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Bridging the Gap: Pragmatic and Cultural Challenges in Machine Translation

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Abstract This study investigates the pragmatic and cultural limitations of machine translation (MT) systems in rendering Arabic texts into English, particularly in legal, religious, and historical genres. Drawing on Sharifian's Cultural Schema Theory, Mey's pragmeme framework, and Al Sharoufi's concept of culturemes, the research applies a multi-dimensional evaluation to assess MT outputs against expert human translations. The study uncovers recurring issues of pragmatic misalignment, cultural distortion, and semantic flattening in MT using qualitative comparative analysis of selected Arabic source texts. Findings reveal that MT consistently misrepresents key cultural expressions and speech acts, producing syntactically correct translations but pragmatically and ideologically inaccurate. Errors were especially pronounced in formulaic religious declarations, legal terminology, and metaphorical historical discourse. The study concludes that current MT systems lack the cognitive and sociocultural sensitivity necessary for context-rich translations. It advocates for a hybrid model that combines machine efficiency with human interpretive insight. It calls for future research into genre-expanding corpora and cross-platform evaluations to enhance translation quality.

Keywords: *Machine translation, Cultural pragmatics, Translation quality, Idiomatic expression, Linguistic analysis*

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1. Introduction

Over the years, Google Translate, Microsoft Translator, and IBM Watson Language Translator have made translating content quicker and more accurate from a linguistic perspective (Slosarek et al., 2024). Expertise in these tools is now spreading to two-sided situations, making the difference between human and machine translations (MT) less noticeable. However, MT systems now do better with syntax and vocabulary, but their ability to convey meaning in daily and culturally rich situations remains a significant challenge (Ennouari & Houssaini, 2024). In addition, using English and Arabic on the same signs can lead to funny results when the Arabic translation is not quite right. They demonstrate that mistakes made by MT can bemuse and disorient listeners, revealing that important pragmatic and cultural messages are being missed (Lesmana, 2021).

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Naturally, translation is not only done by computers; it benefits from understanding language in all its social, cultural, and mental contexts. Here, the study explores meaning through what is said, the environment, and our intentions (Kurniawan, 2025). Pragmatics enables translators to capture speaker intent, cultural nuance, emotional tone, and social appropriateness (Ibrahim & Muzir, 2023). Naturally, translation is not only done by computers; it benefits from an understanding of the language in all its social, cultural, and mental contexts. Here, we explore meaning through what is said, the environment, and our intentions (Kurmanova et al., 2023). Modern scientists have realized that Turkic translations of religious concepts from Arabic reveal strong links among language, belief, and national identity (Kulmanova et al., 2022). Previous studies, such as Artanti and Rahayu (2024) and Tahseen and Hussein (2024), reflect that most MT systems analyze information only at a sentence level and lack an awareness of the complete context. As a result, many misunderstandings occur when idioms, metaphors, religious words, and cultural practices are translated. In parallel to these theories, Pishghadam (2013), Pishghadam, Ebrahimi, and Derakhshan (2020), and Pishghadam, Ebrahimi, Naji Meidani, et al. (2020) introduced the concept of cultuling, which refers to culturally loaded linguistic units that reflect a community's social beliefs and values embedded in everyday language. MT systems, however, often fail to capture these deeply rooted cultural memes, leading to semantic and pragmatic distortion in translation. Several recent studies have pointed out these weaknesses. To illustrate, Mukherjee et al. (2024) point out that using MT on poetry, legal texts, religious writing, and movie conversations often leads to an unclear or unacceptable result. According to Hameed and Al-Khateeb (2024), translations from structurally different pairs like Arabic to English or Thai to English tend to have more errors that hide the original meaning when undertaken word by word. Besides, Saswati (2024) mentions that MT may prioritize every word-to-word matching, resulting in texts that seem correct, lack the needed meaning, or give wrong information.

Unlike other studies, this study takes theory further and examines source texts from Arabic using a detailed, pragmatic approach. It combines practical case studies with explanations from linguistics, narrowing the divide between theoretical criticism and the regular use of MT. It uses an interesting method for testing, using cultural schemata, pragmemes, and culturemes as standards to assess whether MT works well with legally and culturally sensitive messages. This study addresses these issues by studying how using pragmatic and cultural frameworks supports better MT quality. It shows how translation models using pragmemes, culturemes, and cultural schema theory are important for understanding how meaning is shaped in different cultures.

The study is structured around the following research questions:

- How does the sentence-bound in-out linguistic model limit MT’s ability to produce pragmatically appropriate target texts (TTs)?
- In what ways does the one-time, context-dependent nature of real-life events pose challenges for MT systems?
- Can MT systems be trained or modified to account for cultural and social dimensions of language use, enabling more human-like and context-sensitive translations?

By addressing these questions, this study aims to uncover strategies for bridging the gap between machine-generated and human translations, particularly in domains where context, culture, and communicative purpose are critical. Ultimately, we advocate for a hybrid approach, where machine efficiency is complemented by human judgment, thus paving the way for more accurate and culturally respectful translations in an increasingly interconnected world.

