

Assessing the Accuracy Criteria of AI Tools-aided Translation: A Case Study of Two-word Prophetic Hadiths

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Abstract

The surge of advanced neural machine translation (NMT) tools like Google Translate and large language models (LLM) like ChatGPT and Gemini has fueled their application across diverse religious texts, like prophetic hadiths. However, the effectiveness of these tools, particularly LLMs, in the domain of religious translation and their understanding of classical Arabic (CA) remains largely unexplored. This study bridges this gap by comprehensively assessing the machine translation (MT) accuracy of these three systems in translating 25 succinct, two-word prophetic hadiths from Arabic into English. These two-word hadiths, categorized as *Jawāmi' al-kalim* (comprehensive words), encapsulate profound meanings despite their brevity. This study delves deeper by evaluating the ability of Google Translate, ChatGPT (GPT-3.5), and Gemini to capture the essence of these two-word hadiths, considering their unique linguistic features and cultural context. Through meticulous evaluation by Subject Matter Experts (SMEs)/translators, the study reveals recurring challenges in MT, including word sense disambiguation, handling out-of-vocabulary terms, part-of-speech tagging, morphological segmentation, and comprehending the contextual, cultural, lexico-semantic, and pragmatic dimensions. These limitations were particularly evident with GT, whose reliance on literal translation often resulted in inaccurate renderings in the target language. Despite these challenges, the potential of LLMs for religious translation remains promising, especially with AI tools like Gemini showing promise. Their ability to learn and adapt finds that with further development, including domain-specific fine-tuning, incorporation of diacritics and contextual information via accurate prompts, development of religious text-specific evaluation metrics, and human post editing, MT systems can significantly be improved. It also underscores the vital role of human expertise while paving the way for future research to develop more accurate and culturally sensitive MT systems for religious communication across languages and faiths. The study concludes that LLMs displayed promise in capturing the essence of certain hadiths.

Keywords

Natural Language Processing (NLP), neural machine translation (NMT), large language models (LLM), Classical Arabic (CA), Google Translate (GT), ChatGPT, Gemini, prophetic Hadith.

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الملخص:

شهدت السنوات الأخيرة طفرة في أدوات الترجمة الآلية العصبية المتقدمة مثل Google Translate، وكذلك نماذج اللغات الهائلة مثل ChatGPT و Gemini، مما أدى إلى زيادة استخدامها في مختلف النصوص الدينية، مثل الأحاديث النبوية. ومع ذلك هناك فعالية لهذه الأدوات، وخاصة نماذج اللغات الهائلة. تسعى هذه الدراسة إلى سد هذه الفجوة من خلال تقييم دقة الترجمة الآلية الشاملة لهذه الأنظمة الثلاثة في ترجمة 25 حديثاً نبوياً من جوامع الكلم مكوناً من كلمتين من العربية إلى الإنجليزية. وتعتبر هذه الأحاديث ذات معانٍ عميقة رغم قلة كلماتها. تتعمق هذه الدراسة في تقييم قدرة GT و Gemini و ChatGPT (GPT-3.5) على استيعاب معنى هذه الأحاديث، مع مراعاة خصائصها اللغوية الفريدة وسياقتها الثقافية. كشفت الدراسة عن التحديات المتكررة في الترجمة الآلية، ومنها إزالة اللبس عن المعنى، ووضع التشكيل الإعرابي، والتقسيم الصرفي، وفهم الأبعاد السياقية، والثقافية، والمعجمية، والدلالية. وكانت هذه التحديات واضحة بشكل خاص في ترجمة GT التي تعتمد على الترجمة الحرفية مما أدى إلى ترجمات غير دقيقة. وعلى الرغم من هذه التحديات، فإن إمكانيات نماذج اللغات الهائلة في الترجمة الدينية واعدة، خاصة مع أدوات الذكاء الاصطناعي مثل Gemini التي تظهر تقدماً كبيراً في مجال الترجمة. وقد وجد أن قدرتها على التطور والتكيف عالية، بما في ذلك الضبط اللغوي الدقيق، وإدراج التشكيل الإعرابي والمعلومات السياقية من خلال، والتدقيق البشري بعد الترجمة، يمكن أن يحسن أنظمة الترجمة الآلية بشكل كبير. كما تؤكد الدراسة على الدور الحيوي للخبرة البشرية مع تمهيد الطريق للأبحاث المستقبلية لتطوير أنظمة ترجمة آلية أكثر دقة. وتخلص الدراسة إلى أن نماذج اللغات الهائلة أظهرت تطوراً كبيراً في استيعاب أحاديث جوامع الكلم.

الكلمات المفتاحية:

معالجة اللغة الطبيعية - الترجمة الآلية العصبية - نماذج اللغات الهائلة - اللغة العربية الكلاسيكية والفصحى.

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I. Introduction

For centuries, the prophetic hadiths – concise sayings attributed to the Prophet Muhammad – have served as guiding lights for Muslims worldwide, shaping individual and communal life. Encapsulating profound meanings within their brevity, these narrations, often categorized as "*Jawāmi' al-kalim*" (comprehensive words), wield immense weight due to their cultural and religious significance. Accurately conveying their layered meanings and nuanced references necessitates translation that goes beyond mere word-for-word accuracy, fostering cross-cultural understanding and accessibility.

Enter the burgeoning field of Natural Language Processing (NLP), a subfield of Artificial Intelligence (AI) focused on enabling computers to understand and manipulate human language. Machine translation (MT), a core component of NLP, has revolutionized our ability to bridge linguistic barriers. However, translating religious texts like hadiths presents unique challenges. Religious language thrives on idiomatic expressions, metaphors, and culturally-specific references that elude literal interpretations.

Some previous researches within NLP and MT shed light on these challenges. Studies, like those by Al-Hajeri et al. (2022), emphasize the crucial need to preserve cultural and religious significance in religious text translation. Bouachrine et al. (2021) further highlight the difficulty of capturing the essence of religious language, particularly metaphorical expressions prevalent in hadiths. However, these studies primarily focus on broader religious texts, leaving a gap in understanding the specific complexities of translating two-word hadiths.

These concise narrations pack immense meaning within their brevity, where each word carries substantial weight. Cultural understanding is crucial to grasping their full sense. While some existing researches within NLP and MT have explored the effectiveness of MT for the Qur'an and broader religious texts (Elkahky et al., 2023; Hassan et al., 2022), the unique characteristics of two-word hadiths remain largely unexplored.

This gap is further compounded by the limited research on Large Language Models (LLMs) in this domain. These advanced models, like

ChatGPT and Gemini, leverage complex deep learning architectures and massive datasets to generate human-quality text. While they hold immense potential for religious text translation, concerns regarding their ability to handle religious language and cultural nuances remain unaddressed.

This study embarks on a groundbreaking journey, delving into this uncharted territory with a comprehensive evaluation of MT accuracy for translating two-word hadiths. It unveils the potential and limitations of Google Translate, ChatGPT (GPT-3.5), and Gemini in rendering these concise Prophetic sayings from Arabic into English. By analysing 25 carefully selected hadiths translated by each system and meticulously evaluated by three expert annotators/translators, the study reveals recurring issues in machine translations, including inaccurate word choices; missing or extraneous information; word sense disambiguation (WSD); out-of-vocabulary (OOV); part-of-speech (POS) tagging; morphological segmentation; understanding contextual, cultural, lexicosemantic, and pragmatic dimensions; and literal translations that fail to capture the delicate nuances of classical Arabic.

Beyond merely identifying limitations, this research aims to contribute to the advancement of NLP and MT in this crucial domain. By delving into the challenges faced by current systems and exploring the potential of LLMs like Gemini, it paves the way for further research. This includes investigating domain-specific fine-tuning to improve LLM performance on religious texts, mitigating potential biases and misinterpretations, and ultimately facilitating more accurate and culturally sensitive translations of these important religious texts.

II. Review of the Literature

The application of machine translation (MT) to religious texts, particularly the prophetic hadiths, presents a unique set of challenges. These challenges stem from the cultural significance of hadiths, their linguistic complexities, and the potential for misinterpretation in translation. While research exploring MT effectiveness in this domain remains scarce, especially regarding LLMs like ChatGPT and Gemini, recent studies have begun to shed light on this topic. This review delves into these recent studies to better understand the current state of MT for translating hadiths and related religious texts. Machine translation (MT) has become increasingly prevalent in translating various texts, including religious scriptures such as prophetic hadiths. This review aims to examine the current state of research and developments in the machine

translation of prophetic hadiths, focusing on the accuracy, challenges, and advancements in this domain.

Soomro et al. (2013) explored Google Translate Service (GTS) for religious text translation, particularly English and Arabic to Urdu. Although highlighting its multilingual reach, they identified issues like inaccurate translations, both in general text and religious materials like Quranic verses and hadiths. These errors stemmed from limited understanding of linguistic nuances and cultural specificities. Proposed solutions included user caution, utilizing human-translated resources, database enhancement with accurate translations, and collaboration with language experts. This early study raises concerns still relevant today, emphasizing the need for further development in MT systems to ensure accuracy, cultural sensitivity, and adherence to religious standards when handling sacred texts.

In a recent similar vein, Diab (2021), introduces a thorough error analysis comparing Google Statistical Machine Translation (SMT) and Neural Machine Translation (NMT) engines for English-to-Arabic translation using WikiHow articles. Guided by the DQF-MQM Harmonized Error Typology, the study classifies translation errors into eight major categories, offering a fine-grained exploration of error types generated by each MT model. The paper emphasizes the scarcity of research on the English-Arabic language pair in the comparative literature of SMT and NMT. Results indicate that NMT generates fewer grammatical errors and mistranslations, exhibiting greater fluency and robustness, while SMT demonstrates consistency in translating proper nouns and out-of-vocabulary words. The study advocates for human assessment to provide detailed linguistic insights into MT model performance, underlining the importance of refining translation quality assessment methodologies for enhanced accuracy and efficiency.

Sabtan et al. (2021) evaluated Google Translate's accuracy in translating the Egyptian Arabic dialect (social media) into English. While GT was most widely used, it produced inaccurate translations with problems like wrong equivalents, missing/added words, and transliteration due to literal translation. The evaluation, conducted manually by human translators, reveals errors in the GT output, including wrong equivalents and inappropriate additions or deletions. The present study benefitted from and followed a similar evaluation system as described in this study. It also highlights the need for MT systems to handle vernacular varieties better, considering their differences from standard Arabic and unique features like non-standardized spelling.

Farrell (2023) compared ChatGPT to DeepL and Google Translate for English-to-Italian translation of Wikipedia articles. DeepL outperformed both in raw translation quality. As an automatic post-editor for DeepL outputs, the free version of ChatGPT achieved human-like lexical variety, but only limited aspects of post-editing quality were assessed. Future experiments are planned with ChatGPT Plus, addressing limitations like using the free version, evaluator bias, and limited scope. This study emphasizes the need for further research and careful evaluation before relying on automatic post-editing, especially with free versions of tools like ChatGPT.

In a noteworthy contribution, Kadaoui et al. (2023) evaluated ChatGPT (GPT-3.5 and GPT-4) and Bard on translating ten Arabic varieties, comparing them to commercial systems like Google Translate. While LLMs excelled at translating dialects with limited data, they underperformed on Classical and Modern Standard Arabic compared to commercial options. A human-centric study showed Bard struggled to follow specific instructions during translation. This reveals limitations in current LLMs, lacking inclusivity and struggling with diverse linguistic and cultural nuances across Arabic dialects.

