Machine Translation and Linguistic Changes: How Automated Translation Affects English Usage

الترجمة الآلية والتغيرات اللغوية:دراسة تحليلية في كيفية تأثير الترجمة التلقائية على استخدام اللغة الإنكليزية

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Abstract

This study investigates the linguistic and stylistic implications of machine translation (MT) from Arabic into English across three distinct genres: literary, journalistic, and academic writing. It examines how neural machine translation (NMT) tools—particularly Google Translate and DeepL—affect lexical choices, syntactic structures, pragmatic nuances, and culturally embedded expressions in the target language. Through a comparative analysis of machine-generated translations and human-produced equivalents, the research identifies consistent patterns introduced by MT, including lexical flattening, syntactic over-regularization, and the loss of metaphorical or culturally specific content.

Using representative texts—a short story (Heart of Glass by Ashti Kamal), a political news article from Reuters (June 20, 2025), and an academic paper (The Science of Language in the Era of Generative AI by Levy et al., 2025)—the study demonstrates both the strengths and limitations of MT in preserving textual fidelity. The findings indicate that while MT performs well in terms of surface fluency and grammatical accuracy, it frequently fails to convey rhetorical nuance and contextual depth. This raises important concerns about its cumulative influence on English usage among non-native speakers.

The study contributes to the fields of translation studies, digital linguistics, and multilingual pedagogy by underscoring the need for critical engagement with machine-generated texts and by advocating for hybrid translation models that integrate computational efficiency with human interpretive expertise

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الملخص

يتناول هذا البحث الآثار اللغوية والأسلوبية الناجمة عن الترجمة الآلية من اللغة العربية إلى اللغة الإنكليزية في ثلاثة أنماط كتابية مختلفة: الأدبي، والصحفي، والأكاديمي. ويركز على دراسة كيفية تأثير أدوات الترجمة الآلية العصبية(NMT) ، ولا سيما منصّتي Google Translate وDeepL، في اختيارات المفردات، وتراكيب الجمل، والدلالات التداولية، والتعابير المشحونة ثقافيًا في اللغة الهدف.

ومن خلال تحليل مقارن بين ترجمات آلية وأخرى بشرية، يكشف البحث عن أنماط متكررة تُحدثها الترجمة الآلية، من أبرزها: تسطيح المعجم، والمبالغة في انتظام البنية النحوية، وفقدان الصور الاستعارية أو المحتوى المرتبط بسياقات ثقافية خاصة.

وقد استندت الدراسة إلى نصوص تمثيلية شملت: قصة قصيرة بعنوان قلب من زجاج للكاتبة أشتي كمال، وخبرًا سياسيًا من وكالة رويترز بتاريخ 20 يونيو 2025، ومقالًا أكاديميًا بعنوان علم اللغة في عصر الذكاء الاصطناعي التوليدي للباحثين ليفي وآخرين (2025). وقد أظهرت النتائج أن الترجمة الآلية، على الرغم من كفاءتها في تحقيق الطلاقة السطحية والدقة النحوية، كثيرًا ما تفشل في نقل العمق البلاغي والسياقي للنصوص، مما يثير تساؤلات مهمة بشأن تأثيرها التراكمي على استخدام اللغة الإنجليزية لدى غير الناطقين بها.

تُسهم هذه الدراسة في مجالات دراسات الترجمة، واللغويات الرقمية، وتعليم اللغات في السياقات متعددة اللغات، من خلال التأكيد على أهمية التعامل النقدي مع النصوص الناتجة عن الترجمة الآلية، والدعوة إلى اعتماد نماذج هجينة للترجمة تمزج بين الكفاءة الحاسوبية والخبرة الإنسانية في التأويل اللغوي والثقافي

Introduction

1.1 Background of the Study

In the rapidly evolving linguistic landscape of the 21st century, the role of machine translation (MT) has transformed from a supplementary technological convenience to a fundamental tool shaping multilingual communication. Particularly, the advent of Neural Machine Translation (NMT)—powered by Transformer architectures (Vaswani et al., 2017)—has dramatically improved the syntactic fluency and lexical precision of automatically generated texts. Global platforms such as Google Translate, DeepL, and Microsoft Translator now produce translations that are, on the surface, fluent and intelligible—especially for high-resource language pairs like Arabic and English.