2. Theoretical Framework

The theoretical framework for this study is built on an interdisciplinary foundation. It integrates key concepts from cultural linguistics, pragmatics, and translation studies to evaluate the effectiveness of MT in rendering culturally and contextually rich texts. The Cultural Schema Theory by Sharifian (2017) is a central part of this framework and explains that cultural knowledge is needed to understand language. It identifies three linked levels: the conceptual, the linguistic, and the social, each through which individuals form and use sense. These layers are used when people communicate in real life and are key to showing cultural mindfulness. Since MT rarely uses schema knowledge, the results are

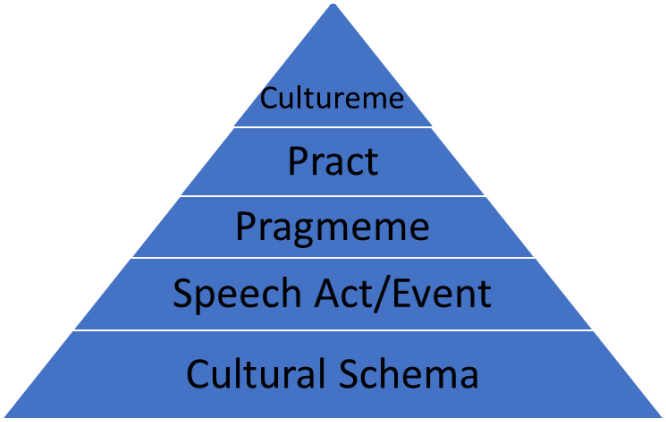
insensitive or lack important meaning, especially for religious, legal, or historical texts (Rashed Alkatheery, 2023). Several previous works, one being Alharahsheh et al. (2024), have demonstrated that MT finds it challenging to capture cultural knowledge, mainly in Arabic, highlighting the role of schema analysis still further. A recent study found that MT struggles with cultural connotations in Arabic literary texts, reinforcing the need for cultural schema and pragmeme-based evaluation (Al-Kaabi et al., 2024).

In addition, Mey (2010) introduces the idea of pragmemes, describing how context determines general communication activity. Speaker intent, listener understanding, and suitability for conversation are crucial to pragmemes, while these elements generally go unacknowledged in MT systems that only deal with individual sentences (Valdeón, 2023). Experts have demonstrated how pragmemes help look at online discourse, especially when usual translation is insufficient (Mahniza et al., 2020). It has been proven in studies by Rebechi et al. (2024) that machines often have trouble interpreting idioms correctly, mainly in languages that rely strongly on context, which human translators do much better. Using Baker's framework, recent findings show that preserving pragmatic meaning and aesthetic value is essential in idiom translation, reinforcing the role of cultureme-aware strategies in MT (Alabdali, 2020).

This way of building the framework is extended by Al Sharoufi (2020), who explains the use of culturemes, words, or expressions that express the values, beliefs, and traditions typical of a particular culture. Prior studies, for example, that by Al-Juburi and Hamood (2024), reveal that understanding terms from religious oaths, marriage contracts, and socio-political declarations in Arabic is greatly affected by culturemes. A high level of cultural knowledge is essential to translate these parts correctly, which machines often lack. Ashuja'a et al. (2019) have observed that translating cultural elements of political and legal dialogue is complex for machines because specific cultural terms cannot be accurately translated. A recent study emphasized that translating English idioms into Arabic, especially in political discourse, requires cultural awareness and contextual adaptation to meet audience expectations. Framed by Skopos Theory, the findings support the need for function-focused translation strategies over literal rendering, reinforcing this study's emphasis on pragmeme and cultureme sensitivity (Mohammed & Al-Azzawi, 2025). Another recent AI-based study on Arabic-English proverb translation highlighted how subtle cultural and religious nuances affect equivalence, reinforcing the need for intercultural pragmatic awareness in MT systems (Hamdi et al., 2023). Research on MT of Javanese cultural texts revealed frequent lexical errors, particularly calques and false friends, caused by cultural-context mismatches, underscoring the need for culturally informed, human-guided interpretation rooted in schema theory (Sholikhah & Indah, 2021). The study applies this concept to check if MT maintains cultural accuracy and avoids extra simplification. Figure 1 illustrates the hierarchical relationship among key concepts in this framework: cultural schema, speech acts, pragmemes, practices, and cultures. It demonstrates how abstract cultural cognition becomes progressively embedded in context-specific linguistic expression. This visual model helps conceptualize the pathway from generalized cultural understanding to specific translation decisions.

Figure 1

Hierarchical Model Illustrating the Relationship between Cultural Schema, Speech Act/Event, Pragmeme, Pract, and Cultureme



Besides working with these language-based elements, the research looks at Meschonnic's view of translation as a process that goes beyond mechanically changing words. To them, successful translation demands attention to how theory meets practical translation. As Meschonnic articulates,

> a practice is not a practice if it is not reflective or thoughtful; it is just a hesitant repetition of pre-existing codes … and conversely, a translation theory that is also not a reflection of a particular practice would just be linguistics applied to discourse, that is to say, non-thinking. (Kadiu, 2019, p. 87).

