

## **When Translating from Arabic to English and vice versa, is Google Bard a Trustworthy Tool?**

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### **Abstract:**

The advancement of artificial intelligence (AI) in translation, particularly for language pairs such as English and Arabic, has facilitated cross-cultural communication. However, AI translation tools often struggle with cultural context and domain-specific terminology, underscoring the need for an evaluation of their accuracy (Keen, 2020). This study aims to assess the translation accuracy of Google Bard, a free AI translation tool, by comparing its outputs to human translations across various categories, including historical, literary, media, legal, and scientific texts. The evaluation framework is based on Williams' (2004) four qualitative metrics for translation quality, which examine the morphological, syntactic, semantic, and pragmatic levels of translated texts. By analyzing six texts translated by Google Bard and comparing them with human translations, this research identifies the limitations of AI in handling complex content that typically requires human expertise. While Google Bard is generally adequate for more straightforward texts, its performance diminishes with more technical documents, such as legal and medical reports, scientific studies, and literary works. Consequently, users should be cautious when relying on Google Bard for these genres, as human intervention is essential to ensure accuracy and appropriateness.

**Keywords:** Google Bard, Artificial intelligence, Human translation, Arabic and English Translation, Translation reliability, Interpretation.

### الملخص:

تطور الذكاء الاصطناعي كأداة للترجمة للغات عديدة، منها الإنجليزية والعربية، حيث أصبح التواصل عبر الثقافات شيئاً يسيراً. ومع ذلك، ونظراً أن الترجمة بواسطة الذكاء الاصطناعي محدودة في فهم السياق الثقافي والمفردات المتخصصة في المجالات، فإن دقتها بحاجة إلى تدقيق (كين، ٢٠٢٠). تهدف هذه الدراسة إلى تقييم دقة ترجمة برنامج جوجل بارد، وهو أداة ذكاء اصطناعي مجانية ومن بين أحدث أجهزة الترجمة بالذكاء الاصطناعي، من خلال مقارنة نتائجه بفئات النصوص المترجمة بشرياً، بما في ذلك النصوص التاريخية والأدبية والإعلامية والقانونية والعلمية. تستند المقارنة إلى إطار العمل الذي وضعه (ويليامز، ٢٠٠٤) والذي يتضمن أربعة معايير نوعية لتقييم جودة الترجمة و للتأكد من أن المحتوى المترجم يلبي الغرض الذي أُعد من أجله؛ فهي تقييم جودة النصوص من حيث المستوى الصرفي، المستوى النحوي، المستوى الدلالي، والمستوى التداولي. تطبيق هذه المنهجية يحدد المواضع التي تفوقت فيها الترجمات البشرية على أجهزة الترجمة بالذكاء الاصطناعي، ويتيح فهماً أعمق لمزايا وعيوب ترجمات جوجل بارد. في هذه الدراسة، تم تقييم ست نصوص مترجمة بواسطة جوجل بارد ومقارنتها بالترجمة البشرية. تشير نتائج البحث إلى أن جوجل بارد يمكنه ترجمة المحتوى البسيط، ولكنه يواجه تحديات على العديد من المستويات مع المحتوى المعقد الذي يتطلب مساعدة بشرية. على الرغم من أن جوجل بارد عادةً ما ينتج ترجمات صحيحة، فإن بعض النصوص - مثل الوثائق القانونية، والتقارير الطبية، والدراسات العلمية، والأعمال الأدبية - غير مناسبة بسبب محدودياته التقنية. لذا، يجب على المستخدمين توخي الحذر عند استخدام جوجل بارد لهذه الأنواع من النصوص؛ حيث إن التدخل البشري ضروري لضمان الدقة.

**الكلمات المفتاحية:** جوجل بارد ، الذكاء الاصطناعي، الترجمة البشرية، الترجمة بين العربية والإنجليزية، موثوقية الترجمة، التأويل.

## 1- Introduction:

The demand for international communication and information exchange has increased across many industries due to globalization and technological advancements, leading to significant changes in translation practices. Machine translation has become essential for cross-cultural communication, addressing the need for instantaneous translation and rapid technological development (Aisha, 2014). While machine translation systems excel at translating instruction manuals, they still struggle with more complex texts despite growing societal demands for these services.

Google Bard, an advanced language model powered by deep learning, processes and generates natural language text with remarkable precision, having been trained on extensive data (Tate et al., 2023). It assists in research, creates content for various types of documents, and provides feedback on coherence, grammar, and style. Thanks to its transformer-based architecture, Google Bard learns grammatical structures and patterns across multiple languages (Jiao et al., 2021). Unlike traditional rule-based systems, it produces output that is grammatically correct and contextually relevant by leveraging a vast corpus of text, including books, articles, and web pages. For instance, when translating from English to Arabic, Google Bard encodes the English text into a vector representation and then decodes it into Arabic. This process ensures that the output is cohesive and semantically comprehensible, allowing Google Bard to navigate complex language pairs with differing lexicons, meanings, and syntaxes (Eke, 2023).

The findings of the study indicate that while Google Bard produces generally understandable translations, they often lack precision in preserving the original meanings compared to human translation. Analysis revealed that when translating into English, Google Bard generated a comparable number of sentences. In contrast, it tended to separate and shorten longer Arabic sentences

when translating into Arabic. This research may benefit language professionals, computer scientists, AI experts, interpreters, writers, academics in language studies, and students in translation and related fields.

### **1-1 Research questions:**

This research is trying to answer the following questions:

1. What are the specific limitations of Google Bard in translating complex texts compared to human translators across different genres?
2. How does Google Bard's performance vary when translating domain-specific terminology in fields such as law, medicine, and literature?
3. How do the morphological, syntactic, semantic, and pragmatic levels of translation quality differ between outputs from Google Bard and those from human translators?