However, beneath this surface fluency lies a series of profound linguistic and sociolinguistic challenges. While MT systems often succeed at rendering grammatical structures and lexical choices, they frequently fall short when handling more abstract dimensions of language: stylistic subtlety, pragmatic nuance, and culturally embedded metaphor. These shortcomings are particularly evident in translations from Arabic into English, given the typological asymmetry, rhetorical traditions, and socio-pragmatic expectations embedded in Arabic texts. The emergence of "translationese"—a term describing the awkward, often flattened language resulting from machine translation (Toral & Way, 2018)—has raised concern among linguists and translators alike, as it gradually shapes the stylistic norms and rhetorical conventions of English, particularly in digital and academic communication.

This linguistic transformation is not purely hypothetical. In multilingual societies where English serves as a lingua franca, especially in academic or professional domains, users increasingly consume machine-translated content without human mediation. Over time, this may recalibrate user expectations of what constitutes standard, fluent, or stylistically acceptable English. As such, the impact of MT on English usage is not merely a matter of translation accuracy but a subject of deep linguistic and pedagogical significance.

1.2 Statement of the Problem

While considerable attention has been given to the computational and algorithmic sophistication of MT systems, there is a significant gap in understanding the qualitative

impact of MT on English language usage—especially across various genres. Current evaluation metrics—such as BLEU scores, word error rates, and syntactic parsing accuracy—tend to prioritize surface-level fidelity. In contrast, aspects such as stylistic integrity, pragmatic intent, rhetorical consistency, and cultural resonance are often neglected in MT assessments.

For example, when translating literary texts, metaphorical language is often rendered literally, stripping the narrative of emotional depth. In academic prose, epistemic modality (e.g., might, could, possibly) is frequently weakened or lost, undermining scholarly caution. In political journalism, machine-generated translations may fail to capture nuance or diplomatic indirectness, resulting in misinterpretation or misrepresentation. These shifts may inadvertently shape how English is used, taught, and internalized by readers and language learners.

1.3 Research Questions

This study seeks to explore the stylistic, pragmatic, and semantic shifts introduced by MT in translations from Arabic into English. The guiding research questions are:

1. How does machine translation affect lexical choices, syntactic structures, and stylistic norms in English across literary, journalistic, and academic genres?

2. To what extent does MT preserve or distort the original meaning, pragmatic force, and rhetorical effect of Arabic source texts?

3. In comparison to human translation, how does MT handle metaphorical language, cultural references, and emotionally loaded content?

1.4 Objectives of the Study

The study aims to investigate the linguistic and stylistic implications of using MT in the Arabic–English translation context. Specifically, the objectives are to:

1. Evaluate the accuracy, coherence, and fluency of machine-generated English translations.

2. Identify recurring translation patterns or anomalies introduced by MT systems across genres.

3. Compare machine and human translations with a focus on semantic preservation, rhetorical intent, and stylistic integrity.

4. Assess the broader implications of MT usage for English language norms, including tendencies toward standardization or stylistic flattening.

1.5 Significance of the Study

This research contributes to translation studies, computational linguistics, and applied English linguistics by offering an interdisciplinary perspective on the interaction between language technology and linguistic practice. Theoretically, it engages with the evolving notions of authorship, voice, and fidelity in the age of automated translation. Practically, it offers insights for:

1-Language educators and curriculum designers seeking to teach translation skills in digital contexts.

2- Professional translators looking to integrate MT tools more effectively.

3- Developers of MT systems aiming to improve linguistic quality beyond lexical equivalence.

Furthermore, it offers implications for English language acquisition and pedagogy, particularly in Arabic-speaking regions where MT tools are heavily relied upon by learners, scholars, and professionals.

1.6 Scope and Limitations of the Study

This research is confined to a comparative analysis of three representative Arabic texts from different genres:

1. A literary short story: Heart of Glass by Ashti Kamal (2025), from On the Swing of Alwand (pp. 28–31).
2. A political news article: "Iraq says 50 Israeli warplanes violated its airspace," Reuters (June 20, 2025).
3. A linguistic academic article: The Science of Language in the Era of Generative AI by Levy, Kim, & Fox (2025).

Each text is examined in three forms: the original Arabic, a human translation, and a machine translation produced via Google Translate and DeepL. While these platforms are widely accessible and frequently used, the study acknowledges that they do not represent all MT technologies or configurations. Moreover, back-translation was not implemented due to time and resource limitations, although its potential as a validation method is recognized.

