

A Linguistic Study of Translation in Legal and Medical Contexts: Challenges, Ethics and the Role of Technology

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Abstract

Some of the most demanding and high-stakes areas in language services are legal and medical translation. Malpractice in these areas may lead to severe repercussions such as misinterpretation of the law, wrongful convictions, or medical malpractice. In this paper, the author examines the complex issues encountered by translators in the fields of law and medicine and discusses them within the framework of linguistic, cultural, ethical, and procedural challenges. Based on actual case studies, scholarly research, and recorded cases of translation failures, it strongly underscores the critical role of accuracy, expertise in a subject area, and ethical conduct. The paper also assesses the role of technology, including machine translation (MT) and computer-assisted translation (CAT) tools, and provides recommendations on how to enhance the quality of translation, accountability, and professional responsibility in such specialized areas.

Keywords: Accuracy issue, Legal translation, medical translation, Machine Translation, Technology, CAT, Linguistic, cultural, ethical and procedural issues.

1. Introduction

Legal and medical translation is much more than a language exercise it is an essential passage between cultures, juridical frameworks and medical interventions. The fortunes are extremely high, and the tolerance level is low in these areas. Contrary to general or literary translation, legal and medical translation presupposes profound domain information, terminological accuracy and high ethical standards.

Legal translation is a process that is concerned with the translation of documents like contracts, judicial decisions, regulations, and affidavits in different languages. Such texts usually have complicated terms and legally culturally entrenched concepts of the law, which differ greatly across jurisdictions. Even one inaccurate mistranslation can result in the misinterpretation of a clause, the result of a trial, or the rights of a person. Legal translation is not an impartial matter as it has an incompatibility of legal systems and languages, and the translator must create conceptual gaps by building a terminological bridge between the two (Šarčević 2012).

In comparison, medical translation covers clinical trials, patient records, informed consent forms, and prescriptions. Mistranslation in this profession may have life-threatening consequences. Alquraishy (2025) also emphasizes the difficulty of overcoming linguistic diversities between languages with extremely different sets of medical terminologies, e.g., Latin-based terms, unfamiliar to the Arabic or Hindi language. Not only are they required to be linguistically competent, but they are also ethically alert with the need to have confidentiality, informed consent, and cultural sensitivity.

Globalization has increased the need to have accurate translation particularly in the legal and medical fields. To achieve such systems, it is translators that multinational companies, global courts, and international healthcare systems are using to ensure the systems are not only compliant, readable and comprehensible but also even. With increasing use of machine translators in these fields, reliability, as well

as accountability, has been questioned. Research by AlKatheery (2023) and Vieira et al. (2021) states that even though certain studies demonstrate that general communication may be facilitated by the MT, the system is not able to capture the specifics of legal terminology, as well as the specifics of medical terminology, which may cause mistakes in interpretation and even damage.

This paper aims to discuss the special problems that the translators face when dealing with legal and medical issues, reviewing the real-life instances of translation errors, and proposing the chances to enhance the quality and adequacy of translations. It facilitates multidisciplinary research in specialized translation and training, certification and ethical standards in translation.

2. Literature Review

There has been a lot of scrutiny of the legal and medical translation processes among scholars due to the stakes at stake and the technicalities involved in the two fields. This section will give a summary of the relevant literature that clarifies the theoretical foundation, practical concerns and technological innovations of legal and medical translation. It also points out the ethical issues and risks of machine translation (MT).

2.1 Legal Translation: Bridging Systems and Terminologies

Legal translation is a normative task that requires a sensitive interpretation of the legal systems of origin and destination. Very importantly, according to Šarčević (1997), legal translation is not merely about words but about legal concepts, most of which represent a deep-rooted part of the source culture, as well as legal tradition. Translators must address terminological incongruities, jurisdictional differences, and, in most cases, functional equivalence may be used to maintain legal intent (Cao, 2007).

According to Trosborg (1997), legal texts tend to be formal, have strict syntactic structure and vocabulary. These characteristics present major problems of proper translation, particularly where we have archaic words, passive constructions, and nominalizations. The idea of equity in common law, such as that, does not have an equivalent in the civil law tradition, and translators must find a way to convey the legal purpose rather than the literal meaning.

2.2 Medical Translation: Precision and Cultural Mediation

Medical translation deals with the movement of very technical as well as sensitive information. According to Montalt and Gonzalez-Davies (2007), medical translators should play the role of intercultural mediators in that the translator should make sure that there is understanding between the patients and the healthcare providers despite the linguistic and cultural differences. Medical terminology, which is often made of Latin or Greek, as well as abbreviations, is more complicated to understand, which is a danger of misunderstanding.