This statement underscores the inseparability of theory and practice and the idea that translation devoid of reflection fails to engage with the source text's deeper linguistic and cultural nuances. Accordingly, Meschonnic's theory critiques non-reflexive translation practices for producing mechanical, lifeless renditions that ignore tone, ideology, and emotional resonance (Bielsa, 2024). Recent research by Saehu and Hkikmat (2025) shows that machines can give the impression of being grammatically correct; even users are unhappy with the lack of emotional words and cultural aspects.

By bringing together these theories, the present study creates a framework to assess if machine translation outputs are appropriate in different settings, sensitive to cultural contexts, and meet users' expectations. Here, the research focuses on more aspects than earlier studies, which used accuracy and smoothness as their guiding criteria. It combines the way messages are used, considerations of culture, and how memories and knowledge structures connect to look at legal, historical, and religious translations. As a result of this theory, shortcomings in MT systems are revealed, which directs the way future translation models should be designed.

3. Methodology

This study employs a qualitative, comparative design based on pragmatics and cultural linguistics. In this field, we rely on the Cultural Schema Theory from Sharifian (2017), the theory of pragmemes by Mey (2010), and Al Sharoufi's (2020) notion of culturemes. Thanks to these models, the study can evaluate MTs by testing their practical use, deep understanding of culture, and faithfulness to the situation.

3.1. Corpus Selection

There are three Arabic source texts (STs) in the data corpus, chosen for their high sensitivity to context and for representing four genres. Every one of these texts belongs to a separate subject area and so needs different attention during translation:

- A constitutional oath excerpt from the Kuwaiti National Assembly, reflecting formal legal language;
- A notarized Islamic marriage contract from Morocco, embodying classical legal Arabic with formulaic religious expressions rooted in Qur'anic discourse;
- A university lecture passage on the French Revolution, rich in metaphor and idiomatic expressions, drawn from educational discourse in a Middle Eastern humanities faculty.

Each text was selected to reflect distinct genre norms and linguistic registers, presenting unique challenges for machine translation systems. The data spans a range of approximately 10 to 83 Arabic words per passage, sufficient to support qualitative, line-by-line comparative analysis against professional human translations. These lengths are reflective of real-world translation segments and allow for a close evaluation of how MT systems preserve (or fail to preserve) meaning in high-stakes contexts.

3.2. Translation Tools and Reference Standards

The selected texts' translations were generated using Google Translate, a leading neural machine translation (NMT) platform widely used in informal and academic contexts. Professionally translated English versions of each text were obtained to benchmark translation quality. These reference

translations were produced by certified experts familiar with the relevant cultural and genre-specific norms. They serve as the comparative standard against which MT outputs are assessed.

3.3. Analytical Framework

The analysis of MT output is structured around a triadic framework:

- Cultural schemas provide the macro-context by identifying culturally shared knowledge embedded within the texts (Sharifian, 2017).
- Pragmemes evaluate whether translated utterances retain their communicative force, appropriateness, and situational relevance (Mey, 2010).
- Culturemes allows the identification and evaluation of culturally bound lexical items and expressions (Al Sharoufi, 2020).

This framework ensures that translation evaluation moves beyond literal equivalence to a deeper understanding of how language functions in culturally situated communication.

3.4. Comparative Procedure

Each MT output was systematically compared with its corresponding human translation, line by line. Divergence instances were categorized under three evaluative dimensions: pragmatic misalignment, cultural distortion, and contextual incoherence. Any situation where the illocutionary force was not maintained, where cultural references were not correctly translated, or where a phrase sounded fine grammatically yet gave the wrong meaning was flagged for further review.

This study applied interpretive coding to give form to the identified theoretical constructs. If, for example, Kafalah was incorrectly translated as "adoption" and not as it is understood in Islam, it was considered a cultureme loss. Just like the rest, if a metaphor was expressed in a way that disturbed its purpose in communication, it was seen as not functioning correctly. We analyzed the coded cases to see if similar patterns appeared across the genres and frameworks studied.

3.5. Evaluation Criteria

The quality of each translation was assessed according to three integrated criteria:

- Pragmatic alignment: Does the translation maintain intended speech acts and social appropriateness?
- Cultural sensitivity: Are culture-bound expressions and norms faithfully rendered or adapted?
- Contextual relevance: Does the translation preserve the broader communicative and genre-specific context?

This multidimensional approach ensures a comprehensive evaluation of MT beyond grammatical correctness, allowing insights into its real-world applicability in complex translation contexts.

4. Results

4.1. Example 1: Misinterpretation of Culturally Embedded Legal Terminology

Source Text:

‘تشعر اللجنة بالقلق إزاء الشواذات المحتملة في نظامي التبني والكفالة’

Reference Human Translation: ‘The committee is concerned about potential irregularities in the adoption and kafālah systems.’

MT Output: ‘The committee is concerned about potential anomalies in the adoption and foster care systems.’

Although grammatically correct, this MT output overlooks the culturally and religiously embedded meaning of kafālah, a concept rooted in Islamic jurisprudence. Unlike Western "foster care," kafālah

implies legal guardianship without conferring inheritance or lineage, emphasizing moral and communal responsibility within a Sharia framework.