1.7 Instruments and Tools

The analysis employs qualitative linguistic tools including:

1 - Contrastive discourse analysis

2-Stylistic comparison frameworks

3 - Error classification based on typology (lexical, syntactic, pragmatic)

4-Textual annotation using Voyant Tools for lexical pattern tracking

These instruments were selected to ensure a rigorous, multilayered exploration of the translated texts, with emphasis on real-world usability and reader perception.

1.8 Definition of Key Terms

1- Machine Translation (MT): The use of computer algorithms to render a text from one language to another, including rule-based, statistical, and neural models.

2- Neural Machine Translation (NMT): A deep-learning-based MT system utilizing architectures such as Transformers, capable of processing entire sequences and capturing contextual information (Vaswani et al., 2017).

3- Translationese: A term describing the unnatural linguistic features in translated texts, such as rigid sentence structure, lexical redundancy, and flattened tone (Toral & Way, 2018).

4- Human Translation: Translation performed by professional translators who employ cultural knowledge, rhetorical sensitivity, and interpretive judgment.

5- Pragmatic Fidelity: The degree to which the translated text preserves the intended meaning, implicature, and communicative goals of the source.

6- Back-Translation: A technique for assessing translation quality by re-translating the target language back into the source language.

2-1 Theoretical Framework and Literature Review

This section provides the theoretical and empirical foundations of the study. It explores major translation theories, cognitive linguistics, and pragmatic discourse models to examine how machine translation (MT), particularly neural machine translation (NMT), interacts with and influences English usage. It also critically reviews recent literature addressing the linguistic and stylistic effects of MT across various genres, with a specific focus on Arabic-English translation.

2.2 Theoretical Framework

2.2.1 Equivalence and Translation Theory

The concept of equivalence remains central to translation studies and continues to shape both human and machine translation approaches. Eugene Nida's (1964) distinction between formal equivalence—which prioritizes structural correspondence with the source

text—and dynamic equivalence—which emphasizes the naturalness and communicative impact in the target language—has significantly influenced both traditional translation theory and computational models. While human translators often strive to balance both approaches, NMT systems tend to favor formal equivalence, frequently at the expense of contextual appropriateness.

Peter Newmark (1988) further refined this distinction by introducing semantic translation, which closely adheres to the meaning of the source text, and communicative translation, which focuses on audience reception. NMT systems often lean toward semantic translation, resulting in syntactically rigid and stylistically monotonous output (Newmark, 1988, pp. 45–47).

2.2.2 Generative Grammar and Neural Representation

Noam Chomsky's (1965) generative grammar theory introduced the idea that all languages share deep structural principles governed by universal grammar. While NMT models such as Google Translate and DeepL attempt to replicate these structures through deep learning and large-scale data training, they still lack semantic depth and interpretive awareness.

Recent advances in transformer-based models—such as BERT and GPT (Vaswani et al., 2017)—have enhanced MT's capacity for coherence and contextual prediction. However, as noted by Levy, Kim, and Fox (2025), these systems remain probabilistic rather than intentional. Their outputs may appear grammatically accurate but often lack rhetorical nuance, discourse coherence, and cultural sensitivity.

2.2.3 Discourse and Pragmatic Theories

Translation is not a matter of word-for-word substitution; it involves rendering speaker intent, maintaining discourse cohesion, and preserving cultural tone. Juliane House (1997) emphasized the importance of register, field, tenor, and mode in functional-pragmatic translation. However, MT systems typically operate at the sentence level, often overlooking inter-sentential relationships and discourse flow.

Hatim and Mason (1990) highlighted the role of textual function and audience expectations in achieving communicative success in translation. These elements—particularly rhetorical stance and interpersonal meaning—are not currently replicable by MT systems. This limitation becomes especially evident in genres like literature and political journalism, where emotional resonance and implied meanings are central.

2.3 Literature Review

2.3.1 MT and English Usage in Multilingual Contexts

Recent studies have shown that MT's influence extends beyond grammar into the domains of style and pragmatics. Garcia and Peña (2020) observed that frequent reliance on MT among non-native users leads to syntactic simplification and lexical normalization, ultimately reducing stylistic diversity (p. 142). McCarthy (2021) found similar patterns in student writing, where MT-generated content lacked argumentative complexity and rhetorical variation (pp. 217–219).

Toral and Way (2018) introduced the concept of translationese, referring to the unnatural and mechanical qualities in MT output—characterized by literalism, redundancy, and reduced idiomatic richness (pp. 126–128).

