indicating that openness to AI is linked to general personality traits.

Lee (2023, p. 20) offers an explanation for this phenomenon, suggesting that AI translation fundamentally remains unsettling for people and may continue to be so. The phenomenon of the uncanny, which computer technology and particularly humanoid robots evoke in humans, was identified and termed the "uncanny valley" in the 1970s (Mori et al. 2012). According to this concept, computers and robots become unsettling to humans when they become too human-like, leading to their rejection and disuse. Similarly, AI translation technology may become too unsettling for people, especially when it becomes too human-like in intercultural situations due to its effective performance. This unsettling nature arises particularly when AI helps to create meaning, mindfulness, and relational connections.

A genuinely posthumanist perspective on this phenomenon would offer new perspectives by setting aside the constant comparison between machines and humans. Viewing machines as equal translators can be beneficial, especially in addressing their positioning within the spectrum of uncanniness. This uncanniness arises when a translation appears human-like but not entirely human, and acknowledging this can lead to more responsible, professional, and productive use of AI translation tools. For instance, this uncanny gap can help identify and detect plagiarized work in academia and research (Okfine2564 2024). Lee also emphasizes that posthumanist thinking in both academia and society could help overcome this sense of uncanniness. At the heart of such a shift, from a theoretical perspective, would be ontological reorientations towards an ontology of things (Lee 2023, p. 20).

8. 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 paper 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 Stone, J., Rutledge, D. M., Rizova, P. S., Smith, A. D., and Hou, X., editors, *The Wiley-Blackwell encyclopedia of race, ethnicity, and nationalism*. Wiley-Blackwell, Hoboken NJ. DOI: 10.1002/9781118663202.wberen627.

Adanlawo, E. F., Reddy, M. M., and Rugbeer, H. (2021). Intercultural business communication: The implications of language barriers. *Psychology and Education*, 58:6281–6290.

Alamri, B. (2018). The role of social media in intercultural adaptation: A review of the literature. *English Language Teaching*, 11(12):77–85.

Alhalangy, A. G. I. and AbdAlgane, M. (2023). Exploring the impact of ai on the efl context: A case study of saudi universities. *Journal of Intercultural Communication*, 23(2):41–49.

Alred, G. and Byram, M. (2002). Becoming an intercultural mediator: A longitudinal study of residence abroad. *Journal of Multilingual and Multicultural Development*, 23(5):339–352.

Amano, T., González-Varo, J. P., and Sutherland, W. J. (2016). Languages are still a major barrier to global science. *PLOS Biology*, 14(12):e2000933. publisher: Public Library of Science.

Androutsopoulos, J. (2024). Getting by with ai: Exploring the use of language technologies by forced migrants. [Online; accessed 2024-02-28].

Bakola, L. N., Drigas, A., and Skianis, C. (2022). Inteligência emocional vs. inteligência artificial: A interação da inteligência humana na robótica evolutiva. *Research, Society and Development*, 11(16):e72111636919.

Barad, K. (2007). Agential realism: How material-discursive practices matter. In Barad, K., editor, *Meeting the universe halfway: quantum physics and the entanglement of matter and meaning*, pages 132–185. Duke University Press, Durham. OCLC: ocm71189745.

Bennett, M. J. (1986). A developmental approach to training for intercultural sensitivity. *International Journal of Intercultural Relations*, 10(2):179–196.

Braidotti, R. (2011). *Nomadic theory: the portable Rosi Braidotti*. Gender and culture. Columbia Univ. Press, New York.

Caillé, A. and Vandenberghe, F. (2016). Neo-classical sociology: The prospects of social theory today. *European Journal of Social Theory*, 19(1):3–20.

Cantle, T. (2012). *Interculturalism: The new era of cohesion and diversity*. Palgrave Macmillan, London. DOI: 10.1057/9781137027474.

Chan, S.-w. (2009). Translating for the future: Some reflections on making a dictionary of translation technology. In Luo, X. and He, Y., editors, *Translating China*, pages 189–206. Multilingual Matters, Bristol, Buffalo, Toronto. DOI: 10.21832/9781847691880-014.

