

**UNFAITHFUL BEAUTIES
AND INVISIBLE**

ERRORS

UNFAITHFUL BEAUTIES AND INVISIBLE ERRORS



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RIGHT AND WRONG IN TRANSLATION

BOGDAN BABYCH & VAHRAM ATAYAN

Translation errors – whether committed by humans or machines – can be funny, irritating, or downright dangerous. So how can they be avoided? And, given the way meaning tends to shift across languages and cultures, is there such a thing as a single correct translation? Researchers at Heidelberg University's Institute for Translation and Interpreting are trying to answer these questions. Their work focuses on Machine Translation technologies that are used in popular systems such as Google Translate or DeepL. Predicting and detecting potential Machine Translation errors is key to improving the technology and, ultimately, striking a balance between fully automated translation processes and those that require human intervention.



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Most translators (a collective term for professionals in translation, interpreting, and other types of interlingual communication such as subtitling, software localisation, etc.) would probably just roll their eyes at the topic of this issue – right and wrong –, and understandably so, since all too often the public discussion in this field is reduced primarily to references to actual or alleged translation errors. A five-minute internet search will turn out phrases like: “Because he is one of the sophisticated language artists, some translation errors are especially annoying...” or “that Bonsai Technik 2 is now accessible to the German-speaking public again, albeit including the translation errors of the German first edition”, “Some translation errors or inaccuracies cannot be ignored”, etc. The actual – often remarkable – performance of the translation usually goes unmentioned; paradoxically, one could argue that the better a translation, the more invisible it is. When it comes to Machine Translation, too, the discussion fluctuates between sometimes deserved but often rather undifferentiated enthusiasm and a hunt for, ideally, the funniest mistakes possible.

Nevertheless, Translation Studies is probably one of the few research areas in which an explicit discussion of what is right and what is wrong has a long academic tradition and keeps recurring in new forms. The questions of what “errors” actually are, in which areas and according to which criteria they should be looked for and identified, and how the underlying ideas of “correct” translation or interpreting should be understood, are among the central issues in Translation Studies and have highly relevant implications for the theory, evaluation, and also practice of translation. In this article we would like to trace this development and show that an accelerated parallel development is also taking place in relation to Machine Translation, and discuss how complex types of errors in machine and human translation can be recognised and avoided.

In pre-scientific discussions of the issue of right and wrong in translation, it is easy to identify the earliest criterion used: literal fidelity. Central to this, of course, was the context of the translation of the Holy Scriptures – in the positive sense, as in the legend of the creation of the Septuagint, which asserts the existence of a single necessarily

correct Greek translation of Jewish Bible texts, and in the negative sense, as in the dogma of the untranslatability of the Koran.

However, translators and philosophers in those times also recognised the inherent conflict between faithfulness to the original and naturalness of expressing the same ideas in the target language, as illustrated by century-long debates about giving preference to formal vs. semantic equivalence – i.e. “word-for-word” vs. “sense-for-sense”, or “naturalising” vs. “alienating” translation – or the controversial seveneenth-century metaphor of “les belles infidèles”, referring to the liberties taken in the translated texts.

Is there a single correct translation?

In the twentieth century, more systematic approaches were developed, primarily within a linguistic turn in Translation Studies, which recognised the importance of analysing systematic differences between languages and modelling translation “shifts”, i.e. necessary deviations from word-for-word equivalents to convey the same message, employing asymmetric resources in another language and potentially presenting a different perspective on the same situation. The central idea has been that translation equivalence is not absolute, but optimal, given the lexicon, grammar and typical usage patterns of the target language. Equivalents on lower levels (e.g. word meanings or the syntactic structure of the source sentence) can be sacrificed to preserve higher level equivalence at the sentence and textual levels, which is relevant for communication goals. These deviations from absolute equivalence, however, were still viewed as the last resort: in this paradigm, translation, according to a popular maxim, had to be “so treu wie möglich, so frei wie nötig” (as faithful as possible, as free as necessary). In this line of research, Eugene Nida (1914 to 2011) proposed the concept of “dynamic” or “functional” equivalence to ensure that the effects of source and target texts and the response of their recipients are the same. In the translation process, functional equivalence normally takes precedence over formal and semantic equivalence.