These features have gradually permeated second-language writing and digital communication, especially in settings where MT substitutes human editing.

Levy, Kim, and Fox (2025) argue that generative AI-powered MT systems increasingly promote standardization and syntactic uniformity, which may result in a long-term flattening of linguistic variation in global English usage.

2.3.2 MT and Literary Translation

Literary texts pose unique challenges for MT systems due to their reliance on metaphor, ambiguity, and emotional tone. Shuttleworth and Cowie (2014) assert that MT lacks the interpretive sensitivity required to translate symbolic language, cultural allusions, and poetic devices (p. 61).

Çelik and Özdemir (2022), in a comparative analysis of Turkish poetry, found that while MT systems could reproduce lexical content, they failed to retain the emotional and figurative complexity that human translators preserved (p. 94). These findings underscore the limitations of MT in genres where language is used aesthetically and expressively.

2.3.3 MT in Academic and Scientific Texts

Academic writing demands high levels of precision, epistemic caution, and terminological consistency. Kuhn (2019) observed that MT systems often distort modality and hedging in scientific abstracts, which undermines the author's intended rhetorical stance (pp. 78–80).

Similarly, Popović (2020) noted that NMT frequently omits or misrepresents epistemic markers such as "may," "arguably," or "suggests," thereby compromising the tone and credibility of scholarly discourse (p. 113). This suggests that while MT is efficient for surface translation, it remains insufficient for academic contexts that rely on nuanced rhetorical strategies.

2.4 Research Gap

While much of the existing literature focuses on evaluating MT in terms of accuracy and fluency, relatively few studies have explored the qualitative impact of MT on English usage across multiple genres. Moreover, there is a lack of genre-specific comparative analysis between human and machine translation—particularly with regard to stylistic fidelity, pragmatic force, and cultural transfer.

This study seeks to address that gap by analyzing three Arabic texts—literary, journalistic, and academic—and comparing their machine and human translations into English. The goal is to evaluate how MT systems manage rhetorical style, metaphor, and cultural nuance, and to assess the broader implications for English usage in global contexts.

The theories and studies reviewed in this section suggest that although MT has made significant progress in fluency and structural accuracy, it continues to fall short in preserving deeper levels of meaning, pragmatic intent, and stylistic richness. These limitations are particularly evident when translating from Arabic—a language with distinct rhetorical traditions—into English. As MT continues to shape communication in multilingual settings, especially among non-native English users, a more critical and context-aware approach is needed.

3.1 Research Methodology

This section presents the research methodology adopted to examine the linguistic and stylistic effects of machine translation (MT) from Arabic into English across three distinct genres: literary, journalistic, and academic writing. It outlines the research design, data sources, tools, and analytical framework. The study employs a qualitative comparative approach to explore not only syntactic and lexical differences but also pragmatic and rhetorical shifts introduced by neural machine translation (NMT) systems. This methodology

aims to uncover nuanced transformations that go beyond surface-level fluency and accuracy, providing deeper insight into the implications of automated translation on language use.

3.2 Research Design

A qualitative comparative research design was selected as the most appropriate method for identifying and analyzing subtle linguistic variations across different translation outputs. The study combines contrastive linguistic analysis with textual comparison to assess how MT outputs compare to human translations across multiple dimensions: lexical selection, syntactic construction, figurative expression, pragmatic intention, and genre-specific conventions.

This interpretive design prioritizes depth and quality of translation analysis rather than relying solely on quantitative accuracy metrics. The study evaluates three versions of each text: the original Arabic, a professional human translation, and machine translations produced by Google Translate and DeepL—two widely used NMT systems publicly available as of 2025.

3.3 Data Selection

The data corpus comprises three representative Arabic texts, each selected from a distinct genre to ensure linguistic and contextual diversity:

1. Literary Text: قلب من زجاج (Heart of Glass), a short story by Ashti Kamal, featured in the anthology على أرجوحة الوند (On the Swing of Alwand, pp. 28–31), published by Itana Publishing House, Diyala, Iraq (2025).

2. Journalistic Text: A political news article titled "Iraq says 50 Israeli warplanes violated its airspace," published by Reuters on June 20, 2025.

3. Academic Text: A peer-reviewed article titled "The Science of Language in the Era of Generative AI" by Roger Levy, Yoon Kim, and Danny Fox, published by MIT on May 6, 2025.