Cheng, W. (2017). Translation and big data technology: Challenges and implications. *Lebende Sprachen*, 62(2):241–252. publisher: De Gruyter.

Christians, C. and Shan, B. (2015). Introduction: Moral reasoning in intercultural media. In Shan, B. and Christians, C. G., editors, *The ethics of intercultural communication*, volume vol. 32 of *Intersections in communications and culture*, pages 1–14. Peter Lang, New York; Bern; Frankfurt; Berlin; Brussels; Vienna; Oxford; Warsaw.

Collins, H. (2018). Interculturality from above and below: navigating uneven discourses in a neoliberal university system. *Language and Intercultural Communication*, 18(2):167–183.

Crisostomo, M. M., Bernarte, R. P., and 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.

Crozet, C., Liddicoat, A. J., and Lo Bianco, J. (1999). Introduction. intercultural competence: From language policy to language education. In Lo Bianco, J., Liddicoat, A. J., and Crozet, C., editors, *Striving for the third place: Intercultural competence through education*, pages 1–17. Language Australia, Melbourne.

Di Bitetti, M. S. and 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.

Dwivedi, Y. K., Kshetri, N., Hughes, L., Slade, E. L., Jeyaraj, A., Kar, A. K., Baabdullah, A. M., Koohang, A., Raghavan, V., Ahuja, M., Albanna, H., Albashrawi, M. A., Al-Busaidi, A. S., Balakrishnan, J., Barlette, Y., Basu, S., Bose, I., Brooks, L., Buhalis, D., Carter, L., Chowdhury, S., Crick, T., Cunningham, S. W., Davies, G. H., Davison, R. M., Dé, R., Dennehy, D., Duan, Y., Dubey, R., Dwivedi, R., Edwards, J. S., Flavián, C., Gauld, R., Grover, V., Hu, M.-C., Janssen, M., Jones, P., Junglas, I., Khorana, S., Kraus, S., Larsen, K. R., Latreille, P., Laumer, S., Malik, F. T., Mardani, A., Mariani, M., Mithas, S., Mogaji, E., Nord, J. H., O'Connor, S., Okumus, F., Pagani, M., Pandey, N., Papagiannidis, S., Pappas, I. O., Pathak, N., Pries-Heje, J., Raman, R., Rana, N. P., Rehm, S.-V., Ribeiro-Navarrete, S., Richter, A., Rowe, F., Sarker, S., Stahl, B. C., Tiwari, M. K., van der Aalst, W., Venkatesh, V., Viglia, G., Wade, M., Walton, P., Wirtz, J., and Wright, R. (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.

Ehrensberger-Dow, M., Lehr, C., and Delorme Benites, A. (2020). Nmt literacy at the interface of ai and intercultural intelligence. Accepted: 2021-01-07T13:35:22Z.

Evans, J. A. and Aceves, P. (2016). Machine translation: Mining text for social theory. *Annual Review of Sociology*, 42(1):21–50. $_{e}print : https : //doi.org/10.1146/annurev - soc - 081715 - 074206$.

Fan, K. and 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. number: 4.

Fantini, A. E. (2020). Language. In Jackson, J., editor, *The Routledge handbook of language and intercultural communication*, pages 267–282. Routledge, New York, 2 edition. DOI: 10.4324/9781003036210-21.

Ferguson, G., Pérez-Llantada, C., and Plo, R. (2011). English as an international language of scientific publication: a study of attitudes. *World Englishes*, 30(1):41–59. $_{e}print : https : //onlinelibrary.wiley.com/doi/pdf/10.1111/j.1467 - 971X.2010.01656.x$.

Fleischman, T. (2023). Study uncovers social cost of using ai in conversations. [Online; accessed 2024-03-01].

Fortunati, L. (2002). The mobile phone: Towards new categories and social relations. *Information, Communication Society*, 5(4):513–528.

Freire, P. (2000). *Pedagogy of the oppressed*. Continuum, New York, 30th anniversary ed edition. original-date:1970.