Alquraishy (2025) points out that there is difficulty in translating medical terms into other languages where the medical systems are different. There are some such words as the abbreviation word BP (blood pressure), that can in some cases be understood as boiling point or British Pharmacopoeia. Another factor is the differences in culture, where terms such as mental illness or palliative care might be interpreted differently across cultures, and it is thus necessary to make careful adjustments to avoid stigmatization or misinterpretation (Poechhacker, 2008).

2.3 Ethical and Legal Considerations

Both legal and medical translation require such ethical principles as confidentiality, accuracy, and impartiality. Translators deal with sensitive information and are required to follow professional rules. When it comes to medical practice, informed consent forms should be translated into comprehensible and culturally acceptable language to support patient autonomy and rights (Angelelli, 2004).

Legal translators are required to make sure that the documents translated do not lose the meaning and legal strength of the communicated statements. Malpractices in translation may result in miscarriages of justice, as documented in a number of high-profile cases in which mistranslated evidence or testimony was used to influence a court decision (González, 2013).

2.4 Machine Translation Errors in Legal and Medical Contexts

Despite advances in neural machine translation (NMT), MT systems continue to struggle with specialized domains. Alkatheery (2023) found that Google Translate produced lexical errors in 43.4% of Arabic-English legal translations, with additional syntactic errors (25%) and register-related errors (30.2%). Examples include mistranslating العبارات as “expression” instead of “phrases,” and الإدارة مجلس as “council” instead of “board of directors,” altering legal meaning.

Semantic errors are also the bane of medical translation. According to Abo Al-Timen (2023), the use of an MT system in clinical facilities was characterized by a misunderstanding of words such as chronic, which is spelled as severe, and dosage, which is spelled as amount. Mehandru et al. (2022) reported instances where literal translation of the phrase ‘take with food’ led to misunderstanding in patients and subsequent deterioration of the outcome of treatment.

These facts underline the shortcomings of the use of MT in high stakes environments. Although it might be useful as an overall communication tool, it is not contextually sensitive and has no domain knowledge about legal and medical translation. The human check, as well as the ethical control, is to be adopted to minimize the risks and guarantee the correctness of translation..

2.5 Technology and Translation Tools

Computer-aided translator (CAT) software, such as SDL Trados and MemoQ, have gained a more pivotal role in legal text and translation of medical texts in general. These systems have databases of terminologies, translation memories, and quality assurance presentations, which are more productive and consistent. Bowker (2002) suggests that CAT tools particularly came in handy in the case of legal translation where the consistency of terms is vital.

Nevertheless, Google Translate and other MT systems, such as DeepL, use fast, convenient methods but fail in specialized areas. The results of the works by Vieira et al. (2021) and Haque et al. (2020) indicate that the velocity of general corpora in the context of the process of learning with the help of the MTS causes errors to appear that do not guarantee adequate interpretation and security. A combination of CAT tools with human translators in these areas is the surest way of having high-quality translation.

3. Methodology

The research design used in this study is a qualitative, descriptive, and comparative research design to investigate challenges and strategies associated with legal and medical translation. The research will be based on the study of real examples, published case studies, and machine-generated results to identify patterns of error in translating, that can evaluate how effective current practices are, and suggest improvements to both professional standards and the use of technology.

3.1 Research Design

The research is designed as a comparative textual analysis of original legal and medical documents and their translations. This method allows looking into the influence of translation choices on meaning, comprehension, and adherence to strict procedures in high-stakes settings. The analysis focuses on:

- **Lexical, syntactic, and semantic differences:** Mistranslations, vague wording, inconsistency of terminology, etc.
- **Cultural and context mismatches:** The test includes assessment of cultural references and management of jurisdiction-specific concepts.
- **Legal and ethical consequences:** Evaluation of the effects of translation errors on patient safety, legal consequences and informed consent.
- **Function and restrictions of MT and CAT tools:** The comparison of human and machine-translated texts to outline their strengths and weaknesses.

This design will enable a subtle interpretation of the quality of the translation and of what affects its accuracy and accountability.

3.2 Data Sources

Data on the study will be based on an eclectic collection of sources to provide representativeness and richness:

- Legal Documents: Contracts, court decisions, affidavits, and legal notices in English and Hindi/Arabic.
- Medical records: Patient information leaflets, informal consent to clinical trials, clinical diagnostic reports, and pharmaceutical directions.
- Machine translation outputs: Translation results of Google Translate, DeepL, and Microsoft Translator regarding some legal and medical texts.
- Published case studies and peer-reviewed literature: The real-life examples and the results of translating errors as reported in the scholarly journals and professional reports.

This multi-source study allows for improving the quality of findings and evidence triangulation.