This case aligns with Mey's (2010) view that linguistic analysis must begin from pragmatics, from social context outward, rather than relying solely on internal sentence structure. Based on statistical and neural models, MT fails to process the extralinguistic and culture-bound dimensions (Sharifian, 2017). It selects surface-level lexical equivalents without engaging the deeper pragmeme (institutional caution) or cultureme (Islamic legal identity of guardianship). These distinctions are demonstrated through Sharifian's (2017) framework in Table 1.

Table 1
Sharifian's (2017) Cultural Pragmatic Framework Applied to Islamic Legal Discourse

Cultural schema	Islamic guardianship and social welfare
Speech act/event	Institutional expression of concern
Pragmeme	Cautionary stance reflecting religious-legal norms
Pract	'تشعر اللجنة بالقلق إزاء الشواذات المحتملة...'
Cultureme	Kafālah reflects Sharia-based guardianship. Translating it as "foster care" strips the term of its religious-legal identity, flattening its contextual richness.

This example confirms that MT's inability to model pragmeme-to-cultureme dynamics results in flattening deeply embedded cultural meaning, a core concern in this study's first and second research questions.

4.2. Example 2: Misrepresentation of Religious Tolerance in Cultural Context

Source Text:

'فدين مثل الإسلام يفرض على اتباعه الاعتراف بجميع الرسل والكتب السماوية لا يمكن وصفه بعدم التسامح '

Reference Human Translation: 'A religion like Islam, which requires its followers to acknowledge all prophets and revealed scriptures, cannot be described as intolerant.'

MT Output: 'A religion like Islam that forces its followers to believe in all the messengers and divine books cannot be described as intolerant.'

This MT output distorts the original Arabic text's intended rhetorical and religious nuance. The verb "يفرض" in this context does not imply coercion; rather, it reflects a doctrinal imperative rooted in Islamic belief, akin to a moral or spiritual obligation. The communicative aim is to affirm Islam's theological inclusivity and the recognition of all Abrahamic prophets and scriptures. However, the MT system renders the verb as "forces," thereby introducing a coercive undertone that is culturally dissonant and pragmatically inaccurate.

This error illustrates MT's inability to process implicit pragmeme-to-cultureme mappings, a critical failure in religious discourse where ideological precision is paramount. As Sharifian (2017) emphasized, the cultural schema in such texts extends beyond lexis, drawing on deep socio-cognitive structures that shape understanding within a faith-based worldview. Mey (2010) further clarifies that pragmatic meaning is constructed through contextual interaction and intention, not isolated sentence structure. These interpretive layers are illustrated in Table 2, where the translation's failure to capture the intended pragmeme and cultureme is made explicit.

In addition to these perspectives, Meschonnic's Reflexive Translation Theory further reveals the limitations of the MT output. Meschonnic posits that translation must not be reduced to the mechanical substitution of words; rather, it should be a reflective process that retains the speaker's voice, rhythm, and ideological stance (Kadiu, 2019). The MT version strips the text of its theological rhythm and fails to replicate the ritualized subjectivity embedded in the Arabic expression. By turning a spiritual assertion into a command, the MT disrupts the ethical tone and the doctrinal sincerity conveyed in the

original utterance. In Meschonnic's terms, this results in a loss of enunciation, where the speaker's presence, belief, and cultural intention are effaced. This translation failure, therefore, is not merely semantic but also ideological, as it severs the expressive function of the religious message. The inability to reflect the speaker's embodied conviction through appropriate lexical and tonal choices compromises accuracy and the discourse's cross-cultural communicative intent.

Table 2
Sharifian's (2017) Cultural Pragmatic Framework Applied to Religious Discourse

Cultural schema	**Islamic theological inclusivity and interfaith respect**
Speech act/event	Defense of Islamic tolerance through religious reasoning
Pragmeme	Affirmative clarification of doctrinal openness
Pract	'يفرض على اتباعه الاعتراف بجميع الرسل والكتب السماوية'
Cultureme	Within Islamic belief, accepting all prophets and scriptures affirms tolerance. The MT phrase "forces its followers" imposes an unintended coercive tone, misrepresenting the cultural and theological message.

This example demonstrates MT's limitation in processing implicit religious pragmatics. Without sensitivity to the context-specific cultural schema, such outputs may unintentionally reverse the speaker's intent, undermining cross-cultural communication.

4.3. Example 3: Misinterpretation of Legal Register in Constitutional Oath

Source text:

'قبل ان يتولى عضو مجلس الأمة أعماله في المجلس أو لجانه يؤدي أمام المجلس في جلسة علنية اليمين الآتية: أقسم بالله العظيم أن أكون مخلصا للوطن وللأمير، وأن أحترم الدستور وقوانين الدولة، وأذود عن حريات الشعب ومصالحه وأمواله، وأؤدي أعمالي بالأمانة والصدق'

Reference Human Translation: 'Before assuming his duties in the assembly or its committees, a member of the national assembly must take the following oath before the assembly in a public sitting: I swear by Almighty God to be faithful to the country and the Amir, to respect the constitution and the laws of the state, to defend the liberties, interests, and properties of the people, and to discharge my duties honestly and truthfully.'