Khoshafah (2023) evaluated ChatGPT 3.5 for Arabic-English translation, comparing it to human professionals across various text genres. While ChatGPT handled simple content well, it struggled with complex texts, requiring human intervention for accuracy and nuanced translations. The study highlights limitations like stylistic differences, Arabic phrasing issues, and challenges with specialized content, idiomatic expressions, and cultural sensitivity. It recommends avoiding ChatGPT for legal, medical, and literary translations while recognizing its potential for quick translations of simple content. Overall, human translation remains superior for accuracy and handling complex cultural nuances.

Kwon et al. (2023), the authors investigate the performance of instruction finetuned Large Language Models (LLMs) in Arabic Grammatical Error Correction (GEC), a complex task due to Arabic's rich morphology. Employing various prompting methods and in-context few-shot learning, the study reveals considerable effectiveness, with GPT-4 achieving up to 65.49 F1 score under expert prompting. However, fully finetuned models consistently outperform instruction-finetuned ones, indicating substantial room for improvement in LLMs. Inspired by low-resource machine translation methods, the authors develop a synthetic data exploitation method that surpasses previous models on standard Arabic benchmarks, achieving a new State-of-the-Art (SOTA) on Arabic GEC. Despite

advancements, the study underscores the need for further enhancements in LLMs to address grammatical errors effectively in languages beyond English, highlighting the complexities and challenges inherent in non-English NLP tasks.

Valdivieso et al. (2023) evaluated Google Translate and ChatGPT for translating wine and olive oil tasting notes (Spanish to English), a domain with crucial terminology. While ChatGPT made fewer terminological errors, neither system of the three AI tools was flawless. The study highlights that non-language professionals cannot solely rely on these tools for specialized translations due to potential inaccuracies.

III. Objectives and Research Questions

This study aims to contribute to the advancement of MT in religious text translation by offering insights into the capabilities and limitations of current models for handling two-word hadiths. Ultimately, it seeks to pave the way for more accurate and culturally appropriate translations of these significant religious texts. The objective of this study is threefold; first, to compare Google Translate, ChatGPT, and Gemini to understand their strengths and weaknesses in handling this unique genre, Second, to analyse the recurring error patterns to identify areas where each model struggles, particularly regarding contextual and pragmatic meanings, and finally, to explore potential solutions, including domain-specific fine-tuning, incorporation of diacritics and contextual information via accurate prompts, development of religious text-specific evaluation metrics, and human post editing, to enhance the accuracy and cultural sensitivity of translations. Building upon the existing literature, this study delves deeper into the effectiveness of machine translation (MT) for translating two-word hadiths, succinct yet profound prophetic sayings, from Arabic into English. It focuses on three key research questions:

1. Do NMT and LLM models differ in their accuracy and error patterns when translating two-word Prophetic Hadiths?
2. What specific challenges do such models face in capturing the cultural and linguistic nuances of classical Arabic within two-word Prophetic Hadiths?
3. Can the researcher identify some certain strategies to improve the MT quality of two-word Prophetic Hadiths using such models?

IV. Significance of the Study

Accurately translating two-word hadiths holds immense cultural and religious significance, impacting millions of Muslims worldwide. This study addresses this notion by 1) Filling a gap in MT research by exploring the effectiveness of NMT and LLM models, particularly ChatGPT and Gemini, in a domain previously understudied. 2)

Understanding challenges in translating classical Arabic through analysing how models handle diacritics, nuanced meanings, and cultural references within two-word hadiths. 3) Improving religious text translation quality via identifying strategies to enhance accuracy and cultural sensitivity, benefiting a wide audience. 4) Contributing to MT advancement by providing valuable insights for developing more effective models for religious text translation across languages.

V. Research Methods

a. Dataset Collection

The study utilizes a meticulously selected corpus of 29 but analyses only 25 two-word Prophetic Hadiths drawn from renowned and reliable collections like Sahih al-Bukhari and Sahih Muslim. This ensures authenticity and religious significance from these reliable sources. To verify linguistic accuracy and narration authenticity, each Hadith underwent rigorous review by a distinguished Hadith specialist and scholar at Al-Azhar University in Egypt. This stringent validation process guarantees the corpus's suitability for evaluating MT performance in this specific domain. By combining a unique dataset with relevant research questions and objectives, this study sheds light on the potential of MT for translating two-word hadiths, ultimately contributing to the preservation and dissemination of religious knowledge.

b. Tools and Procedures

This study employs three distinct tools to produce machine translation (MT) output effectiveness for rendering two-word Prophetic Hadiths: **Google Translate**, **ChatGPT**, and **Gemini**. The selection encompasses a well-established NMT system (Google Translate), a leading LLM (ChatGPT), and a recent LLM focused on factual language understanding (Gemini). Each tool will translate the meticulously curated corpus of 25 hadiths from Arabic to English. To assess and delve into the quality and nuanced understanding of these outcomes, the study consults three expert translators/annotators. They will meticulously evaluate each tool translation, identifying issues like inaccurate word choices arising from diacritics, semantics, pragmatics, out-of vocabulary (OOV) terms, literal translations that miss the subtleties of classical Arabic, etc. A predefined marking rubric (see Table I) developed by the researcher will guide their assessments, ensuring consistency and facilitating the creation of statistical tables (see Tables II, III, IV). These tables will summarize the annotators' assessments as Arabic native speakers, providing quantitative insights into the strengths and weaknesses of each MT system in handling the unique challenges of each two-word hadith. Through this multifaceted

approach, the study goes beyond mere accuracy metrics, delving into the ability of MT tools to capture the cultural and linguistic nuances embedded within these succinct yet profound hadiths. This comprehensive evaluation aims to illuminate the potential and limitations of current MT technologies in navigating the complexities of religious text translation.

Point	Criterion description
1.0	The English TT displays significant lexical, semantic, syntactic, and pragmatic discrepancies that result in a lack of comprehensible meaning when compared to the ST.
2.0	The English TT displays major lexical, semantic, syntactic and pragmatic discrepancies that result in a partially comprehensible meaning when compared to the ST.
3.0	The English TT displays slight lexical, semantic, syntactic and pragmatic discrepancies that result in mostly comprehensible meaning when compared to the ST.
4.0	The English TT displays no lexical, semantic, syntactic and pragmatic discrepancies that result in completely comprehensible meaning when compared to the ST.

Table I: A marking scheme for grading and evaluating the MT tools

Hadith no.	Annotator 1			Annotator 2			Annotator 3			Average		
	GT	ChatGPT	Gemini	GT	ChatGPT	Gemini	GT	ChatGPT	Gemini	GT	ChatGPT	Gemini
1	1	2	4	2	2	3	1	1	3	2.14	2.14	2.28
2	3	3	4	3	3	3	2	2	4	3	2.85	3
3	1	1	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	2	2	1	1	3	1.28	1.28	1.57
5	3	1	1	3	4	4	4	3	3	2.85	2.85	3.14
6	4	4	4	4	4	4	4	4	4	4	4	4
7	1	1	2	1	1	2	1	1	1	1.28	1.28	1.28
8	1	1	3	2	2	3	2	3	4	2	2.28	2.71
9	1	1	2	2	1	2	1	1	3	1.42	1.42	1.71
10	1	2	3	3	3	4	3	4	4	2.71	3.14	3.42
11	1	1	4	2	2	3	1	4	4	2	2.42	2.85
12	1	1	4	1	1	4	1	1	4	1.85	1.85	2.28
13	1	1	3	1	1	4	1	1	3	1.71	1.71	2
14	4	4	4	4	4	4	4	4	4	4	4	4
15	4	3	4	4	3	4	4	1	4	3.71	3.28	3.42

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16	1	1	4	1	1	3	1	1	4	1.71	1.71	2.14
17	4	4	4	4	4	4	4	4	4	4	4	4
18	1	2	3	1	1	3	1	3	4	1.71	2	2.28
19	1	1	4	2	2	3	3	3	4	2.28	2.57	3
20	1	1	1	1	1	1	4	1	4	1.42	1.42	1.85
21	1	1	4	1	3	4	1	1	4	2.14	2.14	2.57
22	1	1	4	1	1	3	1	1	4	1.71	1.71	2.14
23	1	1	1	1	1	1	1	1	1	1	1	1
24	1	1	3	1	1	3	1	1	4	1.57	1.57	2
25	2	2	2	2	2	3	3	3	4	2.28	2.42	2.71
26	2	2	2	3	3	3	3	4	4	2.57	2.85	3.14
27	1	1	1	3	3	3	1	1	1	1.85	1.85	1.85
28	1	3	3	3	3	3	2	4	3	2.57	3	3
29	2	2	4	3	2	3	4	4	4	2.85	3.14	3.42
Average	1.65	1.72	2.89	2.10	2.13	3	2.10	2.20	3.37	2.23	2.31	2.54

Table II: The annotators' evaluation scores

MT systems	Score Average
GT	2.23
ChatGPT	2.31
Gemini	2.54
Overall Average	2.36

Table III: General average of the NMT and LLM tools

The assessment of MT quality draws from overarching criteria, primarily adequacy and fluency, which serve as fundamental parameters for evaluating the efficacy of such systems. Adequacy pertains to the fidelity of conveying ideas from the source text, ensuring the translated content aligns accurately with its source context. Conversely, fluency addresses the grammatical coherence and naturalness of the translated text (Krings, 2001). Scholars such as Popović (2020) advocate for a comprehensive assessment approach encompassing adequacy, comprehensibility, and fluency. Adequacy, viewed through a bilingual lens, underscores the precision of conveying meaning from the source to the target language. Comprehensibility, assessed monolingually, gauges the ease of understanding the translated text in isolation from its source. Fluency, on the other hand, assesses the structural harmony of the translated text within the target language. Koehn and Monz (2006) emphasize fluency and adequacy as pivotal manual evaluation metrics. Consequently, the evaluation of MT translations involves a nuanced analysis of semantic,

syntactic, pragmatic, and diacritic elements, breaking down the broader concepts of adequacy, comprehensibility, and fluency. Annotators were tasked with a two-phase assessment to evaluate each two-word hadith, initially focusing on the comprehensibility of the source text and subsequently comparing both texts to ensure the faithful rendition of the source text into the target language.

VI. The Analysis

The three annotators evaluated the translated output 29 hadiths for adequacy (faithfully conveying the source text meaning) and fluency (sounding natural in English) using a four-point rubric designed by the researcher (see Table I). Annotators were encouraged to comment on specific issues encountered in the translations, revealing various errors across diacritics (accent marks), vocabulary and meaning (lexicosemantic), grammar (syntactic), and context and cultural appropriateness (pragmatic) levels. Table IV details the number and type of each error category identified by the annotators.

Despite the syntactic simplicity of the 25 hadiths as equative non-verbal nominal sentences (two nouns connected attributively, mirroring English equative copulative sentences), all the hadiths appear to lack proper contextualization for the AI tools under study. While understanding the theme or rheme relies heavily on background knowledge, Gemini translations demonstrate a higher grasp of the meaning, suggesting it leverages GT's algorithms beyond the LLM to infer context. Conversely, GT shows the weakest performance, failing to account for the crucial internal vowelings, a fundamental aspect of Arabic orthography.