3.3 Analytical Framework

The three theoretically complementary frameworks that facilitate the analysis are:

- Functionalist Translation Theory (Nord, 1997): It focuses on the intent of the translation and the necessity to present some forms of adaptations of the texts with the aim of the target audience and situational aspects.
- Equivalence Theory (Nida, 1964; Catford, 1965): Aims at maintaining dynamic or formal equivalence between text and translations (e.g. in the field of law and medicine).
- Ethical Translation Models (Pym, 2012; Chesterman, 2001): Deal with the accountability of a translator, the absence of bias in him/her, and the moral implications of his or her decisions on the stakeholders.

Every text translated is assessed as:

- Terminological correctness: Do technical and domain-related words find proper appreciation?
- Syntactic fidelity: Does it retain or correctly modify sentence structures?
- Cultural adaptation: Are cultural specifics localized or described?
- Ethical compliance: Are the values of confidentiality, impartiality, and informed consent observed?

This framework ensures a holistic evaluation of the quality and morality of translations.

3.4 Limitations

Although from this study it is possible to see the overview of the translation issue in the legal and medical spheres, there are several limitations to consider:

- Availability of parallel corpora: There is limited access to bilingual in Hindi-English legal and medical document pairs.
- Regional differences in the training of translators: The generalizability may be impacted by differences in the local practices and certification levels.
- Transforming nature of MT tools: Machine translation tools are constantly being improved and the results obtained might not be entirely accurate in the future.

Although it is limited, the research is very dependent and provides information on the areas where research, professionals, and policy changes need to be taken.

4. Case Studies and Examples

There is no such thing as translation errors as an issue in theory, but the impact of same has concrete and sometimes severe outcomes. This part provides evidence-based instances and real-life scenarios that can demonstrate the dangers, moral issues, and structural problems encountered by translators in these areas.

4.1 Case studies on Legal translation

Case Study 1: U.S Immigration: Lupus mistranslation; The testimony of a Spanish-speaking asylum seeker in a 2013 case in the United States was compromised because of an essential mistranslation. The translator translated the sentence “*me violaron*” (they raped me) into the sentence “they violated me”, which was a big misrepresentation of the emotional and legal quality of what the witness was saying. This mistake

postponed the verdict on asylum, and the question of the qualification of interpreters and courtroom norms arose (Gonzalez, 2013).

Case Study 2: Contractual Ambiguity in International Trade: A contract of an affair between France and England to collaborate in the pharmaceutical industry translated the term “*garantie de bonne fin*” as “guarantee good end”, to “performance bond”, instead of using the word performance bond as it should have been used under the law. It is this mistranslation that caused misunderstanding in terms of financial obligations and almost resulted in a lawsuit. The only way out was a bilingual legal expert who, after observing the original document and explaining its intended meaning, brought resolution (Cao, 2007).

Case Study 3: Misunderstanding of Courtroom in Canada: In one criminal trial in Ontario, Canada, a Punjabi translator misunderstood the statement of the defendant who said that “he had hit him in the self-defense” and interpreted it as meaning that “he had hit him because he had insulted him”. This misinterpretation resulted in the legalization of the case scenario and its modification only after a second interpreter listened to the audio recording. It provided insight into the necessity of certified legal interpreters and real time quality control (Trosborg, 1997).

4.2 Medical Translation Case Studies

Case Study 1: Dosage Error in Discharge Instructions in a hospital: A patient in California was discharged with machine-translated discharge instructions translated to Spanish. The term take once a day was translated wrongly into several times, as take after eleven times a day based on the confusion between once (Spanish once, which translates as eleven) and once (English once, meaning one time). The patient was sent to the hospital once again; this time, it was related to overdose complications. The case is commonly used in medical translation training (Angelelli, 2004).

Case Study 2: Informed Consent Scenario in India: In a multinational clinical trial in India, the translation of the informed consent form was done in Hindi. The word placebo was translated into *Nakli dawa* (fake medicine), which made the subjects feel that they were cheated. Some of them dropped out of the research and the ethics committee ordered that the research should be revised to be culturally neutral (Montalt and Davies, 2007).

Case Study 3: Case Misdiagnosis at Refugee Healthcare in Germany: A 35-year-old Syrian refugee registered in Germany presented with complaints of tightness in the chest during her medical intake interview. This was translated to the Arabic interpreter as pain in the stomach, leading to misdiagnosis and delay in treatment of a cardiac condition. The error was uncovered only when the symptoms of the patient were reviewed by an additional bilingual nurse. The case highlighted the importance of such institutions as medically trained interpreters in the context of healthcare among refugees (Pöchhacker, 2008).