MT Output: 'Before a member of the national assembly assumes his duties in the assembly or its committees, he shall take the following oath before the assembly in a public session: I swear by Almighty God to be loyal to the homeland and the Emir, to respect the constitution and the laws of the state, to defend the people's freedom, interests, and money, and to perform my duties with honesty and sincerity.'

While grammatically sound, the MT version introduces semantic and pragmatic inaccuracies. The term "أموال" is rendered as "money," which narrows its intended legal breadth. In the constitutional context (AlQasam AlDistori), "أموال" refers more broadly to "properties" or "assets", a formulation grounded in both legal and civic responsibility. This shift in terminology distorts the pragmatic intent of the oath, which is to affirm holistic protection of public wealth, not just currency (see Table 3).

Table 3
Cultural Pragmatic Framework Applied to a Constitutional Oath

Cultural schema	**Islamic civic oaths and institutional integrity**
Speech act/event	Public performance of a formal oath
Pragmeme	Commitment to uphold state law and protect public assets
Pract	'وأذود عن حريات الشعب ومصالحه وأمواله'
Cultureme	"أموال" refers to collective properties and assets. MT's reduction to "money" erodes the broader civic and legal obligation encoded in the oath.

This example affirms the need for pragmatic modeling in MT to ensure terminological accuracy in institutional discourse.

4.4. Example 4: Structural and Cultural Breakdown in Translating a Marriage Contract

Source Text (excerpt):

'قبضت الزوجة من الزوج المذكور جميع الصداق قبضا تاما ...تزوجها على كتاب الله وسنة رسوله الكريم ... وتم هذا الزواج بعد تلاوة مضمونه عليهم عرفوا قدره شهد به عليهم'

Reference Human Translation: 'With her full consent, the bride was given for marriage in accordance with the Qur'an and Sunnah by her father ... which the groom and the bride fully accepted after they were informed ... This marriage took place after the content was read aloud and explained to them.'

MT Output: 'The wife received from the aforementioned husband all the dowry in full in recognition of his two martyrs, and she acquitted him of him, so he acquitted her ... and God Almighty creates between them what he loves and is pleased with and carried out the translation process from the language English to Arabic Mr. ...'

This MT output is an apparent failure of legal and pragmatic fidelity. Key phrases such as "she acquitted him of him" and "recognition of his two martyrs" are mistranslations of شهود (witnesses) and reflect breakdowns in both syntax and cultural meaning. Furthermore, the legal function of the Arabic marriage contract is eroded, while paralinguistic cues such as its religious tone and solemn formality are lost.

According to Meschonnic's Reflexive Translation Theory, this kind of disjointed, mechanical reproduction is symptomatic of what he calls non-thinking translation, output that replicates formal structures but misses enunciative rhythm, ritual intensity, and emotional resonance (Bielsa, 2024; Kadiu, 2019). In this case, MT's lifeless, awkward phrasing ignores the emotional and ritual significance embedded in marital declarations. The phrase "God Almighty... carried out the translation process …" introduces theological incoherence, violating linguistic logic and ritual decorum. In tandem, Al Sharoufi's (2020) theory of culturemes reveals that this sacred contract is anchored in Qur'anic formulae and societal norms, which cannot be accurately translated without deep cultural fluency. Phrases like "تزوجهاعلى كتاب الله وسنة رسوله الكريم" are formulaic culturemes signifying religious legality and moral solemnity. Machine translation treats them as literal clauses rather than cultural-textual acts, thereby stripping the utterance of its sacred and social dimensions. Such issues underscore that legal-pragmatic texts, especially those in religio-cultural rituals, demand more than lexical accuracy; they require an appreciation of ritual force, ideological posture, and cultural symbolism, all of which MT systems currently lack (see Table 4).

Table 4
Cultural Pragmatic Framework Applied to an Islamic Marriage Contract

Cultural schema	Islamic legal-marital contracts
Speech act/event	Declarative formalization of a marriage agreement
Pragmeme	Legal validation and mutual acknowledgment of marriage terms
Pract	'تزوجها على كتاب الله وسنة رسوله الكريم'
Cultureme	The formulaic expressions grounded in Qur'anic law, social responsibility, and ritual structure are dissolved in the MT output, which fails to maintain register, accuracy, and legal coherence.

This case highlights MT's incapacity to translate structured legal-religious content without degrading semantic fidelity and cultural appropriateness.

4.5. Example 5: Misrepresentation of Religious Tolerance in Cultural Context

Source Text:

'فدين مثل الإسلام يفرض على اتباعه الاعتراف بجميع الرسل والكتب السماوية لا يمكن وصفه بعدم التسامح'

Reference Human Translation: ‘A religion like Islam, which obligates its followers to recognize all prophets and revealed scriptures, cannot rightly be described as intolerant.’

MT: ‘A religion like Islam that forces its followers to believe in all the messengers and divine books cannot be described as intolerant.’

This MT output distorts the rhetorical and theological nuance of the original Arabic. The verb "يفرض" in this context denotes a doctrinal imperative, akin to a moral or faith-based obligation, not coercion. The lexical choice "forces" introduces a coercive undertone, reversing religious inclusivity's intended message. MT’s failure here is rooted in its inability to process implicit pragmeme-to-cultureme mappings (Mey, 2010; Sharifian, 2017).

