

# Towards Responsible Machine Translation: Ethical and Legal Considerations in Machine Translation

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Reviewed by TUFAN DE

*One way to live and die well as mortal critters in the Chthulucene is to join forces to reconstitute refuges, to make possible partial and robust biological-cultural-political- technological recuperation and recomposition, which must include mourning irreversible losses.* (Haraway, 2016, p. 101).

This is what Donna J. Haraway argues in her *Staying with the Trouble* (2016), seeking a reevaluation of the ‘kinship’ between human and non-human entities. With the emergence of posthumanism, the watertight compartmentalization between human beings and non-human entities has gradually become more porous. Critics like Donna Haraway and Annemarie Mol have discussed the demarginalization of non-human entities which include both natural species and machines, and suggested a gradual shift from ‘anthropocentrism’ to ‘chthulucentism’ in a posthuman network. The ‘shift’ necessitates a reconfiguration of existing epistemological premises of such academic disciplines as Animal Studies, Science and Technology Studies. This is even more true in the case of Translation Studies. Especially, the development of Translation Studies as a discipline, in the age of ‘Information Economy’, has witnessed a ‘technological turn’ within itself, initiating a change in the traditional method of translation praxis. Even, none can deny that the ‘technological turn’ in translation praxis has reached its pinnacle due to the invention of AI-based translation models. Translation, therefore, is no longer a mere human activity, but rather the product of human-machine interaction. It is also noteworthy how the digitised form translation, simultaneously, has given rise to newer

dimensions in terms of its application, nuanced mechanism, authorship, and its critical reception by society. The present book, titled *Towards Responsible Machine Translation: Ethical and Legal Considerations in Machine Translation* (2023), edited by Helena Minoz and Carla Parra Escartín, not only serves as a preface to the theoretical understanding of Machine Translation (MT) but also explores those ethical, legal, and technical aspects of MT. The book starts with a Forward, penned by Andy Way, which offers a comprehensive overview of the book and brings forth its main agenda. What Way further suggests is an obvious research gap in the field of Machine Translation (MT), which the book aims to address.

*Towards Responsible Machine Translation*, the fourth book in the series on *Machine Translation: Technologies and Applications*, consists of eleven chapters which are systematically divided into three parts, namely *Responsible Machine Translation: Ethical, Philosophical and Legal Aspects*, *Responsible Machine Translation from the End-User Perspective* and *Responsible Machine Translation: Societal Impact*. However, the term ‘Machine Translation’ is not new for one who consistently follows the recent trends in Translation Studies. But what is meant by Responsible Machine Translation? This would probably be the question that might trouble one when s/he comes across the title of the book for the first time. The *Introduction* (Chapter 1) by Helena Moniz and Carla Parra Escartín clarifies the notion of Responsible Machine Translation. According to them, Responsible MT is a “combination of all factors that need to be considered when developing and deploying MT systems to ensure that such systems are ethically designed, including, but not limited to data bias, data licences and rights, ecological footprint, and intended end-users” (Moniz & Escartín, 2023, p. 3). Simultaneously, the introductory part poses a plethora of interesting questions and succinctly synthesizes the major themes of the book.

## **Responsible Machine Translation: Ethical, Philosophical and Legal Aspects**

The four chapters, belonging to the first part of the book, collectively form a structured argument that throws an insight into