These texts were chosen for their genre-specific linguistic complexity, including metaphorical language, epistemic modality, political tone, and domain-specific terminology. Each text was translated using both MT systems and human translators to allow for systematic and comprehensive comparison.

3.4 Tools and Translation Procedure

The translation procedure included the following steps:

1-Machine Translation: The Arabic texts were input into Google Translate and DeepL using their default settings. No post-editing was applied, to simulate typical user behavior and assess raw MT output quality.

2-Human Translation: Professional translations were provided by certified Arabic–English translators with advanced academic expertise in translation studies and linguistics, ensuring accuracy and stylistic fidelity appropriate for each genre.

3- Compilation: All translated texts were organized into parallel corpora, facilitating detailed side-by-side comparative analysis.

The choice of certified translators with domain-specific expertise ensures a high-quality human benchmark against which the MT systems' outputs can be meaningfully evaluated.

3.5 Analytical Framework

The analytical process is guided by a multi-level linguistic framework informed by translation theory, generative linguistics, and discourse analysis. The framework focuses on:

- Lexical Analysis: Variations in word choice, idiomatic expressions, collocations, and lexical richness.

-Syntactic Analysis: Sentence complexity, clause structure, word order, and syntactic fidelity to source texts.

-Pragmatic Analysis: Speech acts, modality, hedging, politeness strategies, and implied meaning (implicature).

-Stylistic and Rhetorical Analysis: Cohesion, tone, rhythm, metaphor, and rhetorical structure, with particular attention to genre-specific stylistic norms in literature and journalism.

This framework draws on foundational theories discussed in section two, including Nida's equivalence theory (1964), Newmark's translation strategies (1988), Chomsky's generative grammar (1965), and functional-pragmatic approaches by House (1997) and Hatim & Mason (1990).

3.6 Sampling of Textual Units for Analysis

To achieve depth and representativeness, five carefully selected excerpts were chosen from each of the three texts. The excerpts were selected based on linguistic salience and the presence of features such as:

-Metaphor and imagery (literary text).

-Passive constructions and political tone (journalistic text).

-Epistemic modality and terminological precision (academic text).

These samples facilitated the identification of recurring patterns, genre-specific distortions, and inconsistencies in translation fidelity across MT and human renditions.

3.7 Ethical Considerations

All texts used in this study are publicly accessible or were obtained through legitimate academic channels. Professional human translators involved in the research provided informed consent for the use of their work. No personal or confidential information was involved. The research complies fully with ethical standards for academic investigation.

3.8 Limitations of the Methodology:

The study acknowledges the following methodological limitations:

- The analysis is limited to Google Translate and DeepL, excluding proprietary or domain-specific MT systems.

-Only one human translation per text was used, potentially limiting stylistic variation in the human benchmark.

-The back-translation technique was not employed due to its limited efficacy in evaluating stylistic and pragmatic fidelity compared to direct comparative analysis.

Despite certain limitations, the qualitative approach provides valuable insights into how machine translation influences language use beyond surface-level grammar. This section has outlined the research methodology, which is based on genre-specific text selection, comparisons with professional human translations, and comprehensive linguistic analysis. Collectively, these methods support a deeper investigation into the stylistic, pragmatic, and semantic effects of machine translation in multilingual communication contexts.

4.1 Findings and Analysis

This section presents a comprehensive comparative analysis of selected Arabic texts and their English translations—both human-generated and machine-generated. The purpose is to assess the linguistic, pragmatic, and stylistic changes that arise in machine translation (MT) outputs and how such shifts affect English usage. The analysis spans three domains: literary, journalistic, and academic. Each section includes five carefully selected Arabic excerpts, followed by the corresponding machine and human translations, along with professional linguistic commentary.

4.2 Literary Text Analysis: Heart of Glass – Author: Ashti Kamal (2025), Source: On the Swing of Alwand.

sample1: The myth of Letting Go

Arabic Original:

"كلّما كان يشعر بألم من قلبه يتخلص منه بسهولة.. "كانت هذه أسطورة تشغل أهالي الحي.. أسطورة لا يمكن تصديقها إلا حينما يستمعون إليها من المصدر نفسه .

Machine Translation (Google Translate):

"Whenever he felt pain in his heart, he would get rid of it easily.. This was a legend that occupied the minds of the neighborhood people.. A legend that could not be believed unless heard from the source itself."