Table 5
Sharifian’s (2017) Cultural Pragmatic Framework Applied to Religious Discourse

Cultural schema	**Islamic theological inclusivity and interfaith respect**
Speech act/event	Defense of Islamic tolerance through religious reasoning
Pragmeme	Affirmative clarification of doctrinal openness
Pract	‘يفرض على اتباعه الاعتراف بجميع الرسل والكتب السماوية’
Cultureme	Within Islamic belief, acknowledging all prophets and scriptures affirms tolerance. MT’s use of “forces” misrepresents this message as coercive.

This example highlights the need for MT to interpret religious utterances within culturally embedded belief systems to avoid altering the intended meaning.

4.6. Example 6: Misinterpretation of Legal Register in Constitutional Oath

Source Text:

‘وأذود عن حريات الشعب ومصالحه وأمواله، وأودي أعمالي بالأمانة والصدق...’.

Reference Human Translation: ‘... to defend the people's liberties, interests, and properties, and to discharge my duties honestly and truthfully.’

MT Output: ‘... to defend the people’s freedom, interests, and money, and to perform my duties honestly and sincerely.’

Though grammatically coherent, the MT output exhibits semantic inaccuracy. The Arabic term “أموال” refers not only to "money" but to all types of personal and public property. The MT’s reductionist rendering narrows the intended legal breadth, eroding the civic and constitutional gravity of the oath.

Table 6
Cultural Pragmatic Framework Applied to a Constitutional Oath

Cultural schema	**Islamic civic oaths and institutional integrity**
Speech act/event	Public performance of a formal oath
Pragmeme	Commitment to uphold state law and protect public assets
Pract	‘وأذود عن حريات الشعب ومصالحه وأمواله’
Cultureme	“أموال” includes assets and properties. MT’s use of “money” limits its meaning and weakens the legal force of the original.

This case (see Table 6) demonstrates the risks of substituting culture-bound legal terminology with narrow financial equivalents.

4.7. Example 7: Structural and Cultural Breakdown in Translating a Marriage Contract

Source Text (excerpt):

'تزوجها على كتاب الله وسنة رسوله الكريم ...وتم هذا الزواج بعد تلاوة مضمونه عليهم عرفوا قدر ه وشهد به عليهم'

Reference Human Translation: '... the bride was given for marriage in accordance with the Qur'an and Sunnah... This marriage took place after the content was read aloud and explained to them.'

MT Output: '... she acquitted him of him, so he acquitted her ... in recognition of his two martyrs ... God Almighty ... carried out the translation process ...'

This MT output displays severe semantic and structural incoherence. "شهيديه" (witnesses) is mistranslated as "martyrs," and the reference to God performing the translation reflects a serious breakdown in coherence and cultural appropriateness. Additionally, "enjoy capacity" replaces the correct legal term "legally competent," revealing a lack of register sensitivity. According to Sharifian's (2017) Cultural Schema Theory, such errors reflect MT's failure to recognize culturally embedded knowledge structures. Islamic marriage contracts rely on specific religious and legal formulae that are culturally pre-encoded, and their misinterpretation indicates the absence of schema activation. Moreover, from the perspective of Mey's (2010) theory of pragmemes, the MT output fails to perform the intended speech act of legal validation and communal witnessing, thus distorting the performative function of the original utterance.

Table 7
Breakdown of MT in Translating Islamic Marriage Contracts Due to Misrendered Religious-Legal Culturemes and Pragmemes

Cultural schema	Islamic legal-marital contracts
Speech act/event	Declarative formalization of a marriage agreement
Pragmeme	Legal validation and mutual acknowledgment of marriage terms
Pract	'تزوجها على كتاب الله وسنة رسوله الكريم'
Cultureme	Religious-legal formulae signal solemnity and legality. MT disrupts these by distorting grammar, role assignments, and terminology.

This case illustrates MT's inadequacy in translating formal religious-legal texts where precision and ritual structure are essential (see Table 7).

4.8. Example 8: Literalism and Loss of Pragmatic Force in Historical Narrative

Source Text (excerpt):

'لكن عجلة الإرهاب اذ تحركت ليس من السهل ايقافها ...وشرب من الكأس نفسه الذي اذاقها الكثيرين …'

Reference Human Translation: '... the terror devoured Danton himself ... Robespierre made his own bed, where he lay face-down under the blade of the very guillotine...'

MT Output: '... the wheel of terror ate Danton himself ... he drank from the same cup that many tasted ...'

In this example, MT fails to interpret metaphorical structure and narrative cohesion, producing awkward and semantically inappropriate renderings. The phrase "مجزرة مروعة" is reduced to "horrific massacre" without rhetorical framing, and "شرب من الكأس نفسه الذي اذاقها الكثيرين" becomes the unnatural idiom "drank from the same cup that many tasted," lacking poetic intensity and failing to evoke the intended historical irony.

According to Nida and Taber's (1974) theory of Dynamic Equivalence, successful translation must aim not merely for formal correspondence but for equivalent effect; that is, the target audience should experience a comparable emotional and communicative impact as the original. MT fails because it relies on surface-level lexical matches, ignoring how culturally loaded metaphors are designed to elicit specific affective responses in the source audience.