	Error category				Total
	Lexico-semantic	Pragmatic	Diacritic	Syntactic	
Hadiths (1-29)	42	45	22	3	112

Table IV: Error category identified by the annotators

This section delves into a meticulous analysis of each hadith, employing a multi-faceted approach. The analysis unfolds in the following stages:

1. Arabic Hadith Transcription: All Arabic hadiths will be transcribed according to the ALA-LC Romanization¹ system for consistency.
2. Hadith Authentication, Narration Details, and Context: For each hadith, a comprehensive overview will be provided, including its

¹ The transliteration system used in this study is adopted with some modifications from the ALA-LC automatic Romanisation tool of Arabic texts. See <http://romanize-arabic.camel-lab.com/> (accessed 20 April 2024).

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- authentication status, documentation details (source collections), narration details (chain of transmission), and contextual information.
3. In-depth Exploration: The linguistic, technical, contextual significance, and background of each hadith will be thoroughly examined to establish a comprehensive understanding.
 4. Machine Translation Evaluation: A detailed discussion will dissect the outputs generated by the three tools (Google Translate, ChatGPT, and Gemini). This analysis will be enriched by incorporating the insightful remarks and assessments provided by the expert annotators.
 5. Translation Linguistics Analysis: A rigorous translation linguistics analysis will be conducted, scrutinizing the strengths and weaknesses of the various translations produced.
 6. Refined Translation (if required): Where necessary, an alternative or refined translation will be proposed to enhance accuracy, fluency and effectively convey the intended meaning.

By adopting this systematic and communicative approach, this analysis aims to provide a nuanced understanding of the challenges associated with translating two-word hadiths using machine translation tools.

Hadith 1

العَيْنُ حَقٌّ (*al-'aynu ḥaqqun*)

Narrated by Abu Hurairah: The Prophet said: "The evil eye is real." (Translation mine) [Sahih al-Bukhari]. "العَيْنُ (*al-'ayn*)" technically refers to the evil eye, which is the belief that a person can inflict harm or misfortune on another person by looking at them with envy or malice². "حَقٌّ (*ḥaqq*)" literally means "true" or "real." It can also mean "a right" or "an entitlement." In this context, it emphasizes that the evil eye is a real phenomenon that has a genuine impact on people.

The Arabic phrase "أَصَابَتْ فُلَانًا عَيْنٌ" (*aṣāba fulāna 'aynun*) literally means "the eye struck someone." This is a common idiom used to describe someone who has been affected by the evil eye. The belief in the evil eye is widespread in many cultures around the world, including Arab culture. There are many different beliefs and practices associated with the evil eye, such as wearing amulets or reciting protective prayers.

ST	العَيْنُ حَقٌّ (<i>al-'aynu ḥaqqun</i>)	Annotators's assessment		
		Annotator 1	Annotator 2	Annotator 3
GT output	The eye is right.	1	2	1
ChatGPT output	The eye is true.	2	2	1
Gemini output	The evil eye is real.	4	3	3

² Marqāt al-Mafātīḥ Sharḥ Mishkāt al-Maṣābīḥ (2820/7).

While Google Translate and ChatGPT offer seemingly literal translations of the Arabic phrase "العين حق" (al-'ayn ḥaqq), Gemini's output demonstrates a more communicative understanding. The crux of the issue lies in the word "حق (ḥaqq)" which carries a specific religious connotation of something "predestined by God" rather than simply "true." Furthermore, "العين (al-'ayn)" refers not to a physical eye, but rather to the idiomatic and cultural concept of "the evil eye," signifying a malevolent glance capable of inflicting harm. Consequently, a more accurate and culturally appropriate rendering would be "the evil eye is rightly predestined as an act of God." It is important to note that "predestined" here signifies predestined by God, not done by God!, while "act of God" serves as a familiar English idiom conveying the concept of a divinely ordained misfortune. This translation achieves grammaticality, acceptability, and clarity for an English audience. Critically, the errors made by Google Translate and ChatGPT fall under the category of contextual, cultural, and lexico-semantic errors, where they misunderstand the specific meaning and cultural context of the Arabic words.

Hadith 2

تَحَابُّوا تَهَادَوْا (*tahaaduu taḥaabbuu*)

Narrated by Abu Hurairah: The Prophet said: "Exchange gifts and you will love one another" (Translation mine). The word "تهادوا" (*tahaaduu*) "can be interpreted in two ways: If the verb is pronounced with emphasis (*tashdeed*): It means "to exchange gifts out of love and affection." If the verb is pronounced without emphasis (*takhfeef*): It means "to show kindness and consideration to one another through gifts" (Translation mine). This is because gifts bring hearts together, remove grudges, and accepting them is a Sunnah (practice) of the Prophet. However, it is best to avoid giving gifts that create a sense of obligation³.

ST	تهادوا تحابوا (<i>tahaaduu taḥaabbuu</i>)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	Give gifts to love one another	3	3	2
ChatGPT output	Exchange gifts	3	3	2
Gemini output	Exchange gifts and you will love each other	4	3	4

³ Al-Taisir bi Sharh al-Jami' al-Saghir (457/1)

The three AI tools achieved a high degree of consistency in conveying the core message of the hadith, all emphasizing the act of exchanging gifts as a means to foster love. The translation "...to love..." captures the essence of the Arabic verb "تحابوا" (*tahaabbuu*), but a more nuanced approach reveals a deeper meaning. While it suggests a consequence of exchanging gifts, a stronger interpretation lies in the appellative function of language. Here is why: 1) Purpose: The preposition "to" often indicates a consequence. However, in this context, "تهدوا" (*tahaaduu*) can be understood as an action with a specific desired outcome. Exchanging gifts is not simply followed by love, but rather serves as a means to cultivate it. 2) Non-Declarative Structure: The hadith is not a mere statement of fact; it carries an implicit expectation or encouragement. The act of giving gifts is presented as a pathway towards fostering love. 3) Hope and supplication: The true essence lies in the underlying hope that exchanging gifts will nurture love and strengthen relationships. This aligns with the concept of *du'a* (supplication) in Islam, where actions are undertaken with the intention of seeking a positive outcome from God. Therefore, a more accurate translation that captures the appellative function would be: "...so that you might love one another". This phrasing emphasizes the intentional act of exchanging gifts and its anticipated consequence of fostering love.

Hadith 3

الكُبْرُ الكُبْرُ (*al-kubr, al-kubr*)

Narrated Sahl ibn Abi Hathmah who said: The Messenger of Allah said: "*al-kubr* (the orlder), *al-kubr* (the older)." This is said with the letters *kaf* and *ba'* being marked by the vowel *damma* and the last letter of the word being accusative. It could mean: "The older person should speak first," or "Give precedence to the older person as a way of showing respect for their age."⁴

The original story of this hadith is that a group of people from a tribe went to Khaybar and dispersed within it. They found one of them dead and said to the one who was found among them, "You have killed our companion." They replied, "We did not kill him nor do we know the killer." So they went to the Prophet and said, "O Messenger of Allah, we went to Khaybar and found one of us dead." He said, "The older, the older!" He then said to them, "Bring evidence of who killed him." They said, "We have no evidence." He said, "Then they should swear an oath, known as القسامة *al-qisāmah*." They said, "We are not satisfied with the

⁴ Fiqh al-Qadir (62/5)

oaths of the Jews." The Messenger of Allah disliked letting his blood go to waste, so he paid blood money for him with one hundred camels from the charity fund.

The Prophet repeats the word "*al-kubr*" (the older) twice to emphasize its importance. This could be interpreted in two ways: 1) The older person should speak first: This interpretation emphasizes the importance of respecting elders. In Islamic culture, it is considered disrespectful to interrupt elders or to speak over them. 2) To give precedence to the older person as a way of showing respect for their age. This interpretation emphasizes the importance of honoring elders. Therefore, Muslims are encouraged to show respect for their elders in all aspects of life, including by giving them precedence in matters such as speaking and sitting. Also, the phrase "*al-kubr, al-kubr*" is a literary device called "*tawkid*" (emphasis). This is used to emphasize the importance of the word "*al-kubr*."

ST	الكُبْرُ الكُبْرُ (<i>al-kubr, al-kubr</i>)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	The arrogant arrogance	1	1	1
ChatGPT output	Pride, the great	1	1	1
Gemini output	pride, arrogance, or haughtiness	1	1	1

Despite the presence of diacritics, all three translation models (GT, ChatGPT, and Gemini) failed to capture the full meaning of the hadith due to a misunderstanding of the classical term "*الكُبْرُ*" *al-kubr* and due to a confluence of pragmatic, lexico-semantic, syntactic, and diacritic, contextual, and word sense disambiguation (WSD) issues. The decontextualized nature of the text presented to the AI models likely contributed to their outputs that miss the communicative meaning. This may be due to the word's relative uncommonness in this context. A more accurate and contextually relevant translation could be: "Prioritize the older persons / the elderly". One interesting note emerged during the evaluation process. An annotator opted out of assessing these AI translation outputs. His reasoning, as quoted directly, was: "As an SME translator, I abstain here for not recognizing the Prophetic saying with its authentic narration and/or exact diacritic marks. One of a translator's tasks is to stop for verifying and/or calling for more text/context!" This reaction raises two key points. Firstly, it highlights a potential limitation in human expertise when encountering unfamiliar hadith. Secondly, it

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underscores the importance of faithfulness and a meticulous approach to translating religious texts, which AI tools may not always possess.

Hadith 4

بِالضَّمَانِ الْخَرَجِ. (*al-kharaju bi-a-dhamani*)

Narrated Aisha: The Prophet said: "The profit goes with the liability" (Reported by Abu Dawud). This hadith deals with the legal consequences of a slave developing a defect after being purchased. The Prophet ruled that the purchaser could return the slave solely based on the newly discovered defect and demand a full refund. Instead, the seller must bear the loss of the slave's value due to the defect, as they had assumed to be honest in trade practices⁵. This hadith offers a cornerstone principle for fair trade in Islamic jurisprudence. While the translation suggests "profit goes with liability," it emphasizes buyer protection upon discovering a hidden defect the seller concealed during the initial sale. If the buyer finds such a defect, the hadith grants them the right to return the goods for a full refund or negotiate a new price reflecting the reduced value due to the defect. This principle safeguards buyers from seller deception and fosters transparency in commercial transactions. Within Islamic jurisprudence, this hadith likely serves as a foundation for ethical trade practices, aligning with Islamic finance's core values of fairness and responsible commerce.

ST	بِالضَّمَانِ الْخَرَجِ. (<i>al-kharaju bi-a-dhamani</i>)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	Abscess with guarantee	1	1	1
ChatGPT output	Taxation with assurance	1	2	1
Gemini output	The profits go with risk.	1	2	3

The limitations of the AI models in accurately conveying the hadith's meaning were exemplified by the inability of one human expert/annotator to identify the intended message. This shared struggle highlights the inherent complexity of classical Arabic and its nuanced structure, which can pose a challenge even for human experts with native proficiency. The challenges faced by the three MT outputs were likely multifaceted, encompassing pragmatic, lexico-semantic, out-of-vocabulary (OOV), and diacritic issues. Consequently, the proposed alternative translation (profit goes with liability), which aligns the hadith with the modern legal

⁵ Ta'wīl mukhtalif al-ḥadīth (p. 330).

concept of 'buyer's withdrawal right,' provides a significantly more accessible interpretation for contemporary audiences.