4.3 Machine Translation (MT) Failures in Practice

Example 1: Translation of legal documents with the help of Google Translate- Alkatheery (2023) recorded various inaccuracies when translating legal documents into Arabic with Google Translate. Such terms as “الإدارة مجلس” were misread as “council” rather than “board of directors” and “ضمن الاعتراض” was rendered as “objection in the minutes of the council’s decisions,” thereby losing its legal meaning of formal recording. These are mistakes that might have contributed to the misunderstanding of the corporate governance processes.

Example 2: Medical Instructions through MT in Emergency Tablets- In multilingual hospitals, the use of the tool occurred during the COVID-19 pandemic, where the hospitals used tools allowing communication with patients using different languages. In one instance, when the instruction to take with food was translated into Hindi as “khane ke saath le lo”, the patient understood it to indicate that “he should eat first and take medication” and thus, drug absorption was delayed. It was found that the mistake was in the literal translation, without being put into a pharmacological context (Mehandru et al., 2022).

These case studies show that the role of human expertise, cultural sensitivity and moral responsibility in legal and medical translation is extremely important. They also note the shortcomings in machine translation to highly specialized areas as well as the importance of stringent quality control measures.

5. Ethical and Legal Implications

The reason being that within such areas the translators will be dealing with information that is sensitive, and the translator is expected to be implicated to standards of ethics of the profession and should ensure that he or she does not violate the rights and safety as well as the dignity of the people involved. In this section of the paper, we will look at the codes and legal provisions enforced to address translation in a high stakes' scenario regarding confidentiality, precision, informed consent, objectivity and the constraints associated with machine translation.

5.1 Data Protection and Confidentiality

The privacy of any information is one of the foundations of legal and medical ethics. Documents that translate personal, financial or health-related information are often dealt with by translators. Patient records, diagnosis reports and consent forms should be highly confidential in the medical situation. Court records, immigration records, as well as a contract of law, have sensitive data that legal translators might have to work with.

Laws governing the world, like the General Data Protection Regulation (GDPR) in the European Union and the Health Insurance Portability and Accountability Act (HIPAA) in the United States, require institutions and translators to safeguard personal information to avoid legal liability. Violation of confidentiality by a person through machine-translated tool misuse or due to negligence may lead to legal action and professional incredibility (Poehhacker, 2008).

Accuracy and Accountability: the management of an organization must maintain accuracy in social, economic, and information policies (Khosr, 2013, p. 67).

5.2 Accuracy and Accountability

The management of a firm must be accurate in social, economic and information policies (Khosr, 2013, p. 67). Legal and medical translation does not pretend to favor accuracy, but it is a legal and ethical requirement. The obligations, rights, or liabilities of a legal contract can be varied by mistranslation. In healthcare, dosage side-effects or symptoms may be misdiagnosed, treated incorrectly or even be fatal due to poor medication translation.

Professional codes of ethics, like the ones released by the American Translators Association (ATA) and the International Medical Interpreters Association (IMIA), focus on the translator's responsibility to provide perfection, completeness, and neutrality. When a translator is asked not to paraphrase, omit, or distort the content, he/she is not supposed to do this until he/she is instructed and documented. Institutions employing translators also have some accountability in the matter as they are required to educate them well, supervise and assist them.

5.3 Informed Consent and Patient Rights

Informed consent is a legal and ethical standard in medical practice and study. The patients need to be aware of the nature, dangers, and potential advantages of medical procedures before undergoing them. Translators are very important in making sure that the consent forms are made in a way that they are understandable and culturally acceptable.

The translation of a consent form may ruin a consent procedure, which puts healthcare providers at risk of a lawsuit. In the case of a translator translating the word placebo as fake medicine, it can be seen that this would be misleading to the participants and reduce the credibility of clinical trials. Ethical translation involves precision in language and culture, as well as simpler language adaptation (Angelelli, 2004).

5.4 Fairness and Ethical Behavior

Legal translators and interpreters are expected to be unbiased, particularly when they are in a legal environment. They are not supposed to support a party, distort evidence, and insert personal views. The National Association of Judiciary Interpreters and Translators (NAJIT) provides rigid rules of conduct in courtrooms with the responsibility of reporting their mistakes and dislikes in conflict-of-interest cases.

It is also not permissible for medical translators to influence the decision of the patients or interpret medical advice. They mediate not to counsel communication, but to facilitate it. Ethical issues can also be involved

as patients request translators to advise or clarify something they cannot. The professional behavior must have some limits and follow the institutional guidelines.

5.5 Risks of Machine Translation and Ethical Errors

The growing applications of machine translation (MT) in law and medicine are associated with considerable ethical issues. MT tools do not have contextual knowledge and fail to ensure confidentiality. Free online translators can also release information to third-party servers when one translates sensitive documents, which is against the law of privacy.