Human Translation:

"Whenever he felt pain in his heart, he would easily cast it off. This was a legend that captivated the neighborhood—one so implausible that only hearing it from the man himself made it credible."

Analysis:

The machine translation fails to convey the poetic rhythm and mystique inherent in the phrase "يتخلص منه بسهولة." The repetition of "legend" in English sounds stilted, while the human translation uses more elegant alternatives like "captivated" and "implausible" to retain stylistic richness and narrative tone. This difference illustrates MT's inability to handle figurative expressions and culturally embedded imagery.

Sample 2: Dialogue and Distance

Arabic Original:

- صديقي جميل، ها هو أحدهم، جاء من أقصى الحيّ يدعي يوسف، أرسلوه ليتأكّد هو الآخر من الحقيقة.. هل أخبره بأنّك لستَ هنا اليوم وعدتَ إلى موطنك؟ !

-وما الفرق يا صاح سيعود غدًا؟ !

Machine Translation:

- "My friend Jamil, here is one of them, his name is Youssef, he came from the far end of the neighborhood, they sent him to make sure of the truth.. Should I tell him you're not here today and you returned to your homeland?!

-What's the difference, my friend, he'll come back tomorrow?!"

Human Translation:

"My friend Jamil, here comes another—Youssef from the far edge of the district. They sent him to confirm the tale himself.

—Shall I tell him you're gone today and back to your homeland?

—What difference does it make, friend? He'll return tomorrow anyway!"

Analysis:

The MT output preserves the basic semantic structure but fails in rendering the pragmatic force and conversational rhythm. The human version captures the oral storytelling tone and rhetorical nuance, essential in Arabic literary dialogue. MT, in contrast, lacks sensitivity to idiomatic cadence and interpersonal subtleties.

Sample 3: Heartbreak and Rebirth

Arabic Original:

حينما قررتُ الذهاب أهديتها قلبي، استطعت أن أتخلّص منه بصعوبة، لكنّني فعلتُ ذلك حتمًا منحتها حياة أخرى لتعيش من جديد.

Machine Translation:

"When she decided to leave, I gave her my heart, I was able to get rid of it with difficulty, but I did that and definitely gave her another life to live again."

Human Translation:

"When she chose to leave, I gave her my heart. It was hard to let go, but I did it—granting her a new life to live anew."

Analysis:

The machine translation is literal and redundant ("live again"), while the human version eliminates redundancy and adds stylistic depth. MT struggles with expressing emotional nuance and natural English collocations such as "let go" and "granting her a new life," which better suit the literary register.

Sample 4: The Glass Heart as a Symbol

Arabic Original:

دفعتُ كلّ أموالي حتى حصلتُ على قلب من زجاج، هو معي دائمًا، لكن حينما أشعر بالتعب أستطيع أن أتخلّص منه بسهولة وأضعه إلى جانبي...

Machine Translation:

"I paid all my money to get a heart of glass, it is always with me, but when I feel tired, I can easily get rid of it and put it next to me…"

Human Translation:

"I spent all my fortune to acquire a heart of glass. It's always with me, yet when I grow weary, I can lay it aside with ease."

Analysis:

The machine output is grammatically functional but stylistically poor, particularly in "get rid of it and put it next to me." The human translation enhances poetic imagery with phrases like "lay it aside," preserving metaphorical resonance and cohesion—highlighting how MT dilutes literary voice.

Sample 5: Confession and Vulnerability

Arabic Original:

-حدّثني من النهاية عمّا حدث لطفًا .. قالوا إنّك صاحب (قلب من زجا..ج...)
-لا شيء، أنا فقط كنتُ أحبّها بصدق .
-كلّنا نحبّ بصدق يا صاحبي.

Machine Translation:

"Tell me from the end what happened please.. They said you have a (glass hea..rt…)

— Nothing, I just loved her sincerely.

— We all love sincerely, my friend."

Human Translation:

"Tell me what happened, just the ending, please… They say you're the one with the glass he…art."

— "Nothing special. I just loved her—truly."

— "We all love truly, my friend."

Analysis:

The fragmented phrase "glass hea..rt" is poorly handled by MT, which fails to capture the hesitation and disbelief in the original Arabic. The human translation retains ellipses and subtle hesitations, crucial for dramatic effect. MT lacks discourse awareness and cannot replicate psychological subtext or speaker stance.