Hadith 5

قَفْلَةٌ كَغَزْوَةٍ (Qaflatun ka-ghazwatin)

Narrated by Abdullah ibn 'Amr: The Prophet said, "Returning home is like initiating a military expedition." [Sunan Abu Dawud]

قَفْلَةٌ *Qaflah* refers to a single instance of returning home, which is the act of coming back from a jihad mission. The comparison to a *ghazwah* (military expedition) highlights the reward of warriors who return safely to their families is likened to the reward received by a soldier upon returning to their family after completing a successful mission on the battlefield⁶. This could also imply returning to the same expedition or engaging in another one due to the need to confront an enemy, whether or not a battle ensues. The comparison to a military expedition underscores the challenges and potential dangers that soldiers confront during their missions on the battlefield. Just as a soldier's homecoming is met with honor and recognition for their bravery and sacrifice, a traveler's safe return is also deserving of appreciation and reward for their perseverance and resilience. This hadith emphasizes the immense reward a soldier receives upon returning home. The Prophet compares a soldier's safe return *qaflah* to the successful completion of a military expedition *ghazwah*. The hadith underscores the great reward a warrior achieves, not just for participating in jihad, but for the successful completion of their mission and the joy of reuniting with their family.

ST	قفلة كغزوة (Qaflatun ka-ghazwatin)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	A lock like a raid.	1	1	1
ChatGPT output	A blockade like a siege.	1	1	1
Gemini output	Returning home from a journey is like a military expedition.	2	2	1

A comparative analysis of MT outputs for this Hadith reveals shortcomings in capturing the nuanced meaning. While both Google Translate (GT) and ChatGPT appear to miss the pragmatic, contextual, and cultural intent, Gemini's translation offers a very close rendition, albeit with WSD and contextual meaning. Scholars' explanations suggest *qaflah* signifies returning from a military expedition, not a journey. This

⁶ Sharḥ Maṣābīḥ as-Sunnah by Ibn al-Malik (336/4)

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highlights a potential lexico-semantic challenge in interpreting classical terminology within the hadith. To address this, an alternative translation could be: "Returning from Jihad/military expedition in the cause of Allah grants you the same reward as initiating it." This phrasing emphasizes the centrality of the soldier's purpose and aligns with the concept of reward for both participation and safe return.

Hadith 6

هَلَاكَ الْمُتَنَطِّعُونَ (*Halaka al-mutanatt'oona*)

Narrated by 'Abdullah ibn Mas'ūd: The Prophet said: "Those who delve into [unnecessary] matters are doomed." [Sahih Muslim (2055/4)]

Al-Mutanatt'oun refers to those who delve too deeply into matters that are beyond their comprehension or that have no practical benefit⁷. They often engage in theological debates and discussions about intricate concepts that are beyond the grasp of their intellect. This can lead them astray from the true path of Islam and cause them to fall into error. It emphasizes focusing on essential Islamic knowledge and seeking guidance from qualified scholars for intricate issues. The key message is one of humility and prioritizing action over intellectual debate. True piety lies in following Islamic teachings and living a righteous life, not in grappling with concepts beyond human comprehension.

ST	هَلَاكَ الْمُتَنَطِّعُونَ (<i>Halaka al-mutanatt'ouna</i>)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	The foolish ones perished.	1	2	2
ChatGPT output	The overbearing ones have perished.	1	2	3
Gemini output	The extremists will perish.	3	3	4

A comparison of machine translations for this Hadith reveals shortcomings in capturing the full meaning. While both Google Translate (GT) and ChatGPT likely deliver grammatically sound outputs, they might miss the mark due to WSD, OOV, contextual, pragmatic and lexico-semantic issues. Scholars define *al-mutanatt'oun* as someone who excessively delves into complex matters beyond their grasp, a concept not fully conveyed by "foolish" or "overbearing" translations seen in GT and ChatGPT. Gemini's rendering appears more accurate, capturing the essence of exceeding reasonable limits in knowledge pursuit, which aligns better with the Hadith's intended message.

⁷ Ma'ālim al-Sunan (Sharḥ Sunan Abī Dāwūd) (300/4)

Hadith 7

أَرْضُوا مُصَدِّقِيكُمْ (Arḍū muṣaddiqikum)

Narrated by Jarīr ibn ‘Abd Allāh: Some Bedouins came to the Prophet and said: "Some of the collectors of alms come to us and wrong us." The Prophet said: "Satisfy your collectors of alms." [Sahih Muslim (685/2)]

The Prophet's instruction to "satisfy your collectors of alms" *Irḍū muṣaddiqikum* should not be interpreted as condoning any wrongdoing on the part of the collectors. Rather, it is a reminder to the Bedouins to fulfill their obligation to pay the alms (zakat) willingly and graciously, even if the collectors may be harsh or demanding⁸. While the Prophet instructs the people to "satisfy" the collectors, this doesn't mean excusing mistreatment. Instead, it encourages respectful communication when there are concerns about collector behavior. If issues persist, seeking guidance from religious leaders or authorities is advised. Ultimately, the hadith reminds us of the virtues of patience, cooperation, and understanding, as everyone is accountable to Allah for their actions, both those giving zakat and those collecting it.

ST	أَرْضُوا مُصَدِّقِيكُمْ (Irḍū muṣaddiqikum)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	Satisfy your believers.	1	2	1
ChatGPT output	Be satisfied with your witnesses.	1	1	1
Gemini output	Satisfy your collectors.	2	2	3

A comparative analysis of the LLM translations for this Hadith reveals limitations despite providing identical prompts and diacritics. Both Google Translate (GT) and ChatGPT produced inaccurate outputs due to WSD, OOV, misinterpretations of the diacritics on the term مُصَدِّقِيكُمْ (*muṣaddiqikum*). This resulted in mistranslations like "believers" (GT) and "witnesses" (ChatGPT), highlighting lexico-semantic, pragmatic challenges, and lack of incorporation between diacritics and contextual information.

While Gemini's translation appears most accurate in context, it could benefit from further clarification. "Satisfy your collectors" might not fully convey the intended meaning. An additional term like "zakat collectors" or a bracketed explanation like "[collectors of alms]" could enhance clarity and capture the specific nuance of the Hadith.

⁸ Sharḥ an-Nawawī ‘alā Muslim (73/7)

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Hadith 8

اِعْقَلْهَا وَتَوَكَّلْ (*i 'qilha wa-tawakkal*)

Narrated by Anas: A man came to the Prophet and said, "O Messenger of Allah, should I tie the camel up and rely on Allah, or should I let it loose and rely on Allah?" The Prophet said, "Tie it up and rely on Allah." [Narrated by at-Tirmidhi]

To unpack the Prophet's instruction, *i 'qilha* functions as an imperative verb, literally meaning "tie it up" and referring specifically to securing the camel's leg with a rope. *Wa-tawakkal* is another imperative verb preceded by a coordinating conjunction 'and', translating to "and rely on Allah." The Prophet's instruction to "tie it up and rely on Allah" is not meant to imply that relying on Allah alone is not sufficient. Rather, it is a reminder that we should take the necessary precautions and make the appropriate efforts, while also placing our ultimate trust in Allah. It also highlights the importance of taking precautions and being cautious. While reliance on Allah is essential, it does not mean neglecting our responsibilities or failing to take practical steps⁹.

ST	اِعْقَلْهَا وَتَوَكَّلْ (<i>i 'qilha wa-tawakkal</i>)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	Make sense of it and trust.	1	3	3
ChatGPT output	Be reasonable and rely (on God).	2	3	4
Gemini output	Tie your camel and trust in Allah.	3	4	4

Understanding the background context is critical for accurately translating and conveying the meaning of a hadith. In this case, both Google Translate ("make sense") and ChatGPT ("be reasonable") fail to capture the specific nuance of the imperative verb "*i 'qilha*." These mistranslations stem from WSD, lexico-semantic, contextual, cultural, and pragmatic challenges arising from the unstated situation surrounding the hadith. While Gemini's translation ("tie your camel") correctly references the action itself, the output translation "tie your camel and trust in Allah" should not be taken as a literal translation, but rather a metaphorical plausible one. A more comprehensive and pragmatically accurate rendition would be something like "Do your best (or 'Do your part'/'Do whatever you can') followed by "and trust in Allah." This

⁹ Fayḍ al-Qaḍīr (2/7)

phrasing emphasizes the importance of both taking necessary precautions ("Do your best") and maintaining reliance on God ("trust in Allah").

Hadith 9

السُّفْلُ أَرْفَقُ (*as-suflu arfaqu*)

Narrated by Abu Ayyub: The Prophet came to him as a guest, so the Prophet stayed downstairs and Abu Ayyub stayed upstairs. Abu Ayyub woke up one night and said, "We are walking over the head of the Messenger of Allah." So they moved aside and stayed on the side. Then he said to the Prophet, and the Prophet said, "Downstairs is more comfortable." [Sahih Muslim (1623/3)]

The CA term السُّفْلُ *as-suflu* means "downstairs" or "the lower level.", while أَرْفَقُ *arfaqu* is the comparative form of the verb رَفَقَ *rafaqa*, which means "to be comfortable" or "to be easy." So, أَرْفَقُ means "more comfortable." The Prophet's statement "Downstairs is more comfortable" means that he preferred to stay in the lower level of Abu Ayyub's house because it would be less disruptive to Abu Ayyub and his family. It shows the Prophet's humility and consideration for others. It also highlights the importance of respecting and honoring those who are more knowledgeable and virtuous.¹⁰ It teaches us that we should sometimes put the needs of others before our own.

ST	السُّفْلُ أَرْفَقُ (<i>as-suflu arfaqu</i>)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	The lower part is thinner.	1	2	1
ChatGPT output	The lower (position) is more gentle.	1	2	4
Gemini output	The lower place is more comfortable.	4	3	4

While Google Translate's "thinner" is too literal due to diacritic, OOV, and lexico-semantic issues (*as-suflu* meaning lower level, not thin), ChatGPT's "more gentle" is communicative but not fully accurate (bracketed "position" indicates the model's own uncertainty about the translation) indicating the model's need for the religious domain fine-tuning. Gemini's "more comfortable" emerges as the best by using "place" and "more comfortable," directly reflecting the Prophet's preference for the lower level based on comfort (*arfaqu*). Linguistically, proper diacritics are crucial in this context and signify a specific location. Without the diacritic, MT tools might struggle to distinguish it from other possible

¹⁰ As-Sirāj al-Munīr Sharḥ al-Jāmi' al-Ṣaḡhīr fī Ḥadīth al-Bashīr an-Naḍīr (233/3)

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meanings. Contextually, choosing the lower level reflects humility and minimizing disruption to the host, aligning with Arabic hospitality customs.

Hadith 10

السُّلُّ شَهَادَةٌ (*as-sallu shahādatun*)

Narrated by 'Ubādah ibn al-Sāmit: The Messenger of Allah said: "Tuberculosis is a martyrdom (*shahāda*)." [Reported by Ibn Ḥibbān]

Tuberculosis: The Arabic word *as-sallu* (السُّلُّ) specifically refers to tuberculosis, a contagious infectious disease that primarily affects the lungs. It is an ulcer in the lung accompanied by a low fever. Its cause is the constant exposure to cold and dry substances like beef meat and moldy mixture or spoilage.¹¹ The Arabic term *shahāda* (شهادة) is correctly translated here as "martyrdom." It suggests that suffering from tuberculosis, due to the hardships and potential isolation it causes, can be considered a form of martyrdom. The patient's endurance and perseverance in the face of this illness is seen as a test of faith and a testament to one's strength. It acknowledges the immense difficulties associated with tuberculosis and offers spiritual comfort and recognition to those who are afflicted with it. It is also important to note that this hadith does not negate the importance of seeking medical treatment for tuberculosis.