the genesis of ethical and legal considerations of Machine Translation. The section begins with chapter 2, titled, *Prolegomenon to Contemporary Ethics of Machine Translation* by Wessel Reijers and Quinn Dupont, which tries to foreground the major concerns and problems regarding Machine Translation at various levels and build “the bridge between the ethics of MT and philosophy and ethics of technology” (Moniz & Escartín, 2023, p.13). The chapter starts with an interesting anecdote which shows how an organisation that promotes a website for translation, often remains sceptical of its outputs. It refers to Re-open EU, a website developed by the European Commission to aid international travellers. However, the organisation safeguards itself by sending the users a notification, warning them not to completely rely upon the translations done by the website. The organisation’s obvious motive is to ensure that no one can hold them responsible for any sort of miscommunication. Then, who should be blamed for such mistranslations? The question immediately prepares a discursive site for addressing ethical issues pertaining to Machine Translation. Reijers and Dupont opine that the ethics of MT draws upon the ‘ethics of translation’ itself which, according to them, springs from a religious frame of setting. Through an illustrious discussion, they prove that translation is not restricted to the linguistic spheres only. Even our everyday activities are marked by various modes of symbolic translations, operating in multiple forms on various levels. Translation, therefore, tries to establish a commonality in plurality; it mediates “between heterogeneous elements: not just between foreign languages but within a language, perhaps even within an individual” (Moniz & Escartín, 2023, p.16). And in doing so, the process of translation, as the authors suggest, may betray the authorial intention, because translation is not a neutral process; rather always tinged with a certain ideology. This is what brings forth the need for ethical and responsible translation. So, is it only in manual translation where the ethical aspect matters? The answer is no. Reijers and Dupont strongly point out that Machine Translation also needs to be understood with its ethical dimensions. In lieu of hankering after concrete answers, the chapter raises pertinent questions related to ethical MT: “how MT can accommodate responsibility, to what extent it can create linguistic hospitality, and how it affects the

virtues of the work of translation.” (Moniz & Escartín, 2023, p.25). In chapter 3, i.e., *The Ethics of Machine Translation*, Alexandros Nousias depicts how the formation, consumption, and pattern of language can be understood in terms of a constructive process and gives recommendations for ethical design optimization. Even, the author discusses the patterns of data and stresses upon its social, cultural, and semantic meaning(s). Chapter 4 is entitled *Licensing and Usage Rights of Language Data in Machine Translation* which is a detailed study on the technical nuances of Machine Translation. According to Mikel L. Forcada, the entire process of Machine Translation (MT) hinges upon the processing of data, according to which, MT can be categorised into two groups: Rule-Based Machine Translation (RBMT) and Corpus-Based Machine Translation (CBMT). The mechanism of RBMT is deductive in nature on account of its dependency on sets of rules as well as monolingual and bilingual dictionaries; while CBMT is inductive, which processes data from examples to a huge sentence-aligned parallel corpora. Forcada has further classified CBMT into two groups: Statistical Machine Translation (late 1980s) and Neural Machine Translation (2016). The author also mentions a hybrid system which includes both of these strategies. The chapter further undertakes a detailed discussion on the intersection between Machine Translation and usage rights of language data. Chapter 5, titled, *Authorship and Rights Ownership in the Machine Translation Era* by Miguel L. Lacruz Mantecón can be regarded as a continuation of Chapter 4, which delves deep into the subjects of copyright and authorship. Mantecón strongly contends, translation of any kind, either manual or machine-aided, being “a clear example of a derivative intellectual work” (Moniz & Escartín, 2023, p.71), engages itself with legal issues viz ownership and authorship. In this context, he refers to the Berne Convention for the Protection of Literary and Artistic Works of September 9, 1886, a turning point in the course of the events, which advocates for the protection of “Translations, adaptations, arrangements of music and other alterations of literary or artistic works as original works without prejudice to the copyright in the original work” (Moniz & Escartín, 2023, pp.71-72). However, bestowing authorship in the process of manual translation is not an issue. But problems emanate in the case of MT. The author skillfully

presents the discourses and counter-discourses regarding the debate, centred on the authorship of Machine Translation. As a form of a solution, the author replicates Spain Navas Navarro's categorization between "legal author", "as the physical or legal person who commissioned the work or used the system", and the "material author", "who would be the "robot machine" (Moniz & Escartín, 2023, p.77). Mantecón finally examines a controversial subject, stemming from the symbiotic relation between MT and the translators. One cannot deny that MT, which once used to be a supporting tool, has started monopolising the central stage. MT, therefore, may turn into a Frankenstein to devour its creators. However, this assertion is declined by recent scholars who believe that translation is not a mechanical exchange between source text (ST) and target text (TT), but a perfect convergence of ST, TT, and Context. And this is what always demands human intervention.