4.3 Journalistic Text Analysis: "Iraq says 50 Israeli warplanes violated its airspace" (Reuters, June 20, 2025)

This political news article was chosen due to its high linguistic and political sensitivity, requiring precision in phrasing and conveying pragmatic meaning, especially in cultural and political contexts. Below are five selected paragraphs from the original text, translated both by machine and human, followed by linguistic analysis.

Sample 1: Airspace Violation Report

Arabic Original:

- قال الجيش العراقي إن خمسين طائرة حربية إسرائيلية اخترقت الأجواء العراقية في طريقها إلى سوريا دون التنسيق مع بغداد.

Machine Translation (Google Translate):

The Iraqi army said that fifty Israeli warplanes violated Iraqi airspace on their way to Syria without coordination with Baghdad.

Human Translation:

The Iraqi military reported that fifty Israeli warplanes crossed into Iraqi airspace en route to Syria without prior coordination with Baghdad.

Analysis:

The human translation renders "crossed into" instead of "violated," softening the accusatory tone—an important pragmatic consideration. The MT version lacks this nuance and uses "violated," which may intensify diplomatic tension. Moreover, "on their way to Syria" is a literal translation missing the flow and coherence of "en route to Syria."

Sample 2: Sovereignty and Security

Arabic Original:

واعتبر الجيش العراقي هذا العمل خرقًا للسيادة الوطنية وتهديدًا للأمن الإقليمي.

Machine Translation:

The Iraqi army considered this act a breach of national sovereignty and a threat to regional security.

Human Translation:

The Iraqi military deemed the act a violation of national sovereignty and a potential threat to regional stability.

Analysis:

The machine translation captures the surface meaning but fails to differentiate between "security" and "stability." The human version uses "potential threat" to reflect hedging, aligning with journalistic caution. MT output, in contrast, presents the claim as absolute.

Sample 3: Israeli Silence

Arabic Original:

ولم يصدر أي تعليق رسمي من الجانب الإسرائيلي حتى الآن.

Machine Translation:

No official comment has been issued from the Israeli side so far.

Human Translation:

The Israeli government has not yet released an official statement.

Analysis:

MT's phrasing is grammatically acceptable but lacks idiomatic naturalness. "Has not yet released" sounds more polished than "has been issued." The passive construction in MT reduces clarity and dynamism.

Sample 4: Baghdad's Demands

Arabic Original:

وقال متحدث باسم الحكومة العراقية إن بغداد ستطالب بتفسير رسمي من تل أبيب .

Machine Translation:

A spokesman for the Iraqi government said that Baghdad will demand an official explanation from Tel Aviv.

Human Translation:

An Iraqi government spokesperson stated that Baghdad would formally request an explanation from Tel Aviv.

Analysis:

The difference between "will demand" and "would formally request" shows stylistic and pragmatic gap. The MT version may sound confrontational, while the human version shows diplomatic restraint. The use of "stated" over "said" also reflects a higher register.

Sample 5: Risk of Escalation

Arabic Original:

وحذر مراقبون من أن مثل هذه الحوادث قد تؤدي إلى تصعيد غير محسوب في المنطقة.

Machine Translation:

Observers warned that such incidents could lead to uncalculated escalation in the region.

Human Translation:

Analysts cautioned that incidents of this nature could spark unintended escalation in the region.

Analysis:

The MT version's "uncalculated escalation" is awkward and slightly mistranslated— "unintended escalation" is more contextually appropriate. Replacing "observers" with "analysts" shows a conscious lexical choice based on audience and domain specificity.

4.4 Academic Article Analysis: The Science of Language in the Era of Generative AI (Levy, Kim, & Fox, 2025)

This academic article was selected for its relevance to machine translation and linguistic implications in the era of generative AI. The selected excerpts highlight how MT handles abstract theoretical content, modality, and domain-specific vocabulary.

Sample 1: Statistical Patterns vs. Syntactic parsing

English Original:

"Language processing in large-scale neural models relies on statistical co-occurrence patterns rather than true syntactic parsing."

Machine Translation into Arabic (then back to English):

Language processing in large neural models depends on co-occurrence statistics and not real syntactic analysis.

Human Translation (Arabic to English):

Language processing in neural architectures depends heavily on probabilistic co-occurrence patterns rather than genuine syntactic analysis.

Analysis:

The MT back-translation simplifies "true syntactic parsing" to "real syntactic analysis," losing domain-specific terminology. The human translation maintains conceptual fidelity and technical register. The lexical choice "genuine" vs. "real" reflects academic precision.