These views were further challenged in the 1970s by functionalist translation theory, with the first major contribution made by Heidelberg University scholars Katharina Reiß (1923 to 2018) and Hans Vermeer (1930 to 2010). Their research was based on the idea that translation quality can be defined as its suitability for a specific purpose or use, which varies according to the text genre, intended audience or situation. The consequence is that there is possibly no single “correct” translation, as the same text would need different translations for different audiences or purposes. The equivalence, or closeness of the translated text to the source, is no longer the only criterion for translation quality, especially in cases where equivalence is in conflict with the intended purpose of the translation. For example, the

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main function of advertising texts is “operational”, i.e. they are intended to affect the purchasing behaviour of target groups of consumers. Therefore, the quality of translation of these texts has to be measured not in terms of “correctness” or faithfulness to the original, but through their effectiveness in performing these tasks for consumers who speak a different language, possibly have a different cultural background, or live in a different country.

From translation to cross-cultural mediation

These ideas, now known as “radical functionalism”, accounted for a much broader range of phenomena in interlingual communication and elevated the status of translation from mere faithful reflection of the original to more nuanced cross-cultural mediation. However, the main point of criticism has been that this comes at the cost of effectively eroding the boundaries between translation and non-translation, while this theory offers no guidance as to when a translation effectively becomes wrong. Later functionalist theories, therefore, tried to account for different dimensions of a translation’s engagement with the source text. For example, Cristiane Nord (whose research and teaching career has also been closely associated with Heidelberg University) distinguishes between two types of commitment of the target text to the source: the “translation” proper and the “version”, the latter being defined as a text that goes beyond linguistically necessary changes and responds to extralinguistic demands, e.g. cultural or social ones.

Yet another point of criticism goes in the opposite direction: it comes from researchers whose work has focused mainly on translating political, ideological, and subjective evaluative texts (more recently also those containing

propaganda, misinformation, hate speech or manipulative language). These scholars have claimed that the departure from the principle of equivalence should be even more radical, since such texts cannot be translated “objectively”, in a completely unbiased way. Here, translators often have to decide which side they support in a public debate, or which system of values they defend; they become pro-active participants in communication and may choose a resistant (rather than compliant) reading of the source text.

An example cited in this context is Ralph Manheim’s translation of “Mein Kampf” (1943), where the translator purposefully preserved the incoherence and absurdity of the original and in the preface made his own sarcastic comments about the author and his level of argumentation, e.g. “... he seldom pursues any logic inherent in the subject matter. He makes the most extraordinary allegations without so much as an attempt to prove them [...]. Where Hitler’s formulations challenge the reader’s credulity, I have quoted the German original in the notes. Seeing is believing”. In some cases, the translator’s failure to intervene could lead to diplomatic incidents or irreparable public misunderstandings, e.g. when George W. Bush used the word “crusade” referring to the war on terrorism: the word is generally neutral in English, but has strong negative connotations in the Arab world. The argument goes that its “correct” equivalent translation unintentionally reinforced fears that the war was being waged against Muslims, and that it would have been the responsibility of the translators to recognise the need for intervention, which could have prevented this unintended interpretation. A better strategy would have been to use a neutral or positive concept that describes the suggested idea of a “concerted effort” without contentious historical

references. Basil Hatim argues that this idea is close to the original meaning of the Arabic word “jihad”, which has been hijacked by Islamic fundamentalists and, in turn, has been mistranslated in Western societies as “holy war”, becoming synonymous with religious extremism.