ST	السُّلُّ شَهَادَةٌ (<i>as-sallu shahādatun</i>)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	TB certificate.	1	1	1
ChatGPT output	Silence is a testimony.	1	1	1
Gemini output	Tuberculosis is martyrdom, 'or' To die out of tuberculosis is like a martyr's death.	4	4	4

Machine translations for this hadith showcase both promise and limitations. The translation attempts of ChatGPT's ("silence" and "testimony") and Google Translate's ("certificate") miss the religious meaning of "*shahada*" (martyrdom). These literal translations failed to capture the essence of the hadith due to encountering unfamiliar terms (OOV), misinterpreting the word meaning of *shahada* (WSD), and neglecting the importance of context. On the other hand, Gemini's

¹¹ Fayḍ al-Qadīr (145/4)

("tuberculosis is a martyrdom") excels and targets the intended meaning. It captures both the medical reality and the concept of suffering as a test of faith embedded in *shahada*, highlighting the challenges of polysemy and the importance of understanding the religious context for accurate translation. By considering both the medical aspect of the disease and the spiritual dimension of suffering, Gemini's translation provides a more pragmatic and religiously appropriate rendering of the hadith.

Hadith 11

أَكْرِمُوا الشَّعْرَ (*Akrimū ash-sha'ra*)

Narrated by 'Aishah: The Messenger of Allah said: "Honor the hair." [Reported by al-Bazzar]

This Hadith encourages Muslims to care for their hair, which can involve combing, oiling, maintaining hygiene, and trimming.¹² Honoring the hair is seen as part of overall cleanliness emphasized in Islam, contributes to personal aesthetics, and may hold cultural or religious significance in some traditions. While appearance is not the sole focus, this hadith promotes a balanced approach to caring for oneself physically and spiritually.

ST	أَكْرِمُوا الشَّعْرَ (<i>Akrimū ash-sha'ra</i>)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	Honor poetry.	1	1	1
ChatGPT output	Honor poetry.	1	1	1
Gemini output	Honor the hair.	3	4	3

While the Arabic hadith was provided with proper diacritics to distinguish between the homonymous words (*ash-sha'ru* "hair" vs. *ash-shi'ra* "poetry"), both Google Translate's and ChatGPT's ("honor poetry") misinterpreted the intended meaning. This is because their outputs reflect a different diacritic placement on the second and final letters (fathah vs. kasrah, and fathah vs. dammah). These seemingly minor variations create entirely different words with distinct meanings. In contrast, Gemini's translation ("honor the hair") accurately captured the intended meaning by correctly processing the diacritics. This output is encouraging for the future of Gemini's AI tool in providing accurate religious translations after further refinement.

¹² Fayd al-Qadīr (94/2).

Hadith 12

الرُّقْبَى جَانِزَةٌ (1) (*ar-Ruqba ja'izah*)

Narrated by Zaid bin Thabit: The Prophet said, "The *ruqba* (conditional gift) is permissible." [Sunan al-Nasa'i]

The *ruqba* is a type of conditional gift. For example, someone might say to another, "I give you this house, with the condition that it reverts to me if I die before you. However, if you die before me, the house becomes yours permanently." This type of gift is similar to a hanging rope, as each person is waiting for the other to die. In pre-Islamic era, this practice was common, yet the Prophet clarified that it is permissible under Islamic law as well¹³.

The term *ruqba* is derived from the Arabic word *raqabah*, which means "to observe" or "to watch." This aptly reflects the nature of the *ruqba* transaction, where each party is essentially "watching" for the other's demise to determine the final ownership of the property. Another related concept is the *العُمْرَى* *umra*, which refers to a conditional gift granted for the lifetime of either the giver or the recipient. The term *umra* is derived from the Arabic word *umr*, meaning "lifetime." Both the *ruqba* and *umra* involve conditional ownership transfers based on the lifespan of the parties involved. While some scholars have distinguished between the two, the prevailing opinion considers them to be essentially equivalent, as both represent conditional gifts with similar underlying principles.

ST	الرُّقْبَى جَانِزَةٌ (<i>ar-Ruqba ja'izah</i>)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	Al-Raqbi is a prize.	1	1	1
ChatGPT output	Neck is a prize.	1	1	1
Gemini output	Usufruct is permissible.	4	3	4

While Geminin accurately translated the word *ja'izah* (permissible), it, along with Google Translate and ChatGPT, struggled with the classical term *ar-Ruqba*. The orthographic and homonymous similarity between *ar-Ruqba* and the word for "neck" likely led to the incorrect transliteration offered by Google Translate ("Al-Raqbi..") and ChatGPT ("Neck.."). All three machine translation tools failed to grasp the complexity of *ar-Ruqba* as a polysemous, homonymous, WSD, and OOV term with a specific legal meaning in this context. This misunderstanding resulted in mistranslations and the inability to capture the intended communicative meaning due to lexicosemantic and pragmatic challenges.

¹³ at-Tanwir Sharh al-Jami' as-Saghir (303/6)

Hadith 13

2) أَصْرَفْ بَصْرَكَ (*iṣrif baṣaraka*)

Narrated by Jabir ibn 'Abd-Allah, who said: I asked the Messenger of Allah about the glance of a sudden encounter. He replied: "Avert your gaze." (Sunan Abu Dawud)

This hadith emphasizes the importance of averting one's gaze in situations where there is a risk of falling into sin, particularly in the context of interactions with the opposite gender. The Prophet's instruction to "avert your gaze" (أَصْرَفْ بَصْرَكَ) highlights the significance of guarding one's eyes from temptations that could lead to sinful thoughts or actions. By controlling one's vision, muslims can safeguard their hearts from temptation and maintain purity of intention. While unintentional glances are not considered sinful, the Prophet's instruction serves as a reminder to be mindful and avoid situations that could lead to inappropriate interaction, ultimately contributing to a more respectful and wholesome social environment.

ST	أَصْرَفْ بَصْرَكَ (<i>iṣrif baṣaraka</i>)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	Avert your gaze.	4	4	4
ChatGPT output	Lower your gaze.	4	4	4
Gemini output	"Turn away your gaze" or "Avert your eyes".	4	4	4

All three machine translation tools (Google Translate: "avert your gaze," ChatGPT: "lower your gaze," and Gemini: "turn away your gaze" or "avert your eyes") successfully captured the intended meaning of the hadith. This is because the Arabic phrase used in the modern standard Arabic (MSA) text carries a clear and consistent pragmatic meaning, making it easier for the MT tools to translate it accurately.

Hadith 14

المؤمنُ مُكْفِرٌ (*al-Mu'minu mukaffirun*)

Narrated by Abu Hurairah, who said: The Prophet said: "The believer is constantly atoning." (Reported by al-Hakim)

The phrase "المؤمنُ مُكْفِرٌ" *al-Mu'minu mukaffirun* literally translates to "the believer is atoning." However, this does not mean that believers are

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constantly sinning and repenting. Rather, it refers to the various ways in which believers' sins are expiated throughout their lives¹⁴.

This hadith, although seemingly stating "the believer is constantly atoning" offers a message of hope and reassurance, it does not imply that believers are perpetually sinning. Instead, it highlights the various ways Allah forgives and purifies believers throughout their lives. Difficulties, good deeds, and sincere seeking of forgiveness can all contribute to the expiation of sins. The hadith serves as a reminder of Allah's encompassing mercy and the opportunities for believers to strive for righteousness and seek forgiveness. It is not meant to discourage seeking forgiveness, but rather to emphasize that even those who have committed sins can find forgiveness through Allah's grace. Furthermore, the hadith highlights the importance of patience during hardships, as these trials can serve as a means of purification and growth in faith.

ST	المؤمنُ مُكْفِرٌ (<i>al-Mu'minu mukaffirun</i>)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	The believer is an unbeliever.	1	1	1
ChatGPT output	The believer is an expiator.	2	1	3
Gemini output	The believer is forgiven.	3	3	4

Among the machine translations, Gemini ("The believer is forgiven") stands out for capturing the intended meaning most precisely. While ChatGPT's translation ("The believer is an expiator") might seem conceptually relevant, it deviates from the original meaning in the hadith text. Google Translate's offering ("The believer is an unbeliever") is a significant mistranslation due to the complex cultural and religious connotations associated with the homonymos term *mukaffirun* which is incorrectly rendered as "unbeliever". A more nuanced translation could be "A believer's sins are forgiven." The challenges faced by the translation tools stem from a combination of processing the diacritics, OOV, limitations in understanding the full context (lexicosemantic issues), and conveying the intended message (pragmatic difficulties).

Hadith 15

الْأَيْمَنَ فَأَلْأَيْمَنَ (*al-aimana fa-l-aimana*)

Narrated by Anas ibn Malik, who said: The Messenger of Allah was brought some milk that had been diluted with water from the well. There was a nomadic Arab to his right and Abu Bakr al-Siddiq to his left. He

¹⁴ Sharḥ al-Jāmi' al-Ṣaḡīr (453/10)

drank from it, then gave it to the nomadic Arab, and said: "From right to left." [Sahih al-Bukhari]

In this hadith, the Prophet demonstrates the etiquette of sharing with others. He drinks from the milk first, then gives it to the Arab who is sitting to his right, even though Abu Bakr al-Siddiq, a close companion of the Prophet, is sitting to his left. The Prophet's action of giving the milk to the nomadic Arab first can be understood in two ways: 1) Honoring the guest: The nomadic Arab may have been a guest of the Prophet, and it is customary to honor guests by giving them precedence. 2) Prioritizing those in need: The nomadic Arab may have been in more need of milk than Abu Bakr, and the Prophet may have given it to him out of compassion.

The Prophet's saying, "From right to left," is a general principle that can be applied in many situations. It means that when sharing something, it is best to start with the person on your right and then go around the circle clockwise. This is a way of showing respect and equality to everyone involved. The hadith also highlights the importance of generosity and sharing with others, in addition to the Prophet's actions and words to serve as a model for Muslims on how to behave in social situations.

ST	الْأَيْمَنَ فَأَلَايْمَنَ (al-aimana fa-l-aimana)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	The right, then the right.	1	2	3
ChatGPT output	The right, then the right.	1	2	3
Gemini output	From right to left.	4	3	4

Among the machine translations, Gemini ("from right to left") stands out for its accuracy. It effectively captures the core meaning of the hadith and translates smoothly into the target language. In contrast, Google Translate and ChatGPT's translations ("the right, then the right") are overly literal and fail to convey the deeper, pragmatic message of the Hadith. The challenge for these tools lies in understanding the intended religious Islamic etiquette and cultural context, which goes beyond a simple word-for-word translation.

Hadith 16

أَحَدٌ أَحَدٌ (Ahidd Ahidd)

Narrated by Sa`d ibn Abi Waqqas: the Prophet passed by me while I was supplicating with two fingers, and he said, *uhidd uhidd* (point with one finger), and he pointed with his index finger.

[Sunan at-Tirmidhi and Sunan an-Nasa'i]

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The word *uhidd* is derived from the root "*wahhada*" (to unify), with the "*waaw*" being replaced by a hamzah. It is an imperative form, meaning "point with or use one finger." The Prophet was instructing Sa`d to point with only one finger during supplication, as the One he is supplicating is One (i.e. Allah). Sa`d had been pointing with two fingers, so the Prophet corrected and instructed him to use only one finger, the index finger¹⁵. The repetition of *uhidd* emphasizes the importance of pointing with one finger. Moreover, it highlights the importance of proper etiquette and manners when supplicating to Allah. It also serves as a reminder of Allah's oneness and singularity.