### **2- Literature Review:**

#### **2-1 Translation and Google Bard**

The recent explosive growth of the language-translation market highlights the pivotal role of Artificial Intelligence (AI)—a term that gained popularity in the 1950s—and machine learning, with advanced algorithms offering increasingly nuanced translations (Hendy et al., 2023). According to Keen (2020), the global market for language services and technology is predicted to reach \$66.4 billion by 2028. Technological advancements are reshaping the future of the translation industry, transforming both the processes of translation and the delivery of services (Possati, 2021). The emergence of AI and machine learning has rendered previously inefficient processes more precise, cost-effective, and practical, fundamentally altering the translation landscape. Among the leading AI-powered language models is Google Bard, which demonstrates high-quality translation capabilities across multiple languages. Consequently, the adoption of AI-based tools like

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Google Bard has the potential to revolutionize the translation sector.

AI-powered models such as Google Bard, launched in 2023, also serve as valuable resources for non-native language learners (Yan, 2023). For instance, Google Translator technology replaces traditional lexicographic dictionaries with artificial neural networks (ANNs). Linguistics researchers have advocated for AI usage, particularly Google Translate, to assist language learners in improving their syntax and grammar (Liddy, 2001). Similarly, Tsai (2019) emphasized the effectiveness of Google Translate in minimizing errors and extending sentence length. Google's translation system emulates human neural processes by "taking in information, encoding it, placing it into context, and then re-coding it for production" (King, 2019), thanks to its "Google Cognitive Machine Translation" (GCMT) models and sophisticated decoding methods.

Modern language models like Google Bard, developed under the codename "Gemini," are designed to understand and generate text that resembles human writing. The name "Bard" refers to a storyteller in Celtic culture, which reflects the creative nature of the underlying algorithm (Yan, 2023). Google Bard excels in various linguistic tasks, including question answering, content creation, and natural language processing, owing to its extensive training on diverse datasets. Through intensive training, Google Bard has demonstrated an ability to comprehend messages and respond in ways that mimic human communication. It was selected for this analysis due to its accessibility as a free-of-charge AI tool in Egypt, making it suitable for a broad range of users.

Despite its strengths, Google Bard has several limitations. Translations of complex historical or colloquial idioms can sometimes be inaccurate, and interpreting highly technical or specialized texts may present challenges. Furthermore, while the tool may convey the intended idea, it can produce translations that lack grammatical accuracy.

## 2-2 Google Bard's Translation Mechanism:

Kauzlaric (2023) outlines the mechanism of Google Bard's translation between Arabic and English using a tool like Google Bard as it involves a complex process operating across several levels: morphological, syntactic, semantic, and pragmatic. Each of these levels presents unique challenges and considerations.

### A. Morphological Level

Due to the morphological richness of the Arabic language, which is characterized by complex root-and-pattern systems, words are formed by applying specific patterns to roots, including prefixes, suffixes, and infixes. For example, the root "k-t-b," relating to writing, generates words like "katib" (writer), "kitaab" (book), and "maktab" (office). In contrast, English has a less complex morphological structure. Word formation relies more on derivational and inflectional affixes. For instance, "write" (verb) can transform into "writer" (noun) or "written" (past participle). Accordingly, Google Bard's translation mechanism at this level includes:

- **Tokenization and Analysis:** The translation tool breaks down Arabic text into its morphemes (the most minor units of meaning) and maps these onto corresponding English morphemes. This process involves recognizing and accurately converting various word forms due to the differences in morphological structures.
- **Normalization:** The tool may normalize Arabic words into their base forms to effectively handle inflections and derivations before translation.

### B. Syntactic Level

Arabic syntax is relatively flexible, often allowing variations in word order due to its rich inflectional system. The order of subject, verb, and object can vary without altering the meaning. Conversely, English has a more rigid word order, typically following a Subject-Verb-Object (SVO) structure.

Alterations in word order can lead to changes in meaning or result in grammatically incorrect sentences.

The translation mechanism at this level involves:

- **Parsing and Alignment:** The tool parses the Arabic sentence to understand its syntactic structure and aligns it with English syntax, involving the reordering of words and phrases to conform to English grammatical rules while preserving meaning.
- **Reordering and Structuring:** The tool adjusts the flexible Arabic syntax to fit the more rigid English structure, ensuring the translated text is grammatically correct and readable.

### C. Semantic Level

Arabic words often have multiple meanings that depend on context, with many words carrying cultural and idiomatic connotations. For example, "سلام" (salaam) can mean "peace" or "greeting." While English relies heavily on context for meaning, it may possess more fixed meanings for words compared to Arabic. Handling idioms and context-specific meanings requires careful consideration (Mitkov, 2003).

The translation mechanism at this level entails:

- **Contextual Understanding:** The tool employs context to resolve polysemy (words with multiple meanings) and ensures that the translated word or phrase aligns with the intended meaning. Machine learning models trained on extensive datasets help discern the correct sense of words and phrases.
- **Disambiguation:** Algorithms disambiguate meanings based on surrounding text and context to ensure that translations accurately reflect the original intent.

### D. Pragmatic Level

Arabic communication frequently incorporates cultural references, formal and informal registers, and indirect speech acts. Pragmatics involves understanding the speaker's intent, levels of politeness, and context. English may express politeness or indirectness differently, impacting translations. The tool must adapt cultural and

pragmatic nuances to ensure the translated text is appropriate for the target audience.

