

## ACCURACY AND NUANCES IN MACHINE AND HUMAN TRANSLATION

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**Abstract.** *The rise of machine translation (MT) technology has transformed the field of translation, offering rapid, cost-effective solutions for converting text across languages. While MT systems like Google Translate and Deep L continue to improve in accuracy, significant challenges remain in conveying the nuances, cultural context, and emotional tone often essential for true understanding. This article explores the strengths and limitations of both machine and human translation, focusing on their ability to deliver accurate, nuanced translations. Machine translation is highly efficient for straightforward or repetitive text, excelling in speed and consistency. However, it frequently struggles with contextual understanding, idiomatic expressions, and complex grammatical structures. In contrast, human translators bring cultural sensitivity, contextual awareness, and an understanding of tone, allowing them to accurately interpret idioms, humor, and emotional subtleties. While machine translation is valuable for quick, general-purpose translations, human translation remains the gold standard for nuanced, high-stakes content, such as literature, legal documents, and marketing. This article concludes that both machine and human translation play essential, complementary roles, with each suited to specific contexts based on the demands of accuracy and depth.*

**Key words.** *Weaknesses of Machine Translation, Strengths of Machine Translation, Contextual Limitations, Lack of Cultural Sensitivity, effective, word-by-word translation, improving coherence and flow, comparing accuracy, human translation, highly standardized content, reliable for accuracy.*

## ТОЧНОСТЬ И НЮАНСЫ В МАШИННОМ И ЧЕЛОВЕЧЕСКОМ ПЕРЕВОДЕ

**Аннотация.** *Развитие технологии машинного перевода (МП) преобразило сферу перевода, предлагая быстрые и экономичные решения для преобразования текста между языками. Хотя системы МП, такие как Google Translate и Deep L, продолжают совершенствоваться в точности, сохраняются значительные проблемы с передачей нюансов, культурного контекста и эмоционального тона, часто необходимых для истинного понимания. В этой статье рассматриваются сильные и слабые стороны как машинного, так и человеческого перевода, с упором на их способность предоставлять точные, нюансированные переводы. Машинный перевод очень эффективен для простых*

или повторяющихся текстов, превосходя по скорости и последовательности. Однако он часто испытывает трудности с пониманием контекста, идиоматическими выражениями и сложными грамматическими структурами. Напротив, переводчики-люди привносят культурную чувствительность, контекстную осведомленность и понимание тона, что позволяет им точно интерпретировать идиомы, юмор и эмоциональные тонкости. В то время как машинный перевод ценен для быстрых, общих переводов, человеческий перевод остается золотым стандартом для тонкого, высококачественного контента, такого как литература, юридические документы и маркетинг. В этой статье делается вывод о том, что как машинный, так и человеческий перевод играют существенные, взаимодополняющие роли, причем каждый из них подходит для определенных контекстов на основе требований точности и глубины.

**Ключевые слова:** Слабые стороны машинного перевода, Сильные стороны машинного перевода, Контекстуальные ограничения, Отсутствие культурной чувствительности, эффективный, пословный перевод, улучшение связности и потока, сравнение точности, человеческий перевод, высоко стандартизированный контент, надежный для точности.

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Introduction. With the rapid development of artificial intelligence, machine translation (MT) has become increasingly common for translating text from one language to another.

Platforms like Google Translate has made translation faster and more accessible. Despite these advancements, questions remain about how accurately MT conveys the meaning, context, and cultural subtleties of human language. On the other hand, human translation, driven by native fluency and cultural understanding, is known for its depth and nuance. This article explores the strengths and limitations of both approaches, examining their accuracy and the nuances they capture or miss.

### **Understanding Machine Translation: Strengths and Weaknesses**

Machine translation leverages algorithms, neural networks, and large datasets to instantly convert text into another language. Advances in neural machine translation (NMT) have made MT much more effective, as NMT enables systems to process entire sentences rather than word-by-word translation, improving coherence and flow.

#### **Strengths of Machine Translation:**

1. Speed: MT can translate vast amounts of text within seconds, making it highly useful for tasks that require quick access to information.

2. Cost-Effective: Many MT tools are free or low-cost, which makes them accessible to a wide audience.

3. Consistency: MT is reliable for maintaining consistency in repetitive terms, such as in technical documentation or standardized reports.