Where Machine Translation can go wrong

Machine Translation (MT) technology automates the processes of translation between human languages, and is now used in systems such as Google Translate or DeepL. It is compelling to see that the developments in MT and MT evaluation, starting in the 1950s, have largely mirrored the evolution of the equivalence theories discussed above. Early ideas focussed on what can be described as formal equivalence, encoded in collections of rules for linguistic analysis of the source text, cross-lingual transfer and generation of the target text. However, in real-world systems with large linguistic coverage, different competing rules could apply to overlapping segments in the source sentences, and it has been difficult to manually develop further rules to determine which equivalents should be given priority for different contexts. Statistical MT systems developed between the 1990s and early 2010s used large collections of human translations and monolingual target texts to automatically derive “phrase tables”, i.e. databases of possible single and multi-word translation equivalents, and then to automatically learn the optimal balance between the “translation model” (faithfulness to most probable translation equivalents), and the “language model” (naturalness of combination of the most probable neighbouring phrases in the target language texts). Model parameters are automatically adjusted to maximise the value of an automated MT evaluation metric, such as BLEU, which gives a quality score for each sentence based on how many word sequences are the same in the MT output and in the “gold standard” human reference translation of the same sentence.

More recent neural models for translation, such as transformers, and MT quality assessment, such as COMET, learn the closeness of the source and target sentences in a semantic space, so that they are able to more easily equate paraphrases or different translation variants of the same expression. In this sense neural MT essentially has moved from “formal” to “semantic” equivalence. These developments lead to much greater usability of neural MT systems, which can now produce translations that are fit for purpose. In collaborative translation workflows, this increases translators’ productivity, saving time and money. However, neural MT systems still do not achieve functional equivalence, that would require taking into account the expected effects of the translated text on the target audience. Recent studies have indicated that even though the overall number of errors has been reduced, compared to rule-based or statistical MT systems, the neural MT architecture produces

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TREULOSE SCHÖNHEITEN UND UNSICHTBARE FEHLER

RICHTIG UND FALSCH IN DER ÜBERSETZUNG

BOGDAN BABYCH & VAHRAM ATAYAN

Die Frage nach dem Richtigen und Falschen steht schon lange im Mittelpunkt des translationswissenschaftlichen Interesses. Historisch hat sich die Konzeption des Fehlers in dieser Reflexion von der Wörtlichkeitsverletzung über die Ungenauigkeit des Sinns bis zur Inadäquatheit der Übersetzung für die gegebene Kommunikationsintention gewandelt. Diese letzte, von Heidelberger Forschenden wie Katharina Reiß und Hans Vermeer maßgeblich geprägte Auffassung führt zu einem dynamischen Konzept des Richtigen und Falschen in der Translation.

Interessanterweise scheint sich in der automatischen Evaluation der maschinellen Übersetzung eine ähnliche Entwicklung zu vollziehen. Während es bei früheren Evaluationsmodellen vor allem um die Messung der Entsprechungsgenauigkeit von Wörtern und Wortverbindungen ging, wird heute mit leistungsfähigen Sprachmodellen die semantische Nähe der Originale und Übersetzungen gemessen. Der nächste Schritt – die automatische Evaluation der kommunikativen Angemessenheit von Übersetzungen im Kontext – stellt jedoch eine große Herausforderung dar, weil wir es hier mit intersubjektiv gut nachvollziehbaren, aber schwer formalisierbaren Konzepten wie kommunikativer Intention oder Angemessenheit zu tun haben. Auch der heutige Entwicklungsstand der maschinellen Übersetzung spiegelt diese Situation wider: Trotz erstaunlicher Leistungen moderner Übersetzungssysteme ergeben sich weiterhin subtile oder auch gravierende Fehler bei der Wiedergabe der Argumentation, der Einstellung und der Intention des Originals, die durch die ausgezeichnete formale und inhaltliche Qualität der Übersetzungen umso schwerer erkennbar sind.