The translation mechanism at this level focuses on:

- **Pragmatic Adaptation:** Translating between Arabic and English requires adjustments that align with the cultural expectations and communication styles inherent in each language; this can include:
- **Cultural References:** Recognizing culturally specific references and idioms that lack direct equivalents in English, providing contextually appropriate alternatives that resonate with the target audience.
- **Formal and Informal Registers:** Identify the appropriate level of formality in the source text and reflect this in the translation. For instance, a formal Arabic invitation should maintain its formal tone in English.
- **Indirect Speech Acts:** Interpreting indirect speech acts to convey politeness or avoid confrontation, adapting them to equivalent English expressions that maintain intended politeness.
- **Politeness Levels:** Ensuring that polite forms of address and expressions are preserved in translation, maintaining respect and formality as needed.
- **Context Sensitivity:** Accounting for situational context—whether the text is for formal business settings, casual conversations, or social media—and adjusting translations to fit the appropriate level of politeness and formality (Grice, 1975).

### 3- Methodology:

To evaluate the translation accuracy of Google Bard across various text categories—specifically historical, literary, media, legal, and scientific texts—this study aims to compare its performance to that of expert human translators for translations between English and Arabic. The methodology outlined below provides a structured framework for assessing Google Bard's translation accuracy while offering actionable insights into its effectiveness and limitations. Several factors are considered in the comparison process. This investigation adheres to the standards



established by Williams (2004), encompassing the morphological, syntactic, semantic, and pragmatic metrics of analysis.

### **3-1 Metrics for Assessing the Quality of Translation:**

#### **a. Morphological level (Words and terminology)**

The precision and consistency of the specialist vocabulary employed in the translation are referred to as terminology (Alyasin et al., 2018). Ensuring that jargon, register, and technical phrases are translated accurately and consistently is crucial.

#### **b. Syntactic Level:**

It assesses the cohesion and coherence level of the sentences and whether they are well-structured (Alwakid et al., 2017). It also evaluates how the sentences are well divided using linking words.

#### **c. Semantic Level:**

One of the most critical indicators for assessing translation quality is precision and accuracy, which refers to the extent to which the translated text captures the intended meaning of the original text. By comparing the source and translated texts, the reliability of the translation can be evaluated. Additionally, readability plays a significant role in translation quality; it pertains to how easily the translated text can be understood and comprehended by the intended audience. Translations must be presented in a manner that does not confuse the audience (Shoeeb, 2015). Furthermore, readability encompasses how smoothly and naturally the translated text flows. Ensuring that translations are appropriately crafted for the intended readership and cultural context is of utmost importance.

#### **d. Pragmatic level**

The extent to which a translation captures the cultural context and nuances of the original text is referred to as the pragmatic analysis of the translated text. It is crucial to ensure that no essential information is lost in translation, allowing the intended

audience to receive all necessary contextual details (Williams, 2004).

#### 4- Analysis and Discussion:

The analysis presented in this research examines the extent to which the translated text accurately captures the intended purpose of the source text, a process referred to as the morphological level; their natural tone measures the fluidity of the translated texts, while cohesion and coherence assess the organization and consistency of the translation. According to these criteria, Google Bard's performance was evaluated.

In addition to these qualitative measures, each text underwent quantitative analysis, focusing on typical sentence structures, the number of sentences in both the source and translated texts, and the word counts for each.

The analysis compares the accuracy of various text types, including literary, medical, spiritual, judicial, and everyday media texts, all of which Google Bard handles. The selected texts, drawn from a range of publications such as books and websites, will be presented in tables alongside the selected text in the following section. The corpus focuses on translating between English and Arabic. Google Bard's translations are evaluated for accuracy and clarity against the human translations referenced in the source materials.

Table 1 shows a sample of the chosen religious text both in its original language and in Google Bard's preliminary translation. Subsequently, the translation done by hand is added to the table.