Ghio, A. (2024). Democratizing academic research with artificial intelligence: The misleading case of language. *Critical Perspectives on Accounting*, 98:102687.

GoogleAustralia (2023). Live translate on google pixel 8 pro. https://www.youtube.com/watch?v=aamGv4wgjbQ.

Grego, K. (2023). From the cognitive turn to ai: reflections on recent trends in translation (studies).

Grimes, D. S., Eguchi, S., and Calafell, B. M. (2022). Can the communication discipline critically engage with mindfulness? *Western Journal of Communication*, 86(2):215–223.

Gudykunst, W. B. (1993). Toward a theory of effective interpersonal and intergroup communication. an anxiety/uncertainty management (aum) perspective. In Wiseman, R. L., editor, *Intercultural Communication Competence*, pages 33–71. Sage, Newbury Park, CA.

Hall, E. T. (1959). *The silent language*. Anchor Books, New York.

Hall, S. (1996). The west and the rest: discourse and power. In Hall, S. and Gieben, B., editors, *Formations of modernity*, Understanding modern societies, pages 184–227. Polity press, Cambridge, GB.

Hancock, J. T., Naaman, M., and Levy, K. (2020). Ai-mediated communication: Definition, research agenda, and ethical considerations. *Journal of Computer-Mediated Communication*, 25(1):89–100.

Hicks, M. T., Humphries, J., and Slater, J. (2024). Chatgpt is bullshit. *Ethics and information technology*, 26(2):38.

Hinnenkamp, V. (2016). Languaging in the global contact zone: polylingual performances as transcultural interface. In Kazzazi, K., Treiber, A., and Wätzold, T., editors, *Migration – Religion – Identität. Aspekte transkultureller Prozesse*, pages 139–165. Springer Fachmedien, Wiesbaden. DOI: 10.1007/978-3-658-06510-2.

Hofstede, G. (1991). *Cultures and organizations: Software of the mind. Intercultural communication and its importance for survival*. McGraw-Hill, London.

Hohenstein, J., Kizilcec, R. F., DiFranzo, D., Aghajari, Z., Mieczkowski, H., Levy, K., Naaman, M., Hancock, J., and Jung, M. F. (2023). Artificial intelligence in communication impacts language and social relationships. *Scientific Reports*, 13(1):5487.

Holliday, A. (2016). Revisiting intercultural competence: Small culture formation on the go through threads of experience. *International Journal of Bias, Identity and Diversities in Education*, 1(2):1–13.

Holliday, A. and MacDonald, M. N. (2020). Researching the intercultural: Intersubjectivity and the problem with postpositivism. *Applied Linguistics*, 41(5):621–639.

Hu, K. K. (2020). How mt errors correlate with postediting effort: a new ranking of error types. *Asia Pacific Translation and Intercultural Studies*, 7(3):299–309. publisher: Routledge $_{e}print : https : //doi.org/$10.1080/23306343.2020.1809763.

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.

Hyland, K. (2016). Academic publishing and the myth of linguistic injustice. *Journal of Second Language Writing*, 31:58–69.

Jackson, J. (2020a). Introduction and overview. In Jackson, J., editor, *The Routledge handbook of language and intercultural communication*, pages 1–16. Routledge, 2 edition. DOI: 10.4324/9781003036210-1.

Jackson, J., editor (2020b). *The Routledge handbook of language and intercultural communication*. Routledge, New York. DOI: 10.4324/9781003036210.

Jiang, K. and 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. publisher: IOP Publishing.

Jimenez-Crespo, M. A. (2023). "translationese" (and "post-editese"?) no more: on importing fuzzy conceptual tools from translation studies in mt research. page 261–268, Tampere, Finland. European Association for Machine Translation. [Online; accessed 2024-02-08].

Kamberelis, G., Dimitriadis, G., and Welker, A. (2017). Focus group research and/in figured worlds. In Denzin, N. K. and Lincoln, Y. S., editors, *The Sage handbook of qualitative research*, pages 692–716. Sage, Los Angeles, fifth edition edition.