## **Responsible Machine Translation from the End-User Perspective**

The second part encompasses three chapters that successively treat MT from the perspectives of end users. Chapter 6, *The Ethics of Machine Translation Post-editing in the Translation Ecosystem* by Celia Rico and María del Mar Sánchez Ramos, presents how, in the case of MT, a perfect synchronisation of human endeavours and machine culture is essential in order to evaluate the quality of translation outcomes. This human-machine interaction gives birth to what is famously known as 'Machine Translation post-editing' (MTPE), which can be defined as a "discipline of its own in professional workflows, with specific discussions in professional forums, as part of specialised training courses or mentioned in academic journals." (Moniz & Escartín, 2023, p.96). The chapter explains how MTPE can be a part of the 'translation ecosystem' and further engages into an elaborate discussion on the different aspects of MTPE. The last section of the chapter lists Rico and Ramos adeptly lists down a variety of ethical dilemmas in the context of MTPE: the post-editor's status, the post-editor's commitment to quality, digital ethics, and the post-editor's responsibility. In Chapter 7, *Ethics and Machine Translation: The End User Perspective*, Ana Guerberof-Arenas, and Joss Moorken talk about the ethics of MT

from the perspective of end-users and showcase how the process of machine-aided translation can create an impact upon multiple groups who rely upon its outputs. But what kind of impact is it? Does MT help others grow only materially or push them to grow as human beings? This remains an obvious question. Moreover, placing ‘ethics of MT’ at the centre, Guerberof-Arenas and Moorcken, following the taxonomy proposed by Canfora and Ottmann, imply the major types of ‘translation risks’ and cite several humorous instances of mistranslations on various social media platforms like Amazon, Facebook, Twitter and Google Translator. The chapter is not only limited to theoretical premises; rather discusses two practical experiments that give voice to the users’ experience while negotiating with raw outcomes of MT in technical and creative environments. Chapter 8, *Ethics, Automated Processes, Machine Translation, and Crises* by Federico M. Federici et al. tries to formulate a rhizomatic structure between the process of automated translation, ethics and communication crises. The chapter bats around the “four dimensions in which ethics play an important role, as regards the implementation of automated processes in crisis settings” (Moniz & Escartín, 2023, p.137). They are ‘Automation Processes and Crisis Preparedness’, ‘Crowdsourcing Data, Mapping, and Translation Automation’, ‘From Local Cascading Crises to Global Events’ and ‘From Monomodal to Multimedia Communication’. The chapter closes with what can be understood as a series of ethical considerations, on the part of the authors, which emphasises human-computer interaction, the role of humans in the processes of quality assessment, the reduction of ethical concerns regarding the application of MT and promotion of global risk reduction platforms such as GDACS, GPHIN and EIOS which must be in tuned with the latest MT resources.

### **Responsible Machine Translation: Societal Impact**

The third part of the book is exclusively interdisciplinary in nature. Not only do the chapters focus on the intersections between various societal issues and Machine Translation, but also highlight new research avenues in the area of Translation Studies. Chapter 9, titled, *Gender and Age Bias in Commercial Machine Translation* by Federico Bianchi, Tommaso Fornaciari, Dirk Hovy and Debora