**Table 1: Religious Translation from Arabic to English**

Original Text	خطبة الرسول محمد ﷺ في حجة الوداع: "الحمد لله نعمده ونستعينه، ونستغفره، ونثوب إليه، ونعوذ بالله من شرور أنفسنا ومن سيئات أعمالنا من يهده الله فلا مضل له، ومن يضلل فلا هادي له. وأشهد ألا إله إلا الله وحده لا شريك له، وأن محمداً عبده ورسوله. أوصيكم عباد الله بتقوى الله، وأحسبكم على طاعته! وأستفتح بالذي هو خير. أما بعد، أيها الناس، اسمعوا مني أبين لكم، فأبني لا أدري، لعلي لا ألقاكم بعد عامي هذا، في موقفي هذا، أيها الناس، إن دماءكم وأموالكم وأعراضكم عليكم حرام إلى أن تلقوا ربكم، كحرمة يومكم هذا في شهركم هذا في بليدكم هذا وإنكم ستلقون ربكم فيسألكم عن أعمالكم وقد بلغت،
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	<p>فَمَنْ كَانَتْ عِنْدَهُ أَمَانَةٌ فَلْيُؤَدِّهَا إِلَى مَنْ أُتِمَّتْ عَلَيْهِ، وَإِنْ كُلُّ رِبَا مَوْضُوعٍ وَلَكِنْ لَكُمْ رِعْوَسُ أَمْوَالِكُمْ لَا تَظْلِمُونَ وَلَا تُظْلَمُونَ، وَقَضَى اللَّهُ أَنَّهُ لَا رِبَا، وَإِنْ رِبَا عَمِي الْعَبَّاسِ بْنِ عَبْدِ الْمُطَّلِبِ مَوْضُوعٌ كُلُّهُ وَأَنْ كُلُّ دَمٍ كَانَ فِي الْجَاهِلِيَّةِ مَوْضُوعٌ وَإِنْ أَوْلَ دِمَائِكُمْ أَضْعَافُ دَمِ عَامِرِ بْنِ رَبِيعَةَ بْنِ الْحَارِثِ بْنِ عَبْدِ الْمُطَّلِبِ، فَهُوَ أَوْلُ مَا أَبْدَأَ بِهِ مِنْ دِمَاءِ الْجَاهِلِيَّةِ، وَإِنْ مَاتَرُ الْجَاهِلِيَّةِ مَوْضُوعَةٌ غَيْرُ السَّدَانَةِ وَالسَّقَايَةِ وَالْعَمَدِ قَوْدٌ، وَشَبَّهَ الْعَمَدَ مَا قَتَلَ بِالْعَصَا وَالْحَجَرِ وَفِيهِ مِائَةٌ بَعِيرٍ فَمَنْ أَزْدَادَ فَهُوَ مِنَ الْجَاهِلِيَّةِ.</p>
<p><b>Google Bard's Translation</b></p>	<p>The Sermon of the Farewell of the Prophet Muhammad, peace be upon him:</p> <p>"Praise be to Allah; we praise Him, seek His help, seek His forgiveness, and turn to Him. We seek refuge in Allah from the evil of our souls and from the evil of our deeds. Whoever Allah guides, there is no one who can misguide him, and whoever Allah misguides, there is no one who can guide him.</p> <p>I bear witness that there is no god but Allah, and I bear witness that Muhammad is His servant and His messenger.</p> <p>O servants of Allah, I advise you to fear Allah, and I urge you to obey Him. I begin with what is best.</p> <p>As for what comes after, O people, listen to me and I will explain to you. I do not know, perhaps I will not meet you after this year, in this place of mine.</p> <p>O people, your blood, your wealth, and your honor are forbidden to you until you meet your Lord, like the sanctity of this day of yours, in this month of yours, in this land of yours. And you will meet your Lord, and He will ask you about your deeds. I have conveyed.</p> <p>So whoever has an entrusted item, let him return it to the one who entrusted it to him.</p> <p>And every riba is abolished, but you have your capital, you are not wronged, and you do not wrong. And Allah has decreed</p>

	<p>that there is no riba.</p> <p>And the riba of my uncle, Abbas ibn Abd al-Muttalib, is all abolished.</p> <p>And every blood that was in the pre-Islamic period is abolished. And the first blood of yours that I abolish is the blood of Amr ibn Rabi'ah ibn al-Harith ibn Abd al-Muttalib. It is the first thing I will begin with from the blood of the pre-Islamic period.</p> <p>And the vestiges of the pre-Islamic period are abolished, except for the leadership of the caravans and the watering of the pilgrims.</p> <p>Murder is compensated by blood money. And what is similar to murder is what is killed with a stick or a stone, and it is one hundred camels. So whoever increases it is from the pre-Islamic period."</p>
<b>Human Translation</b>	<p>The sermon of the Messenger Muhammad, peace and blessings be upon him, during the Farewell Pilgrimage:</p> <p>"Praise be to God, we praise Him, we seek His help, we seek His forgiveness, we repent to Him, and we seek refuge in God from the evils of ourselves and the evil of our deeds. Whoever God guides, none can mislead him, and whoever He leads astray, there is no guide." I bear witness to the fact that there is no god but God alone, with no partner, and that Muhammad is His servant and Messenger. I advise you, servants of God, with fear of God, and I urge you to obey Him! And I seek the beginning with what is best. As for what follows, O people, listen to me as I explain to you, for I do not know. Perhaps I will not meet you after this year in this position of mine. O people, your blood, your wealth, and honor are forbidden to you until you receive Your Lord, as sacred as this day of yours is in this month of yours in this country of yours. Indeed, you will meet your Lord, and He will ask you about your deeds, even though they have been fulfilled. So whoever has a trust, let him return it to the one to whom he entrusted it. All usury is forbidden, but you have your capital. You do not wrong or be wronged, and God has decreed that there is no usury. And</p>

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	<p>the usury of my uncle Abbas bin Abdul Muttalib is entirely void, and every blood that occurred in the pre-Islamic era is void, and the first of your blood I put is the blood of Amer bin Rabi'ah bin Al-Harith bin Abdul Muttalib, so it is the first thing I begin with from the blood of the pre-Islamic era, and the deeds of pre-Islamic times are forbidden, other than being a potter, watering water, and intentionally using food. Intentionally killing with a stick or stone, including one hundred camels, but whoever increases it is from pre-Islamic times.</p>
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**Translations Evaluation:**

Level	Google Bard Translation	Human Translation	Overall Comparison
<b>Morphological Level</b>	<p><b>Terminology Usage:</b> Generally accurate, e.g., "usury" for "ربا," but "receiving your Lord" should be "meeting your Lord."</p>	<p><b>Terminology Usage:</b> Accurate and contextually appropriate, e.g., "riba" and "pre-Islamic" are consistently used.</p>	Human translation demonstrates higher precision and consistency, effectively capturing specific meanings and cultural contexts.
	<p><b>Technical Terms:</b> "Pre-Islamic era" is appropriate, but "intentionally using food" misrepresents "العمد قَوْدٌ."</p>	<p><b>Technical Terms:</b> Accurately reflects religious and historical context, e.g., "blood money" for "الدية."</p>	
	<p><b>Consistency:</b> Incomplete phrases like "Your blood and... Your wealth and honor."</p>	<p><b>Consistency:</b> Consistency uses specialized terms consistently, avoiding ambiguity.</p>	