Karakas, A. (2023). Breaking down barriers with artificial intelligence (ai): Cross-cultural communication in foreign language education. In Kartal, G., editor, *Advances in Educational Technologies and Instructional Design*, pages 215–233. IGI Global, Hershey, PA. DOI: 10.4018/978-1-6684-9893-4.ch012.

Kasneci, E., Seßler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günnemann, S., Hüllermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeffer, J., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., Stadler, M., Weller, J., Kuhn, J., and Kasneci, G. (2024). Chatgpt for good? on opportunities and challenges of large language models for education. *EdArXiv Preprints*. publisher: OSF.

Keeling, D. M. and Lehman, M. N. (2018). Posthumanism. In *Oxford research encyclopedia of communication*. Oxford University Press. DOI: 10.1093/acrefore/9780190228613.013.627.

Kenny, D., editor (2022). *Machine translation for everyone: Empowering users in the age of artificial intelligence*. Language Science Press, Berlin. DOI: 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.

Kim, M.-S. and Ebesu Hubbard, A. S. (2007). Intercultural communication in the global village: How to understand "the other". *Journal of Intercultural Communication Research*, 36(3):223–235.

Klimova, B., Pikhart, M., Benites, A. D., Lehr, C., and Sanchez-Stockhammer, C. (2023). Neural machine translation in foreign language teaching and learning: a systematic review. *Education and Information Technologies*, 28(1):663–682.

Kulich, S. J., Weng, L., Tong, R., and DuBois, G. (2020). Interdisciplinary history of intercultural communication studies. In *The Cambridge Handbook of Intercultural Training*, pages 60–163. Cambridge University Press, Cambridge. DOI: 10.1017/9781108854184.006.

Latour, B. (1987). *Science in action: how to follow scientists and engineers through society*. Harvard University Press, Cambridge, Mass.

Laywine, N. (2024). All that glitters: extraction as communication in international voluntourism practice. *Journal of International and Intercultural Communication*, 0(0):1–20. publisher: Routledge $_{e}print : https : //doi.org/10.1080/17513057.2024.2359937$.

Lee, T. K. (2023). Artificial intelligence and posthumanist translation: Chatgpt versus the translator. *Applied Linguistics Review*. publisher: De Gruyter Mouton.

Leeds-Hurwitz, W. (2014). Notes in the history of intercultural communication. the foreign service institute and the mandate for intercultural training. In Asante, M. K., Miike, Y., and Yin, J., editors, *The global intercultural communication reader. Second edition*, pages 17–34. Routledge, New York, London.

Leurs, K. and 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. publisher: SAGE Publications Ltd.

Levine, D. R. and Adelman, M. B. (1982). *Beyond language: intercultural communication for English as a second language*. Prentice Hall Regents, Englewood Cliffs, NJ.

Li, R., Nawi, A. M., and Kang, M. S. (2023). Human-machine translation model evaluation based on artificial intelligence translation. *EMITTER International Journal of Engineering Technology*, 11(2):145–159. number: 2.

Liu, X. and Li, C. (2023). Artificial intelligence and translation. In *Routledge encyclopedia of translation technology*, pages 280–302. Routledge, London, 2 edition. DOI:10.4324/9781003168348-16.

Luo, X. (2018). Artificial intelligence and the crisis of translation. *Asia Pacific Translation and Intercultural Studies*, 5(1):1–2.

MacDonald, M. N. (2020). A global agenda for ethical language and intercultural communication research and practice. In Jackson, J., editor, *The Routledge handbook of language and intercultural communication*, pages 555–572. Routledge, New York, 2 edition.

Martin, J. N. and Nakayama, T. K. (2010). Intercultural communication in dialectics revisited. In Nakayama, T. K. and Halualani, R. T., editors, *The handbook of critical intercultural communication*, pages 59–83. Wiley-Blackwell, Chichester.

Martin, J. N., Nakayama, T. K., and Carbaugh, D. (2020). A global look at the history and development of language and intercultural communication studies. In Jackson, J., editor, *The Routledge handbook of language and intercultural communication*, pages 19–38. Routledge, New York, 2 edition. DOI: 10.4324/9781003036210-3.