Furthermore, even minor mistakes in translating a word into another language, like the mistranslating of “once” in Spanish as “eleven” can be disastrous. Ethical management inspections involve having the outputs of the MT taken through human translators who are competent in the language to be used, and that institutions come up with clear procedures on when and how the MT should be used. According to Vieira et al. (2021), human validation in medical translation is necessary because any small mistake can pose a threat to the well-being of patients.

5.6 Legal Liability and Standards of Professionalism

There can be legal liability on the translators when they commit mistakes, which cause injury. Certain jurisdictions require certified legal translators to sign affidavits to state the accuracy of their work. To work in hospitals or in clinical trials, medical translators may be mandated to undergo special training and certification.

Failure to observe professional standards may lead to penalties, including the revocation of certification, or the individual may be taken to court. The institutions should make sure that the translators are properly trained, assisted, and supervised. The role of ethical behavior, constant learning, and following the best practices in translation is supported by legal liability.

6. Terminology Management and Cultural Competence

To achieve accuracy, clarity, and ethical integrity in legal and medical translation, appropriate terminology management and cultural competence are needed. These areas are very dependent on some specialized language and culture-embedded notions that need to be approached with both precision and delicacy. In this section, we will examine what to do to handle the term. There is always the question of the use of glossaries and translation memories, and the significance of cultural awareness in translating.

6.1 Terminology Management in Legal Translation

Legal translation requires uniformity and perfect precision in the usage of vocabulary, where data is warranted across various regions and their authority. Legal terms usually have a certain meaning that cannot be easily replicated in other languages. Indicatively, a term used in the law of contract, such as consideration, cannot be directly translated into several civil law systems, which is why translators must elaborate or estimate the role it plays (Cao, 2007).

This is assisted by terminology management software, including term bases and bilingual legal vocabulary, which ensures that translators are consistent and not ambiguous. Such CAT tools as SDL Trados and MemoQ enable users to build and retrieve terminology databases, which means that legal terms will be used with consistency across projects. Bowker (2002) points out that the translator needs to be extremely careful about terminological consistency in legal translation because any slight difference can change the legal intent.

The concept of functional equivalence is still a rule of thumb in the management of legal terms. There is a need to apply the legal role over the literal application by translators, particularly in applying culturally specific legal terminologies. According to Šarčević (1997), it is essential to use terminological bridges that provide the possibility to relate the incompatible law systems to each other and translate them properly.

6.2 Medical Translation Terminology Management

Medical translation implies a huge and dynamic vocabulary of technical words, abbreviations, and shortenings. Translators should be conversant with medical nomenclature and medical classification

systems like ICD-10 and SNOMED CT. Clinical errors may be severe in cases of the misrepresentation of terms such as BP (blood pressure), MI (myocardial infarction), or Rx (prescription) (Alquraishy, 2025).

Medical terminologies are managed using glossaries and translation memories, that are important. The CAT tools allow translators to save and recall the previously translated terms, and this reduces the chances of inconsistency. Montalt and Gonzalez-Davies (2007) suggest that domain-specific glossaries and shared terminology databases are needed to enable accuracy and standardization.

Medical translators are also required to know about the regional changes in terms. As an example, the name of the drug known as paracetamol is widespread in the UK, whereas in the US, acetaminophen is the term that should be employed. To make sure that the target audience can understand and will be safe, translators need to fit the terms in accordance with linguistic and cultural realities.

6.3 The Field of Legal and Medical Translation in Cultural Competence

The concept of cultural competence refers to the capacity to comprehend and honor cultural disparities that affect the usage of language, legal standards, and health care procedures. Cultural competence in legal translation is the awareness of jurisdictional issues, legal culture and social values. The translators have to know how the notions of law, such as due process, equity, or custody, are used in different legal systems (Trosborg, 1997).

Cultural competence is also important in medical translation. Different cultures differ in terms of health beliefs, practices and perceptions. Such terms as mental illness, palliative care, or vaccination can have a different connotation and to avoid misunderstanding or the feeling of stigma, one must adjust to these terms (Poehchacker, 2008). As stressed by Angelelli (2004), culturally sensitive translation helps the patient to have more trust and increase informed decision-making.

Competence in culture is also related to language style and register. Translators are required to make changes in tone, formality and idiomatic phrases to accommodate the demands of the target culture. As an example, the language used to translate a medical consent form given to elderly patients in rural India can be simplified and use language and culturally relevant metaphors.

6.4 Terminology and Cultural Competence Training and Resources

Terminology management and cultural competence are becoming among the most practiced aspects of professional training and certification programs. Organizations like the ATA, the IMIA and NAJIT can provide translators with workshops, webinars and resources to assist them in building these skills. Pym (2012) supports the idea of translator training with the combination of linguistic, ethical and intercultural competencies.