<b>Syntactic Level</b>	<b>Sentence Structure:</b> Some sentences are awkward, e.g., "And I seek the beginning with what is best."	<b>Sentence Structure:</b> Well-structured sentences, e.g., "Glory to Allah, we give Him praise," flow naturally.	Human translation exhibits superior structure and coherence, presenting a more precise and more naturally flowing text.
	<b>Cohesion:</b> Google Bard struggles with coherence in longer sentences and less clear transitions.	<b>Cohesion:</b> Strong cohesion and logical progression of ideas.	
	<b>Linking Words:</b> Clumsy use affects readability.	<b>Linking Words:</b> Effective use enhances readability and logical flow.	
<b>Semantic Level</b>	<b>Meaning Capture:</b> Generally accurate but diverges in phrases like "I seek the beginning with what is best."	<b>Meaning Capture:</b> Accurately reflects original text's meaning, preserving nuances.	Human translation excels in capturing meaning and readability, offering a more explicit representation of the original text.
	<b>Readability:</b> Affected by awkward phrasing and incomplete sentences.	<b>Readability:</b> It is smoothly read and understood.	
	<b>Clarity:</b> Translation choices sometimes obscure meaning.	<b>Clarity:</b> Precise and accurate representation of the intended message.	

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<b>Pragmatic Level</b>	<b>Cultural Context:</b> Maintains general context but lacks depth in conveying significance.	<b>Cultural Context:</b> Effectively captures cultural and religious context, reflecting its significance accurately.	Human translation provides a more thorough capture of cultural context and information preservation, ensuring accurate conveyance of religious and historical significance.
	<b>Information Preservation:</b> Some nuances are lost or inaccurately represented, e.g., "intentionally using food" misrepresents intent.	<b>Information Preservation:</b> Preserves intended cultural and religious information comprehensively.	

Overall, while Google Bard provides a useful initial translation, it often falls short in capturing nuances, coherence, and cultural depth compared to the Human translation. For complex religious texts, the Human translation is superior in accuracy and context.

**Table 2: Media Translation from English to Arabic**

<b>Original Text</b>	The money that would otherwise be spent on harmful weapons and wars could be utilized to develop new factories, enhance healthcare, address housing and transportation issues, and carry out other beneficial initiatives. Peace offers us this opportunity.
<b>Google Bard's Translation</b>	النقود التي يتم إضاعتها حاليًا على الأسلحة السيئة والحروب يمكن أن تستخدم في إنشاء مصانع جديدة، وتطوير الرعاية الصحية، وعلاج قضايا الإسكان والنقل، وتنفيذ مبادرات نافعة أخرى. يقدم السلام هذه الفرصة العظيمة.
<b>Human Translation</b>	يمكن استثمار الأموال التي تنفق على الأسلحة والحروب المدمرة لبناء مصانع جديدة، وتعزيز الرعاية الصحية، ومعالجة قضايا الإسكان والنقل، وتنفيذ مبادرات مفيدة عديدة، حيث يمنحنا السلام هذه الفرصة.

### Translations Evaluation:

	Google Bard Translation	Human Translation	Overall Comparison
<b>Morphological Level</b>	<b>Terminology Usage:</b> Correctly uses terms like "الأموال" (money), "الأسلحة" (weapons), and "الحروب" (wars).	<b>Terminology Usage:</b> Uses "الأسلحة الضارة" (harmful weapons) and "مبادرات مفيدة أخرى" (other beneficial initiatives).	Both translations are accurate, but Human Translation uses slightly more precise terms that better match the original text.
	<b>Consistency:</b> Uses "مدمرة" (destructive) for "harmful," which alters the nuance compared to "الضارة" (harmful) in Human Translation.	<b>Consistency:</b> Maintains consistent and appropriate terminology throughout, accurately reflecting the original text.	
<b>Syntactic Level</b>	<b>Sentence Structure:</b> Generally correct but somewhat complex; awkward phrasing in "حيث يمنحنا السلام هذه الفرصة."	<b>Sentence Structure:</b> Clear and natural; sentences are well-formed with smooth transitions.	Human Translation demonstrates better syntactic structure and cohesion, providing a smoother reading experience.
	<b>Cohesion:</b> Cohesive, but transitions could be smoother; the use of commas and conjunctions affects readability.	<b>Cohesion:</b> Maintains coherence with proper linking between ideas; final sentence flows naturally.	
<b>Semantic</b>	<b>Meaning</b>	<b>Meaning</b>	Human Translation



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<b>Level</b>	<b>Capture:</b> Accurately captures meaning but alters nuances with "مدمرة" (destructive) and "مبادرات مفيدة عديدة."	<b>Capture:</b> Accurately reflects original meaning; closely matches nuances, e.g., "الأموال التي يتم إنفاقها حاليًا."	excels in meaning capture and readability, presenting ideas more accurately and understandably.
	<b>Readability:</b> It is readable but could improve clarity; awkward phrasing may affect flow.	<b>Readability:</b> Highly readable with precise, natural phrasing, closely aligning with original text clarity.	
<b>Pragmatic Level</b>	<b>Cultural Context:</b> Maintains general context but shifts emphasis with "مدمرة" (destructive); less precise on resource reallocation.	<b>Cultural Context:</b> Accurately captures implications of reallocating resources; deep understanding of text's intent.	Human Translation is more effective in preserving cultural context and information, ensuring the original message and implications are accurately conveyed.
	<b>Information Preservation:</b> Preserves core information but introduces variations that affect nuance.	<b>Information Preservation:</b> It fully preserves the intended message, emphasizing peace as an opportunity for societal improvement.	

Overall, the Human Translation provides a more accurate, clear, and contextually faithful representation of the original English text compared to Google Bard.