Moorkens, J. (2022). Ethics and machine translation. In Kenny, D., editor, *Machine translation for everyone: Empowering users in the age of artificial intelligence*, pages 121–140. Language Science Press, Berlin. DOI: 10.5281/zenodo.6653406.

Mori, M., MacDorman, K. F., and Kageki, N. (2012). The uncanny valley. *IEEE Robotics Automation Magazine*, 19(2):98–100. original-date: 1970.

Muñoz-Basols, J., Neville, C., Lafford, B. A., and Godev, C. (2023). Potentialities of applied translation for language learning in the era of artificial intelligence. *Hispania*, 106(2):171–194. publisher: Johns Hopkins University Press.

Márquez, M. C. and Porras, A. M. (2020). Science communication in multiple languages is critical to its effectiveness. *Frontiers in Communication*, 5:Art. 31.

Nath, R. and Manna, R. (2023). From posthumanism to ethics of artificial intelligence. *AI Society*, 38(1):185–196.

Netflix (2020). Emily in paris. [Online; accessed 2024-05-08].

NLLB-Team (2024). Scaling neural machine translation to 200 languages. *Nature*, 630:841–846. publisher: Nature Publishing Group.

Nussbaum, M. C. (1998). *Cultivating humanity. A classical defense of reform in liberal education*. Harvard University Press, Cambridge, MA.

Okfine2564 (2024). Essays are dead. [Online; accessed 2024-02-08].

O'Brien, S. and Ehrensberger-Dow, M. (2020). Mt literacy—a cognitive view. *Translation, Cognition Behavior*, 3(2):145–164. publisher: John Benjamins.

Palacios, C. M. (2010). Volunteer tourism, development and education in a postcolonial world: conceiving global connections beyond aid. *Journal of Sustainable Tourism*, 18(7):861–878. publisher: Routledge $_e print : https : //doi.org/10.1080/09669581003782739$.

Piipponen, O. (2023). Students' perceptions of meaningful intercultural encounters and long-term learning from a school story exchange. *International Journal of Educational Research*, 119:102169.

Primecz, H., Romani, L., and Topcu, K. (2015). A multi-paradigm analysis of cross-cultural encounters. In Holden, N., Michailova, S., and Tietze, S., editors, *The Routledge Companion to Cross-Cultural Management*, pages 431–439. Routledge, London. DOI: 10.4324/9780203798706-50.

Pym, A. (2016). *Translation solutions for many languages: histories of a flawed dream*. Bloomsbury advances in translation. Bloomsbury Academic, London, New York.

Rawls, J. (1971). *A theory of justice*. Harvard University Press, Cambridge, MA.

Rogers, E. M., Hart, W. B., and Miike, Y. (2002). Edward t. hall and the history of intercultural communication: The united states and japan. *Keio Communication Review*, 24:3–26.

Sahari, Y., Al-Kadi, A. M. T., and 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.

Samsung (2024). Galaxy s24 ultra official film: Chat assist. https://www.youtube.com/watch?v=-zGIboA6mNw.

Shadiev, R. and 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.

Shadiev, R., Sun, A., and 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. $_e print : https : //onlinelibrary.wiley.com/doi/pdf/10.1111/bjet.12648$.

Sommier, M., Lahti, M., and Roiha, A. (2021). From 'intercultural-washing' to meaningful intercultural education: Revisiting higher education practice. *Journal of Praxis in Higher Education*, 3(2):1–16.

Song, M., Xing, X., Duan, Y., Cohen, J., and Mou, J. (2022). Will artificial intelligence replace human customer service? the impact of communication quality and privacy risks on adoption intention. *Journal of Retailing and Consumer Services*, 66:102900.

Sorrells, K. (2013). *Intercultural communication: globalization and social justice*. Sage, Los Angeles, CA.

Stein, J.-P., Messingschlager, T., Gnambs, T., Hutmacher, F., and Appel, M. (2024). Attitudes towards ai: measurement and associations with personality. *Scientific Reports*, 14(1):2909.