Agreements like multilingual health glossaries from the WHO and web platforms like IATE (Inter Active Terminology for Europe) make standardized language definitions available in other languages. These materials aid in the translation of neutrality and culture in legal and medical terminologies.

7. Technology and Translation Tools

Legal and medical translation have introduced the application of technology in legal translation and medical translation, that has changed the culture of practice. Even though computer-assisted translation (CAT) tools and machine translators (MT) are very fast and efficient, they come with problems of accuracy, sensitivity to context, and ethical management. This paragraph discusses the advantages of these technologies and their drawbacks, their applications in specialized fields, and the optimal practices in the responsible use of these technologies.

7.1 Computer-Assisted Translation (CAT) Tools

Translation tools are to be used to support human translators, to give them help in translation memories, terminology databases and quality assurance. Most popular is Trados SDL, MemoQ, Wordfast and OmegaT. Such tools enable translators to be consistent in the documents and especially in situations like legal and medical terminology, one is very concerned with the precision of the words.

Bowker (2002) notes that the application of the CAT tools in legal translation is very priceless since there is uniform application of legal terms in the contracts, statutes and even in the court records, this will reduce

the ambiguity resulting in more legal clarity. The medical translation experience has made use of CAT tools in managing the management of complex terminologies and abbreviations where patient information leaflets, clinical trial protocols, and diagnostic reports get translated properly.

The cooperation of translators is also possible with the CAT tools, where groups can exchange glossaries, translation memories, and style guides. This proves to be handy, especially in large projects where multilingual legal or medical documents are involved. Nevertheless, CAT tools must be well configured and customized to domain-specific requirements. The bases of the generic terms are not always sensitive to specialized terminology, and or require manual correction as well as human involvement.

7.2 Machine Translation (MT) Systems

Google Translate, DeepL, and Microsoft Translator are the MTS based on statistical and neural algorithms to provide translations automatically. Although the introduction of neural machine translation (NMT) has made a considerable step forward in terms of the quality of translation, this method is still deficient in specialisation.

There was a significant disproportion of three-quarters of Arabic-English legal translation lexical errors resulting from the use of MT systems, but other syntactic and register-related errors as well (Alkatheery, 2023). Semantic error in medical translation. According to Abo Al-Timen (2023), semantic errors included misunderstanding of chronic as severe, and dosage/amount mixed up. Such errors may be very devastating, such as wrong diagnosis, misunderstanding of the law, and jeopardized patient care.

Idiomatic expressions, culturally embedded concepts, and terminology, all domain-specific expressions, especially expose MTS to errors. Mehandru et al. (2022) also reported instances of patients being confused by the literal translation of medical instructions and delayed treatment. Vieira et al. (2021) warn against excessive usage of the MT in a clinical setup and say that human validation and review of context are required.

7.3 Hybrid Approaches and Post-Editing

To address the disadvantages of MT, numerous professionals embrace hybrid methods that combine MT with human post-editing. This is the workflow whereby, in the workflow, the initial translation, generated by the MT, is examined and edited by a professional translator. This technique provides efficiency and accuracy, particularly with mundane legal and medical papers.

The process of post-editing needs to be highly trained because the translator needs to detect and rectify unnoticed mistakes which are not evident immediately. The ethical considerations are also provided ethically; the translators should make sure that the translated texts are up to the professional standards and that they do not significantly affect the meaning or safety. According to Pym (2012), translator agency is crucial to post-editing, as human control is critical to quality and accountability.

7.4 Emerging Technologies and AI Integration

The new AI technologies have brought new terminology extractors, context translation, and predictive writing technologies. Based on large corpora, AI-powered sub-systems can find patterns, offer translation suggestions and signal problems. Although such technologies have potential, they are still in their developmental stages and should be applied in legal and medical practices with a lot of caution.

According to Haque et al. (2020), AI systems that are trained on the general corpora tend to be inaccurate in terms of legal and medical translation. Specialized training with domain-oriented datasets could help to enhance performance, but it is costly and time-consuming. Ethical oversight control is also of paramount importance, especially when sensitive or confidential data is processed by AI tools.

7.5 Best Practices for Technology Use

The best practices to be followed by professionals to achieve responsible and effective use of translation technology should include:

- **Customize tools for domain-specific use:** Customize the use of tools as legal and medical tools by creating specialized glossaries, term bases, and style guides.

- **Validate MT outputs through human review:** It is always necessary to engage qualified translators in the process of post-editing and ensuring quality.
- **Protect confidentiality and data security:** Do not use online free MT systems with confidential documents; secure and encrypted systems must be used.
- **Invest in training and certification:** Provide the competence to know the usage of CAT and MT as well as to apply it morally.
- **Monitor and evaluate tool performance:** Linguistic check and steady measurement. This involves periodically reviewing and assessing tool equality and cost-efficiency under actual-world conditions.