**Table 3: Literature Translation from Arabic to English**

<b>Original Text</b>	فكم من إظهار سر أراق دم صاحبه ومنعه من بلوغ مآربه، ولو كتّمه أمين سوطه. قال بعضهم: من حصّن سره فله بتحصيله خصلتان: الظفر بحاجته، والسلامة من السطوات. إن في الكتمان قضاء الحوائج، وإنجاح المقاصد وبلوغ الغايات.
<b>Google Bard's Translation</b>	How many times has revealing a secret shed the blood of its owner and prevented him from achieving his goals, even if he kept it, he would be safe from its power. Some said: Whoever fortifies his secret, he will have two qualities with its fortification: obtaining his need, and safety from attacks. In secrecy there is the fulfillment of needs, the success of purposes, and the attainment of goals.
<b>Human Translation</b>	How much revealing a secret will shed its owner's blood and prevent him from achieving his goals, and if he kept it secret, his power would be secure. Some of them said that whoever protects his secret will have two qualities protecting it: achieving what he needs and being safe from temptation. Concealment means fulfilling needs, achieving goals, and achieving goals.

**Translations Evaluation:**

Level	Google Bard's Translation	Human Translation	Overall Comparison
<b>Morphological Level</b>	<b>Terminology Usage:</b> Uses "shed its owner's blood" for "أراق دم صاحبه," which is awkward; "Temptation" for "سطوته" does not fully capture the meaning.	<b>Terminology Usage:</b> Uses "lost blood" for "أراق دم" and "power" for "سطوته," closely aligned with the original.	Human Translation is the most precise in terminology, closely reflecting the original Arabic text. Google Bard's translations have inconsistencies and awkward phrases.

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	<b>Consistency:</b> There is a slight lack of consistency with the phrase "achieving goals" repeated twice, affecting clarity.	<b>Consistency:</b> Terminology is consistent and aligns well with the original text's meaning.	
<b>Syntactic Level</b>	<b>Sentence Structure:</b> Somewhat convoluted; phrases like "How much revealing a secret will shed its owner's blood" are awkward.	<b>Sentence Structure:</b> Clear and well-structured; "How many times has the possessor of a secret lost blood..." flows naturally.	Human Translation provides better sentence structure and coherence, presenting a smoother reading experience compared to Google Bard.
	<b>Cohesion:</b> Lacks smooth transitions between ideas; repetition of "achieving goals" affects coherence.	<b>Cohesion:</b> Maintains good cohesion and coherence; ideas are logically connected and flow smoothly.	

Overall, human translation offers a more accurate, clear, and contextually faithful representation of the original Arabic text compared to Google Bard's translations.

**Table 4: Literature Translation from English to Arabic**

<b>Original Text</b>	"Do not imagine, comrades, that leadership is a pleasure. On the contrary, it is a deep and heavy responsibility. No one believes more firmly than Comrade Napoleon that all animals are equal. He would be only too happy to let you make your decisions for yourselves. But sometimes you might make the wrong decisions, comrades, and then where should we be?" George Orwell, Animal Farm"
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<b>Google Bard's Translation</b>	لا تتخللوا أيها الزملاء أن القيادة هي متعة. بالعكس، إنها مسؤولية صعبة وثقيلة. لا أحد يعتقد بقوة أكثر من الزميل نابليون أن جميع الحيوانات متساوية. سيكون جدًا مسرور للسماح لكم باتخاذ قراراتكم بأنفسكم. لكن في بعض الأحيان قد تتخذون قرارات خاطئة أيها الزملاء، وبعد ذلك أين يجب أن تكون؟
<b>Human Translation</b>	"لا تظنوا يا رفاق، أن القيادة متعة. بل على العكس، إنها مسؤولية جسيمة وعميقة. لا يوجد أحد أكثر إيمانًا من الرفيق نابليون بأن جميع الحيوانات سواسية. ولسوف يشعر بالسعادة حقًا لو ترككم تتخذون قراراتكم بأنفسكم. ولكنكم، يا رفاق، أحيانًا قد تتخذون القرارات الخاطئة، حينها ماذا ستكون مصائرنا؟"

### Translations Evaluation:

Level	Google Bard's Translation	Human Translation	Overall Comparison
<b>Morphological Level</b>	<b>Terminology Usage:</b> Terms like "الزملاء" (comrades) and "الزميل نابليون" (Comrade Napoleon) are correctly translated; "صعبة" (difficult) shifts nuance.	<b>Terminology Usage:</b> Uses "الرفاق" (comrades) and "الرفيق نابليون" (Comrade Napoleon), capturing the original meaning well.	Human Translation is more precise in terminology, effectively capturing the nuances of the original text compared to Google Bard.
	<b>Consistency:</b> It is primarily consistent but could be improved for better accuracy.	<b>Consistency:</b> Consistent terminology that effectively captures the nuances of the original text.	
<b>Syntactic Level</b>	<b>Meaning Capture:</b> Accurately reflects the original meaning; some phrases may not fully convey the intended tone.	<b>Meaning Capture:</b> Accurately reflects the original meaning with phrases that align well with the source text.	Human Translation excels in meaning capture and readability, conveying the intended message clearly.
	<b>Readability:</b> It has some awkward phrasing; it is less precise than the Human	<b>Readability:</b> Highly readable, naturally conveys the intended message,	

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	Translation.	and maintains the original nuance.	
<b>Pragmatic Level</b>	<b>Cultural Context:</b> Captures the essence of the original text but misses subtlety in tone.	<b>Cultural Context:</b> Effectively captures cultural context and tone, preserving Orwell's message.	Human Translation is superior in capturing cultural context and preserving the intended message, while Google Bard's translations have minor issues with tone and nuance.
	<b>Information Preservation:</b> Preserves the core message but has minor tone and nuance issues.	<b>Information Preservation</b> Fully preserves information and cultural context, accurately conveying the message on leadership and responsibility.	