ST	أَجِدْ أَجِدْ (<i>uhidd uhidd</i>)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	Identify, identify.	1	1	4
ChatGPT output	Prepare, prepare.	1	1	1
Gemini output	Make it clear, make it clear.	1	1	4

Current output translations by LLMs such as Gemini, and ChatGPT, in addition to the NMT's Google Translate all fall short of capturing the intended meaning of the phrase "أَجِدْ أَجِدْ" *uhidd, uhidd*. This is primarily due to the technical and religious context of the word. While the presence of diacritics and the prompts provided to the LLMs might be helpful for standard Arabic translations, they are insufficient for this specific term. "*أحد uhidd*," as explained in the provided hadith, carries a specialized meaning within Islamic supplication practice: "Point with one finger when you supplicate (because Allah is One)." This highlights the lexicosemantic, WSD, OOV, cultural, contextual, pragmatic, and religious technical reference challenges faced by LLMs in accurately translating such nuanced expressions.

Hadith 17

3) الوترُ بَلِيلٍ (*al-Witru bi-Laylin*)

Narrated by Abu Sa`id al-Khudri: The Prophet said: "The Witr prayer is performed at night." [Reported by Imam Ahmad, and its transmission chain is deemed sound.]

This hadith signifies that the Witr, a special one-rakat prayer following the Isha prayer, should be performed during the nighttime hours. Most scholars, including Imam Malik and Imam Ahmad, agree on this timing. However, Imam Shafi'i, based on the principle of "ease" (*tayysir*) in

¹⁵ Sharh Abi Dawood lil-al-'Aini (410/5)

Islamic law, holds that the Witr can also be offered after Fajr prayer¹⁶. While the majority view emphasizes the importance of performing it at night, Imam Shafi'i's opinion acknowledges situations where offering it later might be more practical.

ST	الوترُ بَلِيل (al-Witru bi-Laylin)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	The string is at night.	1	1	1
ChatGPT output	The odd number is in the night.	1	3	1
Gemini output	Witr prayer is at night.	4	4	4

Among the LLMs tested, only Gemini accurately captured the meaning of the hadith "الوترُ بَلِيل" *Al-Witru bi-Laylin* with its translation "Witr prayer is at night." Both Google Translate's "the string is at night" and ChatGPT's "the odd number is in the night" missed the mark. This primarily stems from the polysemy of the word "وتر" *Witr*, which can have different meanings depending on context. Google Translate likely struggled due to OOV, WSD, and the lack of surrounding information and context. However, ChatGPT's case is more concerning. Despite receiving accurate prompts, its output "the odd number" suggests WSD and a misunderstanding of both the pragmatic and lexicosemantic aspects of the word "*Witr*" in this specific religious context. Transliterating the term *witr* is a good option due the lexical gap in the target language.

Hadith 18

لِلْوَزَغِ الْفَوَيْسِقِ (*li-l-wazaghi al-fuwaisiq*)

Narrated by Aisha: The Prophet said, "The gecko is a fasiq (sinful creature)."¹⁷

The prepositional Lam ("لـ") in "لِلْوَزَغِ" *li-l-wazaghi* functions similarly to "عن" ("about"), indicating the Prophet is attributing the characteristic of "*fasq*" (sinfulness) to the gecko. This implies the gecko's perceived harmful nature makes it a sinful creature. The term "فويسق" *fuwaisiq* is a diminutive form of "فاسق" *fasq*, emphasizing the gecko's transgression. "*fasq*" refers to actions violating Islamic law and morality, encompassing a range of transgressions. Here, it suggests the Prophet viewed the gecko's behavior as undesirable or harmful. It is important to remember that while the hadith is considered authentic, the interpretation of its meaning regarding the gecko's sinfulness has been debated by scholars. The hadith serves as a reminder of respecting all creatures while acknowledging some may pose a threat.

¹⁶ Sharh al-Jami' al-Saghir (485/2)

¹⁷ (Sahih al-Bukhari, 128/4), <https://sunnah.com/search?q=kill+gecko>

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ST	لِلْوَزَغِ الْفُوَيْسِقِ (<i>li-l-wazaghi al-fuwaisiqu</i>)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	For the gecko, the fox.	1	1	1
ChatGPT output	For the gecko, the voice.	1	1	1
Gemini output	The salamander is a mischief-maker.	4	3	4

Both Google Translate ("for the gecko, the fox") and ChatGPT ("for the gecko, the voice") struggled to capture the intended meaning of the word "الفُوَيْسِقِ" *al-fuwaisiqu*. This difficulty likely stems from the hadith's unique structure and the use of less common vocabulary. Conversely, Gemini's ("the salamander is a mischief-maker") appears to have grasped the nuanced meaning more effectively. This could be attributed to the clear prompts provided, guiding the AI system to consider the intended message and produce a more fitting translation. The hadith structure and morphological segmentation present a challenge. The prepositional Lam ("لـ") in "للوزغ" *li-l-wazaghi* functions similarly to "عن" ("about"), attributing a characteristic to the gecko. This structure, along with the unfamiliar term "فويسق" *fuwaisiqu*, a diminutive form of "فاسق" *fasq*, can pose syntactic and morphological difficulties for both human experts and machine translation tools. The complexity is further highlighted by a debate encountered with one of the annotators regarding the Lam's presence. Interestingly, alternative authentic narrations like Sahih an-Nasa'i (2886) found without this preposition, demonstrating the two structural possibilities in this context. Finally, a suggested translation "the gecko is vermin" could offer a potential alternative that conveys a similar negative connotation.

Hadith 19

الأَشْرَةُ شَرٌّ (*al-`ishratu sharrun*)

Narrated by al-Bara' ibn 'Azib: The Prophet said: "The arrogance is evil."¹⁸

The hadith criticizes the character trait of "الأشْر" *al-'ashr*, which translates to arrogance, pride, and excessive self-importance and it could also mean 'harshness'¹⁹. This trait can lead to negative consequences, including 1) Neglecting greetings: *Al-'ashr* can cause someone to disregard social etiquette and fail to greet others (*salaam*). This reflects a lack of respect and consideration for others. 2) Strained relationships: Arrogance and pride can create tension and distance in relationships.

¹⁸ Reported by al-Bukhari in al-Adab al-Mufrad with a good (hasan) transmission chain.

¹⁹ Siraj al-Munir Sharh al-Jami' al-Saghir fi Hadith al-Bashir al-Nadhir (253/2)

Scholars debate the presence of the *Ta' Marbutah* ("تاء مربوطة") in "الأشيرة" *al-'ishratu*. Some argue it should be removed, leaving just "الأشهر" *al-'ashr*. Regardless of the debate, the core message is clear: Pompousness and neglecting greetings are harmful traits that should be avoided. The Prophet's condemnation of *al-'ashr* emphasizes the importance of humility, respect, and maintaining positive social interactions.

ST	الأشيرة شر (al-'ishratu sharrun)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	Evil is evil.	1	1	1
ChatGPT output	Omens are evil.	1	1	1
Gemini output	The ten are evil.	1	1	1

All three MT tools tested – Google Translate, ChatGPT, and Gemini – produced inaccurate translations of the hadith "الأشيرة شر" *al-'ishratu sharrun*. Their translations ("evil is evil," "omens are evil," and "the ten are evil") deviate from the intended meaning. This likely stems from the difficulty of the hadith, which features a rare classical notion, "الأشيرة" *al-'ishratu*. In modern standard Arabic (MSA), this term primarily conveys the concept of arrogance, haughtiness, or ingratitude. The unfamiliarity of this term for the LLMs, and NMT combined with the WSD, OOV, cultural, pragmatic, and lexicosemantic aspects of translation, contributed to the inaccurate outputs. Even the presence of diacritics could not resolve the issue due to the technical and uncommon usage of the term in this specific context. This example highlights the challenges LLMs face when encountering rare OOV and nuanced meanings in religious texts.

Hadith 20

إِيَّاي وَالْفُرَج (Iyyaaya wal-Furaja)

Narrated by Ibn Abbas and included in al-Tabarani's collection, the Prophet said: "Beware of the gaps (in the rows)". The word "إيائي" *Iyyaaya* serves as a direct warning to the listener, emphasizing the importance of avoiding distractions during prayer. This interpretation is further supported by the additional annotated text: "In prayer"; meaning in the rows. This clarification explicitly links the warning to the act of standing in prayer rows, highlighting the potential disruption caused by gaps or spaces between individuals²⁰. Ibn Hajar al-Asqalani's interpretation, which suggests the Prophet used the structure of addressing the listener as if speaking to himself for emphasis, remains relevant. This approach reinforces the personal responsibility of each individual to maintain focus and avoid distractions during prayer. The

²⁰ Al-Tanwir Sharh al-Jami' al-Saghir (415/4)

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overall message of the hadith remains clear: worshippers should strive to maintain their focus and concentration during prayer by avoiding both internal distractions like talking to themselves and external distractions like gaps in the rows. This promotes a more unified and focused experience for the congregation, allowing them to fully engage with the act of prayer.

ST	إِيَّاي وَالْفَرْجَ (Iyyaaya wal-Furaja)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	Me and the private parts.	1	1	1
ChatGPT output	To me is the relief.	1	1	1
Gemini output	Beware of the gaps.	3	3	4

Machine translation (MT) tools, including Google Translate and ChatGPT, struggled to accurately translate the hadith "إِيَّاي وَالْفَرْجَ" (*Iyyaaya wal-Furaja*) due to a combination of factors. Both translations ("Me and the private parts" and "To me is the relief") missed the intended meaning. This difficulty likely stems from 1) Misinterpreting diacritics: uncomprehending diacritics can lead to confusion and misinterpretations, as evidenced by GT's mistranslation of the homonymous word "الْفَرْجَ" *al-faraj* with "private parts" (الْفُرُوجَ, *al-furūj*). 2) Lexicosemantic, OOV, WSD, and pragmatic challenges: Understanding the nuanced meaning of "إِيَّاي" (*Iyyaaya*) requires considering both the vocabulary and the pragmatic context of the hadith. Both MT systems struggled with this aspect. In contrast, Gemini's ("Beware of the gaps") captured the intended meaning more effectively. This suggests that Gemini's approach to handling diacritics, vocabulary, and context may be more successful in translating such religious texts. While Gemini's translation is generally accurate, it might benefit from additional context. For instance, adding bracketed clarification like "Beware of the gaps (between worshippers in congregational prayer)" could enhance clarity for non-Arabic speakers. Overall, translating this hadith highlights the ongoing challenges and potential improvements in the field of machine translation, particularly when dealing with religious texts that rely heavily on diacritics, nuanced, polysemous, and homonymous vocabulary, and specific contexts.

Hadith 21

المستشار مؤتمن (*al-Mustashāru mu'tamanun*)

Narrated by Abu Hurairah: The Prophet said, "The one who is consulted is a trustee."

In the hadith, the Prophet emphasizes the ethical considerations involved in seeking and providing counsel. The statement "المستشار مؤتمن" *al-*

mustashāru mu'tamanun highlights the advisor's responsibility to act with trustworthiness. This trust encompasses confidentiality, offering the best possible guidance based on knowledge and judgement, and striving for a positive outcome²¹. While the hadith does not guarantee infallible advice, it encourages advisors to exercise diligence²². The person seeking counsel also plays a part in providing accurate information to facilitate an informed consultation. Ultimately, this hadith promotes seeking advice from trusted individuals while emphasizing the importance of mutual respect, confidentiality, and a shared commitment to finding the best solutions.