These practices allow us to create a balance in terms of technological efficiency and professionalism and provide an assurance that translation in the field of legal and medical practice is correct, ethical, and culturally competent.

8. Translator Training and Certification

Professional training and license will be necessary in ensuring that the translators employed in the legal and medical disciplines will possess the necessary linguistic, technical, and ethical competencies. The stakes are too high, so, the translators are not only equipped with language competency, but domain one, cultural, and with the knowledge of the technologies of the translation. The section deals with training models existing nowadays, the standards of certification, and the changing environment of training translators.

8.1 Core Competencies for Legal and Medical Translators

The presence of linguistic skills is insufficient in this case, and it should be a special set of legal and medical translation that requires a high level of skills. The translators should also be conversant with medical practice, laws and ethics that should be applied in the local setting. According to Poehchacker (2008), healthcare interpreters must be trained in medical terms, patient confidentiality, and informed consent processes. Likewise, legal translators should be able to understand the procedural law, structures of contracts, and proceedings in the courtroom (Cao, 2007).

Core competencies include:

- Precision in terms; Legal and medical word knowledge, including abbreviations and acronyms.
- Cultural competence: The skill to adjust the content in terms of cultural norms and expectations of the target audience.
- Ethical consciousness: Knowledge around confidentiality, impartiality, and professional limits.
- Technological competence: Waring of CAT tools, MT systems and terminology management platforms.

Each of these competencies is the basis of the successful and responsible work of translators in specialized areas.

8.2 Training Programs and Curricula

Specialized training programs on legal and medical translators exist in universities, professional associations and private institutions. Such programs often consist of language, translation theory, and field-specific vocabulary, ethics and technology. Montalt and Gonzalaz-Davies (2007) propose experiential learning by writing drafts, simulation, and case studies.

The following are examples of training models:

- Graduate programs in translation studies: Offered by institutions such as the University of Geneva, Universitat Autònoma de Barcelona, and Middlebury Institute of International Studies.
- Certificate programs: There are certificate programs offered by such organizations as the American Translators Association (ATA), International Medical Interpreters Association (IMIA), and the National Association of Judiciary Interpreters and Translators (NAJIT).
- Continued education: Webinars, web-based training, and online programs on the latest trends, technology, and ethical issues.

These programs are aimed at equipping translators with the real-life world through training and facilitating lifelong learning.

8.3 Certification Standards and Professional Accreditation

A certification process is used as a standard of competence and professionalism of translators. Legal A certified translators can be asked to sign fidelity affidavits about the quality of their work. Certification can either be compulsory in working within hospitals or even clinics and or even clinical trials in medical settings.

Some of the most crucial certification institutions are:

- **ATA Certification:** Provides examinations in different pairs of languages and implies the observance of a professional code of ethics.
- **IMIA certification:** Specializes in medical interpreting and translation and has accuracy, confidentiality and cultural competence standards.
- **NAJIT Certification:** Specializes in the translation and interpretation of the law, procedural law, and terminology of the law.

The certification improves credibility, accountability and assurance of clients and institutions.

8.4 Educational Challenges of Translator

Regardless of the existing training and certification programs, there are still a few challenges:

- **Access and affordability:** Barriers to access and lack of access to quality education can include high costs and geographic unavailability of quality education.
- **Rapid technological change:** Translators should constantly refresh and expand their expertise to gain access to the changing tools and platforms.
- **Standardization:** Differences in certification standards between different locations and various institutions may result in variation in quality.

These issues can only be solved through collaboration between educators, professional bodies and policymakers to widen access, align the standards, and facilitate the growth of professional development.

8.5 Recommendations for Strengthening Training and Certification

To make translator training more effective in legal and medical translations, the recommendations below can be suggested:

- **Bring in interdisciplinary new material:** Introduce learning units teaching law, medicine, ethics and technology into translation programs.
- **Ensuring mentorship and learning between experienced and novice translators:** foster co-working and exchange of knowledge.
- **Widen language coverage:** Curriculum training and certification examinations on minority language pairs.
- **Empowering remote and hybrid education:** Use digital technology to connect with more people and meet vast learning requirements.
- **Introduce international benchmarks:** Work together on the international level to establish standard certification and ethical standards.

These plans seek to establish an efficient and inclusive system of translator training to ensure that the practitioners are aptly equipped to address the headings of legal and medical translation.

9: Recommendations and Best Practices

A detailed list of recommendations is required to enhance the quality, dependability, and ethical issues of legal and medical translation. These practices are best practices aimed at translators, institutions, policymakers, and technologists in developing technology. They would like to solve the issues of a system, improve the professional competencies and make sure that translation fulfills the vital purpose in securing rights and health.