Taylor, C. (1994). The politics of recognition. In Taylor, C., Gutmann, A., and Taylor, C., editors, *Multiculturalism: examining the politics of recognition*. Princeton University Press, Princeton, N.J. original-date:1992.

Tenzer, H., Feuerriegel, S., and Piekkari, R. (2024). Ai machine translation tools must be taught cultural differences too. *Nature*, 630(8018):820–820. Bandiera$_a$*btest* : $aCg_t ype$: $Correspondencepublisher$: $NaturePublishingGroupSubject_t erm$: $Machinelearning, Technology, Language, Society$.

Ting-Toomey, S. (2015). Mindfulness. In Bennett, J. M., editor, *The Sage encyclopedia of intercultural competence*. Sage, Thousand Oaks, CA. DOI: 10.4135/9781483346267.n203.

Vertovec, S. (2013). Circular migration. In Ness, I., editor, *The encyclopedia of global human migration*, volume 40, page 741. Wiley-Blackwell, Chicester. DOI: 10.1002/9781444351071.wbeghm135.

Vieira, L. N., O'Hagan, M., and O'Sullivan, C. (2021). Understanding the societal impacts of machine translation: a critical review of the literature on medical and legal use cases. *Information, Communication Society*, 24(11):1515–1532.

Wang, B. (2023). Exploring information processing as a new research orientation beyond cognitive operations and their management in interpreting studies: taking stock and looking forward. *Perspectives*, 31(6):996–1013. publisher: Routledge $_e$*print* : *https* : $//doi.org/10.1080/0907676X.2023.2200955$.

Wei, L. (2023). Translanguaging. In *The Routledge handbook of applied linguistics*, pages 386–395. Routledge, London, 2 edition. number-of-pages: 10.

Whitt, C. (2023). Fake tourist prank gone wrong! *Youtube.com*, https://www.youtube.com/watch?v=iK$_H$$H9CPMt0$.

Witteborn, S. (2015). Becoming (im)perceptible: Forced migrants and virtual practice. *Journal of Refugee Studies*, 28(3):350–367.

Yuxiu, Y. (2024). Application of translation technology based on ai in translation teaching. *Systems and Soft Computing*, 6:200072.

Zhu, H. (2016). Identifying research paradigms. In Zhu, H., editor, *Research methods in intercultural communication: A practical guide*, pages 3–22. Wiley Blackwell, Chichester. DOI: 10.1002/9781119166283.ch1.

Zhu, H. (2023). Intercultural communication. In Wei, L., Zhu, H., and Simpson, J., editors, *The Routledge handbook of applied linguistics. Vol. 2*, pages 81–93. Routledge, London. number-of-pages: 13.

Zhu, H. (2024). New dynamics, new agendas? ai and recruitment interviews. [Online; accessed 2024-02-28].

Zimmerman, A., Janhonen, J., and Beer, E. (2023). Human/ai relationships: challenges, downsides, and impacts on human/human relationships. *AI and Ethics*. [Online; accessed 2024-02-11].

Zou, C., Gong, W., and 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. $_{e}print : https : //onlinelibrary.wiley.com/doi/pdf/10.1002/leap.1565$.

Üstün, A., Aryabumi, V., Yong, Z.-X., Ko, W.-Y., D'souza, D., Onilude, G., Bhandari, N., Singh, S., Ooi, H.-L., Kayid, A., Vargus, F., Blunsom, P., Longpre, S., Muennighoff, N., Fadaee, M., Kreutzer, J., and Hooker, S. (2024). Aya model: An instruction finetuned open-access multilingual language model. arXiv:2402.07827 [cs].

Affiliation:

Prof. Dr. Dominic Busch
Universität der Bundeswehr München
85577 Neubiberg, Germany
E-mail: dominic.busch@unibw.de
URL: https://go.unibw.de/icc

SocArXiv Website https://socopen.org/
SocArXiv Preprints https://osf.io/preprints/socarxiv

Preprint *Submitted:* October 14, 2025
https://doi.org/10.31235/osf.io/r3zdx *Accepted:* October 14, 2025