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THE ROLE OF GOOGLE TRANSLATE AND ARTIFICIAL INTELLIGENCE IN TRANSLATION

The rapid development of digital technologies has fundamentally transformed the field of translation, repositioning it within the broader domain of Translation Studies as a technology-mediated practice. In this context, artificial intelligence (AI) and machine translation (MT) systems are no longer peripheral tools but central elements that reshape both the process and the epistemology of translation. As defined by Koehn, machine translation refers to “the automatic translation of text from one natural language into another using computational methods” (Koehn, 2009). However, this definition requires further specification within contemporary research, where MT is understood as a dynamic system evolving from rule-based and statistical models to neural network-based architectures.

The historical development of machine translation reflects broader shifts in computational linguistics and data-driven approaches to language processing. As Hutchins observes, “the history of machine translation reflects the development of computer science and computational linguistics over several decades” (Hutchins, 1995). The transition to neural machine translation has significantly improved fluency and contextual sensitivity, allowing systems such as Google Translate to produce more natural outputs. Nevertheless, this technological advancement introduces a fundamental methodological tension between probabilistic language generation and interpretative meaning construction.

The growing popularity of AI-driven translation tools can be explained through several interrelated factors, including speed, accessibility, and cost efficiency. Machine translation systems enable the rapid processing of large volumes of text, making them

particularly valuable in contexts such as digital communication, localization, and information exchange. At the same time, their global availability reduces linguistic barriers and democratizes access to multilingual content. However, these advantages must be critically evaluated within a framework that distinguishes between quantitative efficiency and qualitative adequacy.

From an analytical perspective, the key issue lies in the assessment of translation quality. Contemporary research emphasizes criteria such as semantic accuracy, pragmatic equivalence, and the balance between adequacy and fluency. As Rivera Trigueros (2022) argues, the quality of machine translation is highly variable and depends on language pairs, domains, and training data. This variability reveals a core contradiction: while AI systems excel in pattern recognition and statistical prediction, they often fail to capture cultural nuances, idiomatic expressions, and context-dependent meanings. Consequently, machine-generated translations may lack interpretative depth and stylistic coherence, particularly in specialized or culturally embedded texts.

Another critical dimension concerns the presence of bias in AI systems. Since machine translation models are trained on large datasets, they inevitably reproduce the biases embedded within those data. This raises important ethical and epistemological questions regarding neutrality, representation, and the reliability of automated translation outputs. Thus, the use of AI in translation should be approached not as a neutral technological solution but as a mediated process shaped by data, algorithms, and contextual limitations.

The comparison between human and machine translation highlights a fundamental difference in the nature of linguistic processing. Human translators operate through interpretation, intentionality, and contextual awareness, integrating cultural knowledge and communicative purpose. In contrast, machine translation systems rely on probabilistic modeling and pattern recognition, generating outputs based on statistical likelihood rather than semantic understanding. This distinction suggests that the

relationship between human and machine translation should not be framed as a competition but as a complementary interaction.

In modern translation practice, this interaction is realized through post-editing, where machine-generated texts are refined by human translators. Such a hybrid approach reflects a broader shift from the paradigm of replacement to that of augmentation, in which AI enhances human capabilities rather than substitutes them. As Koehn (2009) emphasizes, machine translation technologies should be considered tools that assist translators, increasing productivity while preserving quality.

In conclusion, artificial intelligence and machine translation systems have significantly redefined the landscape of translation and global communication. Their effectiveness lies not only in their technical capabilities but also in their integration into human-centered translation processes. Despite considerable progress, AI systems remain limited in their ability to interpret meaning, context, and cultural nuance. Therefore, the most productive approach to translation in the contemporary digital environment is the synergistic cooperation between human expertise and artificial intelligence. Such cooperation ensures a balance between efficiency and interpretative depth, which ultimately determines the quality and reliability of translation outcomes.

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