9.1 For Translators

Proficient translators are at the frontier of accuracy and ethical integrity. To reinforce the practice, the following recommendations can be given:

- Make an investment in domain-specific training: Access special training in the areas of law and medicine so that we can have a deepening of contextual understanding (Montalt and González - Davies, 2007).
- Be consistent in terminology: With the CAT tools and glossaries, be term sensitive so that there is consistency in the documents (Bowker, 2002).
- Ethical standards maintenance: Adhere to codes of conduct concerning the aspects of confidentiality, minimal or absent prejudice, and informed consent (Pöchhacker, 2008).
- Lifelong learning: Be informed about the changes in terminology, legal changes and medical innovations.
- Participate equally in peer review and mentorship: Work together with other nurses involved to enhance quality improvement and best practices.

Such moves assist the translators to handling tricky texts and observing professionalism.

9.2 For Institutions and Employers

The environment that must be created should facilitate quality and accountability in organizations that are dependent on translation services:

- Hire qualified experts: Be as selective as the certified translators with unprecedented education and expertise in the field (Cao, 2007).
- Offer entry to secure tools: Process sensitive legal and medical data by means of encrypted platforms.
- Introduce quality assurance measures: Have review systems put in place to do away with any mistakes before publication or use.
- Programs: Although authorities are all operating in the same direction, distributed and collaborative efforts are necessary to create a completely developed program to help patients understand their medical conditions and disabilities.

The high standards and minimization of risk can only be supported within an institution.

9.3 For Policymakers and Regulators

Regulatory bodies and government agencies are influential in regulations and in defining standards and safeguarding the interests of people:

- Certify the art of high-stakes translation: Have certified translators do the trial, as well as legal proceedings.
- Implement data protection legislation: Check the adherence to symptoms of GDPR and HIPAA, as well as other privacy regulations, in translation processes.
- Fund research and innovation: Fund the research, technology integration, and ethical practices research.
- Make training and certification standard: Cooperate in aligning qualification and ethical standards across national boundaries.
- Facilitate language access policies: Make sure that all medical and legal services are provided in more than one language to facilitate equity and inclusion.

The quality of translation can be improved and the population under stress can be protected through policy interventions.

9.4 For Technology Developers

The developers of CAT and MT tools must focus on the accuracy, security, and expert-specific customization:

- Make models trained on dedicated corpora: Learn on special purposes of complex corpora: legal and medical data to enhance contextual sensitivity (Haque et al., 2020).

- Facilitate human-in-the-loop processes: Construction systems with post-editing and expert inspection.
- Guard information of the user: There should be no non-compliance with privacy legislation, and sensitive content should not be revealed through the platforms.
- Be transparent and explainable: This means that the users can be informed of the process of translations being written and flagged.
- Work closely with people in the field: List the features with translators in designing and testing, rather than real-world requirements.

Performance of the translators and mitigation of risk are improved by ethical and effective technology development.

9.5 Cross-Sector Collaboration

To address the issue of translations in law and medicine, the sector should work together:

- **Create interdisciplinary task forces:** Enlist linguists, lawyers, doctors, technologists and ethicists to tackle the systemic problems.
- **Create common resources:** Create training material, style guides, and glossaries that are accessible to everyone all over the world.
- **Organize conferences and forums:** Promotions and sharing expertise between the stakeholders.
- **Observe and assess performance:** Monitor translation error, litigation and medical incidents to institute policy and practice.

Teamwork generates creativity, responsibility and constant development in specialized translation.

10. Conclusion

Legal and medical translation are not merely linguistic exercises, but it is exercising responsibility, accuracy as well as ethical custodianship. Any flaws in such spheres, as it has been demonstrated in this paper, may have far-reaching consequences, including untruthful justice or death in hospital. The employees of the mentioned spheres will have to act under significant pressure, dealing with complex terminology, cultural specifics, and ethical standards in a state of time limitations and stakes.

As has been argued in this paper through literature, cases, and technological analysis, very stringent training, certification, and quality assurance are necessary. Even though machine translation is becoming more sophisticated, machine translation is not good enough to meet the contextual and ethical requirements of legal and medical texts. Professional standards in the usage of computer-aided tools and with human knowledge are needed.

Stakeholders need to invest in interdisciplinary education, legal and ethical protection, and collaboration between the fields to advance the field. Expatriates need to be equipped with the tools, knowledge, and support that will allow them to do their tasks successfully. The importance of translation as one of the key elements of justice and healthcare, and not just a marginal service, should be perceived by institutions and policymakers.

Finally, the quality of translation is important to the integrity of the legal systems and the safety of the patients. Having the emphasis on accuracy, accountability, and cultural competence, we can be certain that the translation will fulfill its most critical role of language translation, rights will be ensured, and life will be saved.

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