For instance, “The wheel of terror ate Danton” is a literal translation of a metaphor. However, it lacks the symbolic and psychological gravity conveyed in the reference to human translation, contextualizing the metaphor as part of a narrative arc of poetic justice. Similarly, “drank from the same cup…” fails to capture the historical vengeance motif, a culturally and emotionally potent trope in Arabic and French revolutionary discourse. In this context, Nida and Taber’s (1974) emphasis on functional impact over literal accuracy helps explain why MT’s rigid renderings fail to resonate. The affective disconnection disrupts the historical narrative's rhetorical rhythm and moral climax, as shown in Table 8.

Table 8
Cultural Pragmatic Framework Applied to a Historical Lecture

Cultural schema	Didactic recounting of revolutionary history
Speech act/event	Declarative narrative framing of political transformation
Pragmeme	Use of metaphor and cause-and-effect logic to illustrate chaos
Pract	‘ثم طالت المقصلة روبيسبير نفسه فشرب من الكأس نفسه...‘
Cultureme	The lesson of historical violence and its poetic justice is embedded in cultural idioms, which MT fails to recreate effectively.

This example demonstrates that literal translation strategies erase rhetorical effects and cultural resonance in narrative discourse.

4.9. Example 9: Structural and Cultural Breakdown in Translating a Marriage Contract

Source Text (excerpt):

‘قبضت الزوجة من الزوج المذكور جميع الصداق قبضا تاما ...تزوجها على كتاب الله وسنة رسوله ...الكريم ...وتم هذا الزواج بعد تلاوة مضمونه عليهم عرفوا قدره شهد به عليهم‘

Reference Human Translation: ‘With her full consent, the bride was given for marriage in accordance with the Qur’an and Sunnah by her father ... which the groom and the bride fully accepted after they were informed ... This marriage took place after the content was read aloud and explained to them.’

Machine Translation Output: ‘The wife received from the aforementioned husband all the dowry in full in recognition of his two martyrs, and she acquitted him of him, so he acquitted her ... and God Almighty creates between them what he loves and is pleased with and carried out the translation process from the language English to Arabic Mr. ...’

This MT output is an apparent failure in legal and pragmatic fidelity. Key phrases such as "she acquitted him of him" and "recognition of his two martyrs" are mistranslations of "شهود" (witnesses), demonstrating a breakdown in both syntactic structure and cultural understanding. Furthermore, MT mistakenly inserts God into the procedural role of a translator, producing a theologically and legally incoherent result. Legal terminology such as "legally competent" is misrendered as "enjoy capacity," which fails to meet the standard of formal register required in legal discourse. These inaccuracies reflect MT’s struggle with complex legal-pragmatic content, which requires culturally embedded knowledge (see Table 9).

Table 9
Cultural Pragmatic Framework Applied to an Islamic Marriage Contract

Cultural Schema	Islamic marriage contract
Speech Act/Event	Declarative formalization of a marriage agreement
Pragmeme	Legal validation and mutual acknowledgment of marriage terms
Pract	‘تزوجها على كتاب الله وسنة رسوله الكريم‘
Cultureme	The formulaic expressions grounded in Qur’anic law, social responsibility, and ritual structure are dissolved in the MT output, which fails to maintain register, accuracy, and legal coherence.

4.10. Example 10: Metaphorical and Grammatical Deviation in Educational Discourse

Source Text:

’عجلة الإرهاب اذ تحركت ليس من السهل ايقافها فالدماء تورث الدماء والقتل يدفع القتل فدخلت البلاد في مجازر مروعة وذهب فيها البريء بجريمة المجرم ثم أكلت عجلة الإرهاب دانتون نفسه حيث ظهر من هو اكثر تطرفا منه وهو المحامي) روبيسبير (الذي اصبح قائدا للحكومة وللجنة الإنقاذ فتطرف اكثر في مهاجمة من وصفهم باعداء الثورة وساد البلاد رعب حقيقي تمت فيه تصفية الكثير من رجال الثورة المخلصين ثم طالت المقصلة روبيسبير نفسه فشرب من الكأس نفسه الذي اذاقها الكثيرين وبوفاته انتهى عهد الإرهاب‘

Reference Human Translation: ‘However, once terror begins to reign, it becomes challenging to bring it to a halt. As the bloodshed intensified, France witnessed horrifying massacres where innocents were brought to the slaughter. Eventually, the terror devoured Danton himself with the emergence of Maximilien Robespierre ...’

MT Output: ‘But the wheel of terrorism, as it moved, was not easy to stop, for blood begets blood, and murder pays the killing ... Then the wheel of terror ate Danton himself, where he appeared who is more extremist than him ... he drank from the same cup that many tasted ...’

This MT output contains a series of grammatical and rhetorical flaws. For instance, the phrase "murder pays the killing" mistranslates "القتل يدفع القتل", which connotes causality or escalation (‘killing leads to more killing’). Similarly, the awkward phrasing ‘he appeared who is more extremist than him’ highlights a syntactic mishandling of relative clause structure. These errors diminish the clarity and emotional cadence of the original historical narrative.