Wichtig ist daher eine wissenschaftlich fundierte Verbesserung der Translationsprozesse: Es geht darum zu verstehen, welche kommunikativen Konstellationen und Translationskontexte besondere Fehlerrisiken für automatische Systeme bergen, damit eine optimale Integration menschlicher Kompetenzen mit der Leistungskraft maschineller Verfahren ermöglicht wird. ●

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a greater proportion of omissions and fluent mistranslations, referred to as “invisible” translation errors.

The parallel development mentioned earlier in the discussion of what is right and wrong in the area of human and machine translation – from word equivalence to meaning preservation to functional adequacy – reaches its limits at the last step. There are two reasons for this: on the one hand, the more abstract the parameters to decide right vs. wrong (word – meaning – function), the more difficult it is to create a formalisable model. “Soft” categories such as “appropriateness”, “communication intention”, etc. are rather easy to explain and negotiate intersubjectively, but difficult to “teach” to a computer. On the other hand, an even more fundamental issue arises from the fact that machine learning is essentially not concept-based; the indirect representation of our conceptual structure in such learning processes is also by no means reliable. The impressive achievements of Machine Translation seem to indicate that translation systems do not necessarily need conceptual tools from translation science. Yet, to evaluate translations, conceptually complex ideas about right and wrong are of great importance.

Predicting and detecting translation errors

The research of our Heidelberg team on these questions therefore pursues two tasks. On the one hand, we are trying to make linguistic insights into complex and abstract areas such as argumentation that are fruitful for the automatic analysis and evaluation of translated texts, especially in order to be able to better automatically identify coherence problems or avoid errors that are not immediately recognisable on the basis of linguistic formulation alone. An example could be the fluent mistranslation of the German sentence: “Die Studienergebnisse sprechen dagegen, dass die HPV-Impfung mit Guillain Barré Syndrom, Krampfanfällen, Schlaganfällen oder Gefäßverschluss in Zusammenhang steht”, produced by Google Translate (the January 2024 version): “The study results suggest that the HPV vaccination is associated with Guillain Barré syndrome, seizures, strokes or vascular occlusion”, where the generated *contre-sens* may lead to wrong medical decisions. Sometimes such fluent mistranslation can completely reverse the argumentative stance and also social attitude expressed in the text as in the following example: “Die Nobelpreise sind eine Männerdomäne. Diese Situation ändert sich leider langsam”, translated by Google Translate (the January 2024 version) to: “The Nobel Prizes are a male domain. Unfortunately, this situation is slowly changing”. Here, the wrong choice in the word order (“slowly changing” instead of “changing slowly”) creates a negative stance towards a stronger presence of women in science.

On the other hand, we try to take the question of right and wrong to a meta-level by using statistical and machine

learning methods to try to predict the error proneness of a translation and the severity of possible errors based on contextual and functional parameters of a given translation situation. The aim is to achieve an intelligent distribution of tasks between fully automated translation processes, machine translation with human pre- or post-editing and, for particularly risk-prone areas, machine-assisted human translation, which reduces the probability of errors in the translation process. Even though we do not yet have a complete theory of errors that would eliminate the need for human intuition in error identification, we are trying to create tools to predict the probability of errors and associated risks from considerations of language pairs, contexts, genres, translation purposes, and abstract communicative functions such as emotion expression or argumentation.

In particular, we are developing methods to systematically detect such errors and evaluate the quality of MT on the discourse level, specifically for argumentation, evaluative and emotionally charged lexemes and other linguistic phenomena that work differently across languages. These often require non-equivalent translation strategies, and are therefore potentially difficult for MT. We hope that this line of research could lead to the creation of better models for automated evaluation and improvement of MT systems, and to a better understanding of the linguistic and translation mechanisms involved at the discourse level.

All in all, in Translation Studies, the question of right and wrong remains an open and productive topic of discussion, with no easy answers but a lot of research potential. ●

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