Overall, human translation offers a more straightforward, more accurate, and contextually faithful representation of the original English text compared to Google Bard's translations.

**Table 5: Medical Translation from Arabic to English**

<b>Original Text</b>	ما هو حشو العصب؟ يتتركب السن الطبيعي للإنسان من أربعة أجزاء أو طبقات رئيسية من الخارج إلى الداخل، وهي بالترتيب المينا، والعاج، والملاط، ثم لب الأسنان الداخلي الذي يحوي بداخله الأعصاب والأوعية الدموية وهو النسيج الأكثر ليونة في الأسنان، وحشو العصب أو علاج قناة الجذر كما يُطلق عليه، هو الإجراء الذي يستهدف لب الأسنان هذا، فهو عبارة عن واحد من أهم وأشهر إجراءات طب الأسنان عموماً يهدف إلى الوصول إلى اللب الداخلي للسن والجذور العميقة لإزالة أي أنسجة تالفة أو عدوى أو تسوس ثم ملء تلك المنطقة لحمايتها ومنع حدوث مشكلات أخرى بها.
<b>Google</b>	What is nerve filler?

<b>Bard's Translation</b>	Human natural tooth is installed from four parts or main layers from the outside to the inside in order of enamel, ivory, mortar, and then inner tooth pulp containing nerves and blood vessels, the softer tissue in the teeth nerve filler or root canal treatment as it is called, is the procedure that targets this tooth pulp s internal core and deep roots to remove any damaged tissue, infection or decay and then fill that area to protect it and prevent other problems with it.
<b>Human Translation</b>	What is nerve filler? The natural human tooth is composed of four main parts or layers from the outside to the inside, which are in order: enamel, dentin, and cementum, then the inner dental pulp, which contains nerves and blood vessels, which is the softest tissue in the tooth, and root canal treatment, as it is called, it is a procedure that targets this dental pulp. It is one of the most essential and famous dental procedures in general. It aims to reach the inner pulp of the tooth and the deep roots to remove any damaged tissue, infection, or decay and then fill that area to protect it and prevent other problems from occurring there.

### Translations Evaluation:

Level	Google Bard's Translation	Human Translation	Overall Comparison
Morphological Level	Terminology Usage: Uses "nerve filler" and "root canal treatment," appropriate but unclear; "ivory" and "mortar" are inaccurate.	Terminology Usage: Accurate use of "dentin" and "cementum," clarifying terms and procedures.	Human Translation provides precise terminology, effectively distinguishing parts of the tooth and procedures compared to Google Bard.
	Consistency: Inconsistent with terms like "ivory" and "mortar"; "nerve filler" is unconventional and unclear.	Consistency: Consistent use of dental terminology throughout the translation.	
Syntactic Level	Sentence Structure: Somewhat unclear and awkward;	Sentence Structure: Well-structured	Human Translation exhibits the most explicit and most

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	phrases like "What does nerve filler entail?" are not fluid.	sentences that flow logically, introducing tooth structure clearly.	logically structured sentences, providing better coherence and fluidity.
	<b>Cohesion:</b> It lacks smooth transitions and is less coherent than human translation.	<b>Cohesion:</b> Maintains good cohesion and coherence; follows naturally from tooth structure to procedure.	
<b>Semantic Level</b>	<b>Meaning Capture:</b> General meaning captured, but inaccuracies present; "installed from four parts" is unclear.	<b>Meaning Capture:</b> Accurately reflects original meaning with clear descriptions.	Human Translation excels in meaning capture, providing clarity and precision in technical descriptions compared to Google Bard.
	<b>Readability:</b> Readable but awkward; inaccuracies hinder effective communication of meaning.	<b>Readability:</b> Highly readable with a natural flow, effectively conveying technical information.	
<b>Pragmatic Level</b>	<b>Cultural Context:</b> Captures general ideas but lacks accurate terminology; affects understanding.	<b>Cultural Context:</b> Effectively captures cultural and technical context; terminology is accurate.	Human Translation is superior in preserving cultural context and technical details, ensuring clarity and understanding.
	<b>Information Preservation:</b> Basic information is preserved, but inaccuracies may	<b>Information Preservation:</b> Fully preserves information and technical details;	

	lead to confusion.	the explanation is clear and accurate.	
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Overall, human translation is the most accurate and effective way of conveying the original meaning, while Google Bard's translations have terminology, coherence, and readability issues.

**Table 6: Legal Translation from Arabic to English**

<b>Original Text</b>	مادة ٨ يقوم المجتمع على التضامن الاجتماعي. وتلتزم الدولة بتحقيق العدالة الاجتماعية وتوفير سبل التكافل الاجتماعي، بما يضمن الحياة الكريمة لجميع المواطنين، علي النحو الذي ينظمه القانون.
<b>Google Bard's Translation</b>	Article 8 Society is based on social solidarity. The State is committed to social justice and social solidarity, ensuring a decent life for all citizens, as regulated by law.
<b>Human Translation</b>	Article 8 Society is based on social solidarity. The state is committed to achieving social justice and providing means of social solidarity, ensuring a decent life for all citizens, as regulated by law.

**Translations Evaluation:**

Level	Google Bard's Translation	Human Translation	Overall Comparison
<b>Morphological Level</b>	<b>Terminology Usage:</b> Uses "social solidarity" appropriately; "the State" is consistent and suitable for legal documents.	<b>Terminology Usage:</b> Uses "social justice" and "social solidarity" correctly, adding specificity to the commitment.	Both translations use terminology effectively, but the Human Translation provides more specificity regarding social concepts.
	<b>Consistency:</b> Terminology is consistent and reflects the original text's intent accurately.	<b>Consistency:</b> Consistent terminology that accurately reflects legal and social concepts in the original text.	