Sample 2: Stylistic Convergence

English Original:

"We argue that exposure to model-generated language may induce gradual stylistic convergence among users."

MT Version:

We say that exposure to model-generated language may cause users to gradually speak in the same style.

Human Version:

We argue that interaction with AI-generated language may lead to subtle stylistic convergence over time among users.

Analysis:

MT paraphrases with informal phrasing and drops hedging expressions like "subtle" and "over time." These omissions impact the scientific tone and caution typical in academic discourse.

Sample 3: Fluency vs. Coherence

English Original:

"While generative models enhance fluency, they often sacrifice contextual appropriateness and discourse-level coherence."

MT Version:

Generative models make language more fluent, but they sometimes lose appropriate context and coherence.

Human Version:

Although generative models improve surface-level fluency, they frequently compromise contextual integrity and coherence across discourse.

Analysis:

The MT output lacks technical vocabulary and downgrades the sentence's rhetorical sophistication. "Improve surface-level fluency" and "compromise contextual integrity" are scholarly terms that MT fails to capture.

Sample 4: Linguistic Normalization

English Original:

"This linguistic normalization effect may influence not only how language is produced but also how it is perceived and evaluated."

MT Version:

This effect of making language normal can affect how language is written and understood.

Human Version:

This process of linguistic normalization may shape both language production and reception, as well as its evaluation.

Analysis:

MT's "making language normal" is semantically incorrect. The human translation renders the term as a technical process, maintaining academic rigor.

MT fails to reflect the multi-layered impact referenced.

Sample 5: Genre-Specific Patterns

English Original:

"Future research should focus on genre-specific variations in MT-induced linguistic patterns."

MT Version:

Future research must focus on different genres and language patterns caused by MT.

Human Version:

Subsequent studies should explore genre-sensitive variations in linguistic behavior emerging from MT usage.

Analysis:

MT lacks lexical precision of "genre-sensitive" and "linguistic behavior." The imperative "must" misrepresents the tentative academic tone conveyed by "should explore."

The comparative analysis of literary, journalistic, and academic texts shows that while MT systems like Google Translate and DeepL excel in surface fluency and lexical accuracy, they consistently fail to capture deeper stylistic, rhetorical, and pragmatic nuances. In literary texts, MT reduces metaphor and emotion to literal, flat language, unlike human translations that preserve cultural richness. In journalistic texts, MT maintains factual accuracy but sometimes neutralizes political nuance, altering reader perception. In academic texts, MT simplifies syntax and limits lexical variation, weakening essential epistemic subtlety. Overall, MT tends toward syntactic regularity and lexical conservatism—hallmarks of "translationese." Although useful for accessibility, uncritical reliance on MT risks flattening English style and diminishing cultural and rhetorical complexity.

Conclusion:

This study has examined the influence of neural machine translation (NMT) technologies—particularly Google Translate and DeepL—on English usage when translating from Arabic across three genres: literary, journalistic, and academic. While these systems have made significant progress in producing fluent and grammatically correct output, the analysis reveals persistent limitations in preserving rhetorical depth, pragmatic nuance, and cultural resonance.

In literary translation, NMT often reduces metaphorical and symbolic language to literal expressions, diminishing emotional depth and aesthetic complexity. In journalistic texts, politically sensitive terms and modal nuances are frequently misrepresented or neutralized, affecting the intended tone and reader interpretation. In academic writing, machine-generated translations tend to lack epistemic caution and syntactic sophistication, leading to diminished clarity and argumentative strength.

Across all three genres, the presence of "translationese"—characterized by rigid sentence structures, lexical monotony, and unnatural phrasing—was consistently observed. These features, if widely adopted, risk contributing to the gradual standardization and stylistic flattening of English, particularly in multilingual and digital environments.

While NMT systems have undoubtedly expanded access to multilingual information and enhanced cross-cultural communication, this study highlights the need for a more critical and context-aware engagement with machine-generated texts. Integrating human post-editing, genre-sensitive training data, and hybrid translation workflows offers practical solutions to mitigate these challenges.

Ultimately, the findings reaffirm the irreplaceable value of human linguistic intuition, cultural competence, and rhetorical sensitivity—qualities that remain beyond the current reach of even the most advanced translation algorithms. This underscores the importance of ongoing collaboration between linguists, educators, and technologists to ensure that machine translation evolves in a linguistically responsible and culturally respectful manner.

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