#### **Weaknesses of Machine Translation:**

1. Contextual Limitations: MT often fails to grasp the context fully, leading to errors in meaning, especially with homonyms, idiomatic expressions, or words with multiple meanings.

2. Lack of Cultural Sensitivity: MT cannot yet account for cultural nuances, regional dialects, or socio-cultural references that are second nature to a native speaker.

3. Difficulty with Complex Sentences: Long, compound sentences, idioms, and poetic or figurative language often result in awkward or incorrect translations, as MT lacks interpretative ability.

For example, translating the phrase “break a leg” (an English idiom meaning “good luck”) often results in a literal translation, which could be confusing or misleading if taken at face value.

This inability to recognize context makes MT unreliable in cases where accuracy and meaning are essential.

#### **The Human Touch:**

Human translation involves not only a deep understanding of language but also the ability to interpret context, emotion, and subtle meaning that machines cannot replicate.

Professional translators are skilled in capturing tone, voice, and cultural specificity, making human translation the gold standard in fields where precision matters, such as literature, law, and medicine.

#### **Strengths of Human Translation:**

1. Contextual Understanding: Human translators interpret context, idioms, and figurative language, adjusting translations to preserve meaning.

2. Cultural Sensitivity: Translators are often familiar with regional dialects, cultural references, and social norms, which are crucial for nuanced translation.

3. Emotional and Tonal Nuance: Human translators can capture emotions, humor, irony, and other elements of tone that make the text resonate with readers.

4. Quality Control: Human translators can proofread and edit their work, making adjustments to ensure clarity, coherence, and accuracy.

#### **Limitations of Human Translation.**

1. Time-Consuming: Human translation is slower and labor-intensive compared to MT, especially for large volumes of text.



2. Cost: Human translation can be expensive, particularly for specialized or lengthy documents.

3. Human Error: While less common, mistakes can occur, although human translation is typically reviewed, reducing the risk of errors.

For example, a human translator would interpret a phrase like "kick the bucket" (an idiom for "to die") appropriately, ensuring it makes sense in the target language without losing the intended meaning.

### **Accuracy: Machine vs. Human Translation**

When comparing accuracy, both MT and human translation perform well with straightforward or highly standardized content. For simple sentences, MT can often provide an accurate, usable translation. However, as text complexity and cultural specificity increase, MT tends to produce errors or awkward phrasing, making human translation more reliable for accuracy.

In technical fields like law or medicine, even small translation inaccuracies can lead to misunderstandings. Human translators are trained to navigate technical language and terminology with precision, whereas MT might misinterpret terms, especially if they have multiple meanings.

For example:

Technical Sentence: "The patient must take 20mg of medication orally twice daily."

MT: Likely to handle this accurately due to its straightforward nature.

Human translation: While similar to MT, a human translator might add nuance by using localized terminology or adjusting phrasing for clarity.

Ambiguous Sentence: "He saw the bank on the right."

MT: Might struggle with interpreting whether "bank" means a riverbank or a financial institution.

Human translation: The translator would clarify based on context, ensuring correct interpretation.

### **Nuances and Cultural Sensitivity.**

Nuance is where MT faces the most challenges. Language carries cultural meaning and emotional undertones that require context and interpretative skill. Idioms, humor, and sarcasm are often misinterpreted by MT systems, while human translators adjust language to convey intended meaning faithfully.

Consider the phrase, "It's raining cats and dogs," meaning "it's raining heavily." MT might translate it literally, confusing the reader. A human translator would understand this idiom and replace it with an equivalent phrase in the target language.

Similarly, translating jokes and humor requires cultural knowledge to find equivalents that resonate with a new audience. Human translators adapt language and references to maintain the impact of the original text, something MT is not yet equipped to handle fully.

Conclusion. While machine translation has made remarkable progress in recent years, its limitations in accuracy and nuance remain significant when compared to human translation. MT is ideal for quick, informal translations, especially for simple sentences or repetitive content.

However, for complex texts that require precision, cultural sensitivity, and emotional resonance, human translation remains superior.

In the future, improvements in artificial intelligence may allow MT to handle nuance and cultural context more effectively. However, as language is deeply tied to human experience and cultural understanding, human translators will likely remain essential for capturing the full depth and meaning of texts across languages. Both approaches have their place in today's world, and choosing between them depends on the context, purpose, and required accuracy of the translation.

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