According to Bielsa (2024), translation devoid of reflective engagement often results in mechanical outputs that are emotionally sterile and ideologically flattened. This directly applies to the MT version, which reproduces literal equivalents without capturing the symbolic, narrative, or political weight embedded in the source. The absence of affective alignment is not merely a linguistic failure but a failure of communicative authenticity. Furthermore, Saehu and Hkikmat (2025) confirm that despite producing grammatically correct structures, users consistently express dissatisfaction with MT outputs due to their inability to replicate cultural emotion and resonance. In this case, powerful metaphors such as "شرب من الكأس نفسه" (he suffered the same fate he imposed on others) lose their poetic and moral charge when rendered literally as “drank from the same cup that many tasted.” These issues reinforce the necessity for MT models that can dynamically map pragmemes and culturemes to their narrative and affective functions, a critical requirement in educational or historical discourse. See Table 10 for an applied framework.

Table 10
Cultural Pragmatic Framework Applied to a Historical Lecture

Cultural Schema	Delivering a lecture
Speech Act/Event	Declarative narrative of historical events
Pragmeme	Culminate the events of the Reign of Terror through a simile
Pract	Full source excerpt from the lecture
Cultureme	A lesson on how democracy was won through cycles of violence and bloodshed. The MT fails to realize the rhetorical arc and symbolic meanings, flattening emotional intensity.

5. Discussion

This study focused on the barriers and difficulties of machine translation for rendering Arabic material from legal, religious, and historical genres into English. While reported improvements in syntax have been made by Slosarek et al. (2024), this study indicates that current MT models still miss much of the embedded culture and ideology. The machine often could not identify and accept underlying pragmemes and culturemes, resulting in silly messages, confused tones, and missing their real point. Rules from religion were turned into firm statements, and ritual formulas for marriage were no longer religious or legal. It is in agreement with what Artanti and Rahayu (2024), Tahseen and Hussein (2024), and Ennouari

and Houssaini (2024) found that complex texts from a cultural or national context are often misunderstood by machine translation.

This agrees with Sharifian's (2017) idea and Mey's (2010) theory that both meaning and pragmata are influenced by social context. Like humans, machines trained on language data understand one sentence at a time, unlike humans, who consider social and mental context. Like Alharahsheh et al. (2024) and Rebechi et al. (2024), this study discovered that MT has trouble representing common and traditional expressions in Arabic because of an insufficient cultural background. "Kafālah" was therefore mislabeled as "foster care," which took away its legal role in Islamic law. This shows how scheme-based translation is necessary, mainly for rich cultural, legal, and religious information.

These results agree with Meschonnic's Reflexive Translation Theory, which sees translation as a form of expressing and communicating ideas (Kadiu, 2019). In Meschonnic's view, thoughtful translation should carry over the original text's rhythm, tone, and emotional impact, unlike what you would find in most MT texts. Such a thing happened when MTs tried to explain historical and religious words, causing the warmth and feeling to be lost, ending up being very basic and uninteresting. In their 2024 and 2025 papers, Bielsa (2024), Saehu and Hkikmat (2025) found that users were unsatisfied when MT did not convey the proper emotions or cultural content. Showing that good grammar is often produced at the expense of emotions and understanding of other cultures.

MT tools like Google Translate lack Magnitude Thinking, as they process language at a surface level without understanding context, emotion, or cultural weight. They translate words, not meanings. As a result, they often miss the deeper layers essential for accurate and impactful communication (Pishghadam, 2025). This also reflects the limitations highlighted in the theory of cultuling by Pishghadam (2013), Pishghadam, Ebrahimi, and Derakhshan (2020), and Pishghadam, Ebrahimi, Naji Meidani, et al. (2020), which views language as a carrier of cultural values embedded in everyday expressions. MT systems often fail to decode these culturally loaded linguistic units, resulting in an output that lacks both semantic depth and sociocultural resonance.

This research concludes that while MT systems have made strides in fluency and syntax, they remain inadequate for texts that demand high pragmatic accuracy and cultural awareness. The comparative analysis illustrates a significant gap between the computational parsing of language and the interpretive, sociocultural competence required for meaningful translation. A hybrid model is recommended, combining MT's processing speed with human translators' cultural intuition. Such an approach could preserve surface meaning and the ethical, ideological, and rhetorical intentions embedded in the original discourse. As Nida and Taber (1974) emphasized in their theory of dynamic equivalence, accurate translation requires reproducing the effect of the source message on its audience, a standard that current MT technologies consistently fail to meet.

However, this study is not without limitations. The dataset included only three legal, religious, and historical Arabic text genres and relied on one MT platform (Google Translate). As such, results may not generalize across other platforms or language pairs. Moreover, while strategic, the selection of texts limits the breadth of genre variability. Future studies should include other genres, such as poetry, media content, and medical texts. Cross-platform evaluations comparing Microsoft Translator, DeepL, and ChatGPT translations would enrich the findings. Longitudinal studies examining the evolution of MT's pragmatic competence could reveal whether neural language models improve in managing affective and cultural content over time. Finally, interdisciplinary research involving linguists, AI developers, and cultural theorists is essential to designing MT systems that align more closely with human communication's dynamic, embodied nature.

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