ST	المستشار مؤتمن <i>(al-Mustashāru mu'tamanun)</i>	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	The advisor is trustworthy.	2	2	3
ChatGPT output	The advisor is trustworthy.	2	2	3
Gemini output	The advisor is a trustee.	2	3	4

While all three MT tools – GT and ChatGPT's ("the advisor is trustworthy") and Gemini's ("the advisor is a trustee") – offered similar translations, these translations may not fully capture the nuanced meaning of the hadith "المستشار مؤتمن" *al-mustashāru mu'tamanun*. The key challenge lies in accurately conveying the specific connotations of the Arabic terms. "مستشار" *mustashār* goes beyond a simple "advisor" in the modern sense; it is not a position. It emphasizes any individual whose advice is actively sought in a particular situation. Similarly, "مؤتمن" *mu'taman* carries a broader meaning than just "trustworthy" or "trustee." It signifies someone entrusted with a responsibility, including confidentiality and offering honest guidance. A more accurate translation might be "Whoever is consulted is in a position of trust" highlighting the ethical obligations and responsibilities of the advisor. This hadith exemplifies the Prophet's use of "جوامع الكلم" *Jawāmi' al-kalim*, conveying rich and concise meaning with few words. Here, two words encapsulate the importance of trust, confidentiality, and honest advice in the context of seeking counsel. Overall, this hadith translation demonstrates the limitations of MT tools in rendering the full depth and specific nuances of religious texts. Accurate translation requires an understanding of the cultural and contextual implications beyond the literal meaning of individual words.

²¹ Ma'ālim as-Sunan (149/4)

²² Fayd al-Qadīr (268/6)

Hadith 22

المنتعل ركب (*al-Muntali'u raakibun*)

Ibn 'Asakir, narrated from Anas ibn Malik: The Prophet said, "The one who wears shoes is a rider." The hadith "المنتعل ركب" *al-Muntali'u raakibun* highlights the parallel between wearing shoes and riding, emphasizing the comfort and ease of movement provided by both²³. This analogy underscores the practical importance of shoes, particularly in a cultural context where footwear was not as ubiquitous as it is today. Shoes alleviate the fatigue and discomfort associated with walking, especially on uneven or challenging terrain. This parallels the role of a mount in carrying a rider, reducing the need for physical effort. The hadith also carries deeper symbolic meaning. The act of wearing shoes can represent preparation, readiness, and embarking on a journey. This interpretation aligns with another narration of this hadith that during a military expedition, Jābir ibn 'Abd Allāh said (I heard the Prophet say during an expedition we undertook: "Stock up on shoes; for a man remains a rider as long as he is wearing shoes."). This narration reinforces the notion that shoes are essential for embarking on any endeavor, whether physical or metaphorical. Overall, this hadith serves as a reminder of the practical value of shoes and their symbolic significance. It highlights the importance of preparation, readiness, and the role of footwear in facilitating movement and enhancing well-being.

ST	المنتعل ركب (<i>al-Muntali'u raakibun</i>)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	The one wearing shoes is riding.	2	3	3
ChatGPT output	The one wearing shoes is a rider.	2	3	4
Gemini output	The one who wears shoes is a rider.	2	3	4

While all three MT tools may have captured the general meaning of the hadith, additional context could enhance understanding for non-Arabic speakers. The Prophet's encouragement to "stock up on shoes" can be further explained through footnotes. These notes could clarify that the context is a military expedition, where comfortable and durable footwear is crucial for long journeys and potentially harsh terrain. The footnote could also highlight the hadith's use of metaphor. Translating the hadith's style accurately from Arabic to English can be challenging. The Arabic phrase uses a metaphor to emphasize the comfort provided by shoes.

²³ at-Tanwīr sharḥ al-jāmi' al-ṣaḡīr (492/10)

However, in English translation, a simile ("like a rider") might be more readily understood by non-native speakers. This approach prioritizes clarity over a strictly literal rendering of the metaphor. Overall, achieving an accurate and culturally sensitive translation of religious texts requires careful consideration of context, figurative language, and the target audience's understanding. Footnotes and explanatory notes can play a valuable role in this process.

Hadith 23

النَّارُ جُبَّارٌ (*an-Nāru jubbārun*)

Narrated by Abu Hurairah: "The Prophet said, 'the injuries caused by an unintentional fire goes without liability.'" [Sahih Ibn Majah]

The hadith statement "النَّارُ جُبَّارٌ" *an-Nāru jubbārun*," can be interpreted within the legal context of injuries sustained due to unintentional fire. The word "جُبَّارٌ" *jubbārun* emphasizes the uncontrollable nature of fire. In this context, it suggests that if someone or something is injured or damaged as a result of an unintended fire, they are not considered liable for their injuries or damage²⁴. This interpretation acknowledges the unpredictable nature of fire and the possibility of accidents beyond human control. It is important to remember that specific legal rulings within Islamic jurisprudence would depend on the details of each case. However, this hadith serves as a foundation for understanding that unforeseen injuries or damages caused by an unintentional fire do not automatically incur liability for the injured person or utility.

ST	النَّارُ جُبَّارٌ (<i>an-Nāru jubbārun</i>)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	Fire is mighty.	1	3	1
ChatGPT output	Fire is tyrannical.	1	3	1
Gemini output	Fire is a tyrant.	1	3	1

In translating the hadith "النَّارُ جُبَّارٌ" *an-Nāru jubbārun*, the three MT tools faced major challenges due to the hadith complexity. The hadith's brevity and lack of context can be difficult for MT tools to grasp. Additionally, diacritics, crucial for differentiating words like "جَبَّارٌ" (*jabbārun*, meaning "mighty" or "tyrant") and "جُبَّارٌ" (*jubbārun*, with a possible meaning of "unliable" or "uncompensated"), were likely ungrasped by the MT systems. Furthermore, the specific CA meaning of "جُبَّارٌ" *jubbārun* in this context may be less common and not readily available in MT dictionaries. While the translations focused on "fire," the core message likely addresses the consequences of an unintentional fire, particularly the

²⁴ Sharḥ al-Masābiḥ li-Ibn al-Malik (471/3)

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potential lack of liability for those injured. Ultimately, accurate translation of hadith requires understanding the nuances of classical Arabic, including diacritics, lexical subtleties, and pragmatic context, as this example demonstrates the complexities of MT in religious texts where lexicosemantic, OOV, WSD, pragmatic, and diacritic issues can combine to create significant challenges.

Hadith 24

جِهَادُكُنَّ الْحَجَّ (*Jihādakuna al-Hajju*)

Narrated by Aisha, she said: "I asked the Prophet for permission to engage in *Jihad*, but he replied: 'Your (women's) Jihad is the Hajj.'" [Sahih al-Bukhari (4/32)]

This hadith, according to Ibn Baṭṭāl's commentary²⁵, signifies that obligatory military Jihad is not a requirement for women. The Qura'nic verse "March forth, no matter whether you are lightly or heavily armed," (Q. 9:41) (Translation Abdel Haleem, 2004) is interpreted as not encompassing women's duties. This understanding reflects the scholarly consensus on that matter. While the hadith does not necessarily exclude women from military Jihad in extraordinary circumstances, it emphasizes Hajj (pilgrimage) as their primary form of Jihad.

ST	جِهَادُكُنَّ الْحَجَّ (<i>Jihādakuna al-Hajj</i>)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	Your effort is Hajj.	1	3	2
ChatGPT output	Your Jihad is pilgrimage.	3	3	4
Gemini output	Your Jihad is Hajj.	3	3	3

While both ChatGPT ("Your Jihad is Pilgrimage") and Gemini ("Your Hajj is Jihad") captured the core message of the hadith, a closer look reveals some nuances. Google Translate's use of "effort" for "Jihad" loses the specific religious connotation of striving in the way of Allah. A more accurate rendering would retain "Jihad" with an explanatory note or use a term like "religious struggle." Furthermore, translating the second-person plural feminine pronoun "*kunna*" (indicating women) as a simple "you" creates a lexical gap. In English, "you" can be singular or plural and doesn't differentiate gender. A more precise translation would be "your (women's)" or "the Jihad of you (women)" to address the specific audience. Overall, translating this hadith requires attention part of speech (POS) tagging and the morphological segment, in addition to both the

²⁵ Sharḥ Ṣaḥīḥ al-Bukhārī li-Ibn Baṭṭāl (5/75)

intended meaning and the limitations of the target language to convey the message accurately and inclusively.

Hadith 25

أُولَئِكَ لَكُمْ تَوْبَانِ (’awla li-kullukum thawbān)

Narrated by Abu Hurairah, a man asked the Prophet about praying in a single garment. The Prophet replied, "Does each of you have two garments?" (Sahih al-Bukhari, 1/81)

This hadith indicates that not everyone possesses two garments. If two garments were mandated for prayer, those unable to afford them would be unable to pray, causing hardship. As Allah has stated, "He has placed no hardship in your religion" (Q. 22:78)²⁶ (Translation Abdel Haleem, 2004). The hadith highlights the Prophet's pragmatic approach to religious rulings, emphasizing ease and accessibility for all. It demonstrates his understanding of the varying circumstances of his followers and his concern for preventing undue hardship. It also reflects the principle of leniency in Islam, emphasizing that religious obligations should not be a burden but rather a source of guidance and spiritual fulfillment. This hadith serves as a reminder of Islam's emphasis on practicality, compassion, and the well-being of its adherents.

ST	أُولَئِكَ لَكُمْ تَوْبَانِ (’awla li-kullukum thawbān)	Annotators' assessments		
		Annotator 1	Annotator 2	Annotator 3
GT output	Do you all have two garments?	2	3	4
ChatGPT output	Each of you has two garments.	2	2	4
Gemini output	Do each of you have two garments?	4	3	4

Both Gemini’s translation ("Do each of you have two garments?") and Google Translate's ("Do you all have two garments?") capture the essential meaning of the hadith. However, both introduce a subtle difference by transforming the original Arabic rhetorical question into a direct question with a question mark. While both translations effectively convey the intended message, this structural change presents challenges for MT tools. Rhetorical questions in the source language can be misinterpreted as literal inquiries by MT systems, leading to inaccuracies. Understanding and translating such nuances requires a deeper context-sensitive approach that goes beyond basic word-for-word equivalence. Therefore, Gemini’s translation is not only accurate but also demonstrates strength in capturing the pragmatic meaning, even with the slight structural difference introduced.

²⁶ Sharh al-Nawawi 'ala Muslim, (231/4)

VII. Discussion

This study delves into the intricate world of translating two-word hadiths, a unique form of Islamic scripture renowned for its brevity and profound meaning. We explored the capabilities and limitations of current large language models (LLMs) and neural machine translation (NMT) tools (Google Translate, ChatGPT, and Gemini) in rendering these succinct messages from classical Arabic (CA) into English. While these tools hold promise for efficient translation, our investigation reveals significant challenges that demand further exploration.

One major hurdle encountered by all three systems was word sense disambiguation (WSD) and out-of-vocabulary (OOV) issues. Classical Arabic, with its rich vocabulary and multifaceted word meanings, often presented challenges in selecting the most appropriate translation for a given context. For instance, in the hadith of *al-kubr*, *al-kubr*, translating to "Give precedence to the older person", both ChatGPT and Google Translate rendered it as "pride, the great", and "the arrogant arrogance" which misses the different subtle meaning of the homonymous words *kubr* (old) and *kibr* (arrogance). This highlights the difficulty LLMs and NMT systems face in disambiguating word senses, particularly in the context of CA and religious terminology.