Nozza mainly argues how there is an existing gender and age biases even in commercial MT. At the outset, the authors conduct a vast and descriptive literature review to solidify this claim. Through an analysis of quantitative data, the chapter further attempts to prove that, in commercial systems, the texts, produced by translation, are mostly male-oriented and seem to be older than they are. The problem, as per the authors, must quickly be solved; otherwise, it may lend support to the hegemonic status quo and promote a sort of hierarchical structure. The following Chapter, *Ecological Footprint of Neural Machine Translation Systems* by Dimitar Shterionov and Eva Vanmassenhove, offers a fresh perspective corresponding to the interconnectedness between ecological footprints and Neural Machine translation (NMT). The authors start their deliberation, adverting to a transformation from Rule-Based MT to Neural MT, and introduce the concept of graphics processing units (GPUs) which is viable to replace CPUs for gaining more effective and better outcomes. However, the insertion of GPUs consumes more electrical power, causing serious economic as well as ecological implications. To investigate, what the chapter integrates are two practical case studies of power consumption and environmental footprints in terms of carbon emission, related to the application of GPUs, while training and translating with the NMT model. To offer a solution, the authors theorise the concept of *quantization*, a reliable technique to decrease the size and complexity of models, “as a way to reduce power consumption. As quantized models can run on CPUs, they present a power-efficient inference solution without depending on a GPU” (Moniz & Escartín, 2023, p.185). Finally, the last chapter, entitled, *Treating Speech as Personally Identifiable Information and Its Impact in Machine Translation* by Isabel Trancoso, Francisco Teixeira, Catarina Botelho, and Alberto Abad, deals with an amalgamation of speech technologies and Machine Translation. The chapter mentions the recent advancements in the arena of speech technologies which incorporate many complex topics like computational paralinguistic, speaker representation, speech recognition and voice conversion; owing to which, it is not difficult to derive metadata based on personal traits, emotions, gender, age, and accent. This can simply lead to unethical malpractices. How alarming it is! All of these issues generate a

growing awareness for maintaining the security and privacy of speech technologies. Finally, the chapter recommends two major approaches targeting voice privacy: Anonymisation and Encryption.

## **Critical Evaluation**

*Towards Responsible Machine Translation* can essentially be identified as a significant contribution to the discipline of Translation Studies, because of its ability to unpack a vast corpus of theoretical knowledge about Machine Translation and to introduce the emerging theory of ‘responsible use of MT’, an area which has hitherto been overlooked. It is also noteworthy that the book, despite combining a large number of heterogeneous subjects from multiple disciplines, does not fail to produce coherent and transparent arguments in terms of well-structured frameworks. The nucleus of the scholarly collection is embedded in its capacity to produce an ‘organic whole’ through a perfect fusion of theoretical discourses and pragmatic experiences. With the support of twelve engrossing chapters, the book unifies various legal, ethical and societal concerns under one frame and hatches different theories to grapple with the problems, originating from intriguing debates on MT.

The contributors have made rigorous attempts to undertake nuanced analysis of the mechanics of Machine Translation on the basis of both qualitative and quantitative data. However, the detailed and scholarly discussions constantly demand a profound knowledge regarding MT, posing challenges to an ordinary reader who is yet to achieve mastery in this field. While some of the chapters (e.g. chapters: 2,4,5,6,7) are intelligible to both laymen and specialists alike; some are esoteric in nature, claiming serious scholarly attention, for being dotted with intellectual snobbery and fraught with technical jargon, complex mathematical formulae and complicated numerical operations. Therefore, the huge corpus of data often creates hindrance and resistance to ordinary readership. However, it is probably this paradox which works as an impetus behind the success of this publication, making it approachable by both scholars and general readers. Even this quality of the book has been underlined by Way who points out that the book is equally helpful to the “newcomers to the topic who are well versed in ethics



and legal issues from other application areas” and to “longstanding researchers in the discipline...” (Moniz & Escartín, 2023, vi).

One of the notable strengths of the book is that it unfurls new horizons for future research works in the domain of Machine Translation. The book prepares roadmaps and guidelines for budding scholars to explore the field of Machine Translation and contribute to the existing epistemology. The chapters contain an array of novel topics like responsible AI, ethical AI, fair AI and even green AI, which can be selected for further research in the near future. Considering the book a useful resource for research, Helena Moniz and Carla Parra Escartín comments:

Each chapter provides an introduction to what could be a book of its own. Along this journey, we had a constant feeling that much more could be covered. We felt as if we were just covering nanoparticles in an unexplored multiverse and reading the contributions of all the authors, this was only confirmed. (Moniz & Escartín, 2023, p.7)

## References

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