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<b>Syntactic Level</b>	<b>Sentence Structure:</b> Sentences are well-structured and maintain a formal tone suitable for legal text.	<b>Sentence Structure:</b> Sentences are well-structured and clearly delineate different aspects of the original text.	Both translations exhibit strong sentence structure, but the Human Translation better aligns with the original text's nuances.
	<b>Cohesion:</b> Flows smoothly with a clear division between clauses; effective use of linking words ensures coherence.	<b>Cohesion:</b> Maintains coherence and logical flow between sentences, closely aligning with the original text.	
<b>Semantic Level</b>	<b>Meaning Capture:</b> Captures the essential meaning of the original text accurately.	<b>Meaning Capture:</b> Accurately reflects the original meaning with added specificity about "providing means."	Human translation excels in capturing meaning with more detail and enhancing specificity.
	<b>Readability:</b> Clear and formal, appropriate for a legal document; reads naturally and aligns with the intended legal tone.	<b>Readability:</b> Highly readable and formal, using clear and precise language suitable for legal contexts.	
<b>Pragmatic Level</b>	<b>Cultural Context:</b> Maintains the formal and legal tone, fitting for the original text's context.	<b>Cultural Context:</b> Maintains the legal tone and provides a precise, culturally appropriate translation.	Both translations effectively preserve cultural context, but the Human Translation is more precise regarding the specifics of social

			justice and solidarity.
	<p><b>Information Preservation:</b> It preserves essential information accurately without loss.</p>	<p><b>Information Preservation:</b> Fully preserves the intended meaning and details, including specifics about social justice.</p>	

Overall, human translation is the most accurate and formal, effectively conveying the legal text's meaning and context. Google Bard's translations are generally precise but with minor deviations in terminology and formality.

## 5- Results

According to the findings, Google Bard predominantly translated comprehensible sentences; however, it needed help to capture the nuances of cultural variations. In their evaluation of Google Bard within the context of machine translation, Hendy et al. (2023) examined several factors, including the influence of hegemonic cultural agendas, resilience against field changes, the type of document translated, and the overall performance of various Google Bard algorithms compared to other advanced, free-of-charge AI tools. The results indicated that while Google Bard's algorithms demonstrated limited capabilities when dealing with languages with fewer resources, they produced translations of acceptable quality across a diverse range of texts.

The translation capabilities of Google Bard were assessed by comparing its outputs with those of human translators across various genres, including media, legal documents, scientific publications, history, and culture. The results showed that while Google Bard is effective for translating simple materials, its performance declines with complex texts that require human expertise. Although it produces accurate translations most of the time, its applicability in critical domains such as legal documents,

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medical reports, scientific studies, and literary works remains debatable.

Given Google Bard's ability to translate between multiple language pairs, such as English and Arabic, it serves as a valuable tool for education, comprehension, and intercultural interaction. However, several questions arise: Is AI-based modeling a miracle tool? Can AI resolve all machine translation issues, particularly with more complex language pairs? The answer is "no." This limitation stems from potential biases in AI algorithms and ethical concerns, as well as various overt and covert cultural limitations (Possati, 2021). For instance, AI, as represented by Google Bard, struggles to translate literary, historical, legal, or religious texts authentically due to their specialized terminology, jargon, and registers, which can be challenging to render accurately without a deep understanding of the subject matter and its context. Consequently, Google Bard may produce misleading information that alters the intended meaning of the original text. Mitigating this issue requires human oversight for translated content, particularly in legal, academic, and religious contexts.

### 6- Conclusion:

Despite stylistic or lexical variations, Google Bard does not compromise the quality of the original text in translations of religious, literary, medical, media, and legal documents. However, some translations, while grammatically correct, need more appropriate Arabic phrasing, resulting in awkward constructions. This challenge arises from the differences in sentence structure: Arabic follows a subject-object-verb order, while English does not. Moreover, English necessitates the use of pronouns, whereas Arabic does not, and the appropriate use of Arabic pronouns is contingent on sentence structure and gender, which can complicate translations.

Idiomatic expressions pose another challenge for Google Bard, as it needs help to translate them in context or to reflect their original cultural meanings. Additionally, Arabic contains numerous

slang terms that need more direct equivalents in English, requiring a deep understanding of the cultural context for accurate translation. Google Bard may also need help with Arabic diacritical marks, which indicate vowel sounds and pronunciation. Translation issues can further arise from false cognates—words that resemble each other but have different meanings in the two languages. The distinct cultural backgrounds, norms, and syntactic structures of Arabic and English add to the complexity of translation. In Arabic, words are highly inflected, meaning their forms change according to their grammatical function, often resulting in longer and more intricate phrases than their English counterparts. Therefore, cultural factors must be carefully considered when translating words and concepts with multiple meanings.

#### **7- Recommendations:**

In conclusion, the following advice and recommendations should be considered to ensure that Google Bard users, especially researchers, students, and educators, can benefit the most from this translation service.

1. When translating, it is advisable to refer to the responses that Google Bard provides. Although machine translation can save time, it is not flawless and can have lags during periods of high usage.
2. Although Google Bard was trained using human input, human input could be better and can result in biased material. It is advised that users of Google Bard should think about consulting a professional translator rather than depending solely on it for translations.
3. To minimize any potential unfavorable outcomes, expert translators should review materials translated using software translation.
4. Google Bard helps translate brief texts, but it lacks the subtlety that human translators provide to more significant works, like novels.

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5. It is important to remember that Google Bard may need help comprehending or generating as many original ideas or points of view as human minds.

6- Users should be aware that Google Bard is currently in beta and has yet to reach its final state.

However, Google Bard and other tools will influence translation in the future as software learning advances.

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