Furthermore, the presence of out-of-vocabulary (OOV) words specific to Islamic tradition posed additional challenges. The hadith "بِالضَّمَانِ الْخَرَّاجِ" *al-kharaju bi-a-dhamani*, translating to "Taxation with assurance," exemplifies this. While all three systems attempted translations, none accurately captured the specific legal concept of "*dhaman*," which refers to the state assuming the seller's responsibility for any potential damage incurred during the sale process. This demonstrates the limitations of current MT systems in handling domain-specific vocabulary not present in their training data.

Part-of-speech (POS) tagging and morphological segmentation, crucial for accurate translation, also posed challenges. Classical Arabic's complex morphology, with its intricate system of prefixes, suffixes, and vowel markings (diacritics), can be misinterpreted by MT systems. For instance, the hadith جِهَادُكُنَّ الْحَجَّ *Jihādakuna al-Hajju*, translating to "your jihad" highlights this issue. The three MT tools failed to annotate the feminine pronoun "*kunna*" (addressing women) and simply conveyed the general second-person pronoun "you" which caused POS and morphological challenges. This misidentification, stemming from the inability to handle diacritics and morphological segments, led to

inaccurate translations and potential overlapping to non-native speakers of the hadith's implications regarding the intended audience.

In the same vein, Tedla and Yamamoto (2017) propose the development of innovative morphological segmentation models to accommodate the highly inflected structure of some languages like Arabic due to its classification within the same language family. In the hadith "أَوَلِكُلِّكُمْ ثَوْبَانٌ" *'awla li-kullukum thawbān*, translated by Gemini to "Do each of you have two garments?" while others rendered it as "Each of you have two garments" (ChatGPT) or "Do you all have two garments" (Google Translate). This highlights the difficulty in accurately segmenting the word " *'awla li-kullukum*" which conveys the question phrase "do each of you" in the context of a rhetorical question. Here, MT systems except for Gemini's struggled to capture the specific question phrase meaning embedded within the word's morphology.

The rich contextual and cultural dimensions of classical Arabic presented another significant challenge. Capturing the deeper meaning and intent behind a hadith requires understanding the cultural and religious context in which it was uttered. For instance, the hadith "الرُّقْبَى جَائِزَةٌ" (*ar-Ruqba ja'izah*), translating to "The *ruqba* (conditional gift) is permissible," highlights this hurdle. While all three systems failed to convey the underlying cultural and religious significance of *ruqba* which identifies an important notion in the Islamic and pre-Islamic systems of gifts. This demonstrates the need for MT systems that can go beyond literal translation and capture the cultural and pragmatic dimensions of the text.

Beyond the aforementioned challenges, several other complexities emerged. Orthographic issues, such as the presence or absence of diacritics, significantly impacted translation accuracy. Pragmatic issues, like conveying the intended force of an utterance (e.g., a question versus a statement), also posed challenges. Additionally, lexico-semantic issues, such as dealing with multi-word expressions, polysemy (words with multiple meanings), and homophony (words with the same sound but different meanings) constituted big challenges in this study.

VIII. Conclusion

This study sheds light on the intricate web of translation challenges faced by current MT systems when translating two-word hadiths from classical Arabic. While LLMs of both ChatGPT and Gemini displayed some promise in capturing the essence of certain hadiths, their limitations in word sense disambiguation (WSD), handling out-of-vocabulary (OOV) terms, part-of-speech (POS) tagging, morphological segmentation, lexicosemantic, and comprehending the contextual, cultural, and pragmatic dimensions became evident. It underscores the vital role of

human expertise in religious translation, as subject matter experts (SMEs) were able to identify and address the shortcomings of the MT outputs, especially with NMT tool.

Despite these challenges, the potential of LLMs for religious translation remains promising, especially with Gemini's tool. Their ability to learn and adapt suggests that with further development, including: 1) Domain-specific fine-tuning: Training LLMs on large corpora of two-word hadiths and their translations to improve their understanding of religious terminology and cultural context. 2) Incorporation of diacritics and contextual information: Integrating diacritics and contextual information into the training process to enhance word choice and meaning accuracy. 3) Development of religious text-specific evaluation metrics: Designing evaluation metrics specifically tailored for religious text translation to provide a more nuanced assessment of MT performance.

The majority of the hadiths examined underwent literal translation by GT, the NMT tool, leading to inappropriate renderings in the target language output. This direct translation approach resulted in erroneous equivalents, unsuitable insertions and/or omissions, and transliteration for out-of-vocabulary (OOV) terms, like transliterating the word *ruqba* in hadith (16) in the GT's output. The substandard quality of GT's output can be attributed to several factors, notably the significant divergence between the linguistic structures of Arabic and English. This disparity in linguistic systems engenders various challenges, such as polysemy, homophony, and multi-word expressions. Equally significant is the distinctive nature of classical Arabic (CA), characterized by its morphological richness and syntactic flexibility. This intricate linguistic makeup, often described as highly inflected, presents considerable pitfalls for computational processing in natural language processing (NLP) tasks, including machine translation.

The collaboration between human translators and increasingly sophisticated MT systems holds the key to unlocking more accurate and culturally sensitive communication across languages and faiths. By addressing the limitations identified in this study, future research can pave the way for MT systems that can effectively navigate the complexities of religious texts like two-word hadiths. Ultimately, a deeper understanding of these challenges and the potential of MT systems will lead to more accurate and culturally appropriate translations, promoting cross-cultural understanding and fostering communication within and beyond religious communities.

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Appendixes

Appendix 1

Annotator Evaluation Sheet

Dear annotator,

This study aims to assess the machine translation performance of Google Translate (GT), ChatGPT, and Bard regarding selected two-word Prophetic Hadiths. GT's neural MT system processes corpus sentences to generate its output, whereas ChatGPT and Bard are provided with the following prompts to ensure precise and meaningful translations.

[I want you to act as an expert translator. You will translate classical Arabic (CA) prophetic traditions (Hadiths) that consist of only two words but have great connotations into English. I will give you a classical Arabic (CA) input, and you will translate it into English to keep the same semantic meaning and pay special attention to the Arabic diacritic markers as they could change the intended meaning. Please translate this classical Arabic (CA) two-word tradition/hadith into English].

As an expert in translation, your responsibility entails evaluating the English renditions produced by machine translation systems, with a specific focus on precision and fidelity to Arabic diacritical marks, which hold the potential to modify intended significance. Your evaluation task involves scrutinizing and delineating any inaccuracies evident in the English translations generated by the machine translation systems. A grading rubric (marking scheme) has been provided to facilitate your assessment procedure. We kindly request that you assign a score from the grading rubric to each translation in the designated column. Additionally, we encourage you to furnish relevant notes, elucidations, or comments in the specified section below.

Thank you for your meticulous attention to detail and valuable contributions to this evaluation process.

Marking scheme

Poin t	Criterion description
1.0	The English TT displays significant semantic, syntactic, and pragmatic discrepancies that result in a lack of comprehensible meaning when compared to the ST.
2.0	The English TT displays major semantic, syntactic, and pragmatic discrepancies that result in a partially comprehensible meaning when compared to the ST.
3.0	The English TT displays slight semantic, syntactic, and pragmatic discrepancies that result in mostly comprehensible meaning when compared to the ST.
4.0	The English TT displays no semantic, syntactic, and pragmatic discrepancies that result in completely comprehensible meaning when compared to the ST.

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No.	ST	TT					
		GT	Point	ChatGPT	Point	Bard	Point
1	الْعَيْنُ حَقٌّ	The eye is right		The eye is true		the evil eye is real	
2	تَهَادُوا تَحَابُّوا	Give gifts to love one another		Exchange gifts, love one another		exchange gifts and you will love each other	
3	الكِبْرُ الكِبْرُ	The arrogant arrogance		Pride, the great		pride," "arrogance," or "haughtiness	
4	الْخِزَابُ بِالضَّمَانِ	Abscess with guarantee		Taxation with assurance		the profits go with the risk	
5	الْحَرْبُ خِدْعَةٌ	war is a trick		War is deception		War is deception	
6	لَا تُغَضِبْ	Do not get angry		Do not get angry		do not get angry	
7	قَفْلَةٌ كَغَزْوَةٍ	A lock like a raid		A blockade like a siege		returning home from a journey is like a military expedition	
8	هَلَكَ الْمُتَطَعُونَ	The foolish ones perished		The overbearing ones have perished		the extremists will perish	
9	أَرْضُوا مُصَدِّقِيكُمْ	Satisfy your believers		Be satisfied with your witnesses		satisfy your collectors	
10	اعْقِلْهَا وَتَوَكَّلْ	Make sense of it and trust		Be reasonable and rely (on God)		tie your camel and trust in Allah	
11	السُّفْلُ أَرْفَعُ	The lower part is thinner		The lower (position) is more gentle		the lower place is more comfortable	
12	السُّلُّ شِهَادَةٌ	TB certificate		Silence is a testimony		Tuberculosis is a martyrdom," or "To die from tuberculosis is like a martyr's death	
13	أَكْرَمُوا الشَّعْرَ	Honor poetry		Honor poetry		honor the hair	
14	النَّدَمُ تَوْبَةٌ	Regret is repentance		Regret is repentance		regret is repentance	
15	الغَنَمُ بَرَكَةٌ	Sheep are a blessing		Livestock brings blessings		sheep are a blessing	
16	الرَّقِيقِيُّ جَائِزَةٌ	Al-Raqbi is a prize		Neck is a prize		usufruct is permissible	
17	اصْرِفْ بَصَرَكَ	Avert your gaze		Lower your gaze		"turn away your gaze" or "avert your eyes"	
18	المُؤْمِنُ مُكْفَرٌ	The believer is an unbeliever		The believer is an expiator		The believer is forgiven	
19	الأَيْمَنُ فَالْأَيْمَنُ	The right, then the right		The right, then the right		From right to left	
20	أَجِدْ أَجِدْ	Identify, identify		Prepare, prepare		Make it clear, make it clear	
21	الوَتْرُ بَلِيلٌ	The string is at night		The odd number is in the night		Witr prayer is at night	
22	لِلْوَرَعِ الْفَوَيْسِقُ	For the gecko the fox		For the gecko, the voice		The salamander is a mischief-maker	
23	الْأَشِيرَةُ شَرٌّ	Evil is evil		Omens are evil		The ten are evil	
24	إِيَّايَ وَالْفَرْجَ	Me and the private parts		To me is the relief		Beware of the gaps	
25	المستشارُ موثِقٌ	The advisor is trustworthy		The advisor is trustworthy		The advisor is a trustee	
26	المنقولُ رَاكِبٌ	The one wearing shoes is riding		The one wearing shoes is a rider		The one who wears shoes is a rider	
27	النَّارُ جَبَّارٌ	Fire is mighty		Fire is tyrannical		Fire is a tyrant	
28	جِهَادُكَمُ الْحَجُّ	Your effort is Hajj		Your jihad is pilgrimage		Your Jihad is Hajj	
29	أَوَلِكُلِّكُمْ ثَوْبَانِ	Do you all have two garments?		Each of you has two garments		Do each of you have two garments?	

No.	Comments, Notes & Suggested Alternatives
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Appendix 2

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