Winters, Marion, Sharon Deane-Cox & Ursula Böser (eds) (2024). *Translation, Interpreting and Technological Change: Innovations in Research, Practice and Training*. **London/New York: Bloomsbury Academic, 224 pp., $ 130 (hardback). ISBN: 9781350212947(hardback).**

Technology penetrates every aspect of our social, cultural and professional lives in the digital era. The speed and breadth of technological change have exerted a significant influence on research, practice and training in the domain of translation and interpreting studies, having brought about a "technological turn" in these disciplines (Jiménez-Crespo 2020). It is thus important for scholars, translators and interpreters to keep abreast with technological development and to be well prepared to deal with its opportunities and challenges. An array of scholars has keenly researched the effects of technology on translation studies, discussing the application of technologies to translation and interpreting practices in various case studies, examining the interplay between human translators and technologies, and looking at the challenges and future prospects for literary translation in the era of artificial intelligence (O'Hagan 2020; Wang & Wang 2023; O'Brien 2024; Rothwell, Way & Youdale 2024). *Translation, Interpreting and Technological Change: Innovations in Research, Practice and Training,* edited by Marion Winters, Sharon Deane-Cox and Ursula Böser, represents a recent effort which addresses the implications of the increasing use of technology advances in translation and interpreting activities and provides innovative solutions to the challenges and threats posed by rapid technological change.

In addition to an introduction by the editors, the book consists of eight chapters, divided into three parts. In the introduction, the editors map out the current context, characterised by the embeddedness of technological revolution in translation research, practice and training. They also highlight their emphasis on the human side in the technological encounter before providing a concise summary of each of the chapters in the book. The first part of the volume, encompassing four chapters, focuses on the shifting boundaries of human and technology interaction. In Chapter 1, Regina Rogl and Hanna Risku draw on situated approaches to translation and cognition, as well as on the concept of 'boundary objects', to study translation project management (TPM). In their study, 'boundary objects' are part of an integrated, connected software infrastructure which include a variety of tools that "gradually integrate more user groups into the translation process" (p. 26). Based on a longitudinal case study in an Austrian translation agency from 2002 to 2014, they shed light on the evolving role of artefacts perceived by project managers in TPM, and conceptualise artefacts' role and shifts in use. The artefacts in their discussion refer to tools that facilitate complex individual problem-solving and provide external cognitive supports for the human memory, such as text processing software, conversion programmes, email flagging systems, calculators and spellcheckers. They argue that boundary objects allowed translation project managers to coordinate colliding viewpoints and facilitated cooperation with

translators, clients and clients' reviewers in the translation process. In Chapter 2, turning their attention to the recent development of the use of computer-assisted interpreting (CAI) tools during interpretation, Bart Defrancq, Helena Snoeck and Claudio Fantinuoli attempt to investigate the effect of automatic speech recognition (ASR) support systems on simultaneous interpreters' cognitive load and on their overall performances by analysing the data from an experiment involving students of simultaneous interpreting organised in 2019. They demonstrate that the availability of a CAI tool in the booth is conducive to the improvement of students' performance. They also introduce a novel method to assess changes in the cognitive load of interpreters, "based on the fundamental frequency of their speech, that is, the lowest frequency of vibration of the vocal folds" (p. 37). By so doing, they argue that the downsides of ASR-based support in the cognitive dimension seem to be balanced by its upsides.

Both Chapter 3 and Chapter 4 are devoted to the application of machine translation to literary translation, which is "hailed as the last bastion of human translation" (Wang 2023, 465). In Chapter 3, Dorothy Kenny and Marion Winters focus on the customisation, personalisation and style in literary machine translation (MT) and adopt a literary studies approach to style for conducting research on machine translation. By carrying out contrastive analyses of machine-translated texts and Hans-Christian Oeser's post-edited versions of his own translations, they reveal that Oeser has imposed his style on the post-edited versions, thereby arguing that "a literary translator's post-editing activity can be regarded as downstream translator-specific personalization of MT output" (p. 73). In Chapter 4, Damien Hansen discusses the debates and controversies surrounding the benefits and shortcomings of computer-assisted literary translation (CALT) and literary machine translation (LMT) by combining theoretical and practical perspectives. Based on the analysis of a self-built translation memory fed with the translations into French of an English fantasy series created for this particular case study, the author argues that translation memories are also effective in literary translation and that a customised system trained on specialised in-domain data might be beneficial for literary translators.

Shifting methods and models in translation resulting from the development of machine translation is the theme of the second part, which consists of two chapters. In Chapter 5, Maarit Koponen and Mary Nurminen set out with an introduction in which they present key concepts and a framework for risk management. Based on the International Standard ISO 31000 (ISO 2018), they raise important risk management considerations and analyse risk factors for content delivery via raw machine translation. They also provide practical guidance to risk analysis, risk evaluation, and risk treatment when using raw machine translation, and demonstrate how risk derived from the use of raw machine translation is managed in the case of patent translation. In Chapter 6, Jeffrey Killman provides a comparative evaluation of translations of terminologies produced by statistical machine translation (SMT) and neural machine translation (NMT) in the context of Spanish-to-English legal translation. By drawing on data from 2013 and 2019 obtained with Google Translate, a tool which applied a statistical

system and a neural system respectively, Killman illustrates that SMT and NMT almost have the same performance in general, while the former shows a slight accuracy advantage with regard to contextually sensitive terms.

The last part, consisting of two chapters, zooms in on shifting translation and interpreting pedagogies. In Chapter 7, Khetam Al Sharow proposes a training course that leverages open-source software as a training platform to cultivate translation students not only as competent users of MT but also creators of their own MT engines. Testing her training course on English-Arabic and Arabic-English translation students in Oman and Jordan, Al Sharow demonstrates that integrating open-source MT into translator training programmes is feasible, and argues that it is particularly needed for students in Arabic-speaking countries. She advocates for integrating technology into translator education programmes and designing training courses in line with the needs of the translation industry. By contrast, in Chapter 8, Lynne Bowker reports on a translation course for non-translation students taught at the University of Ottawa in Canada based on her own experience of designing and delivering the course, and placing a special focus on the module of machine translation literacy. Bowker observes that the course is attractive for non-translation students from a wide range of disciplines, who are able to develop an enhanced knowledge of translation and of machine translation in particular.

By bringing together leading scholars in translation and interpreting studies, the book captures trending topics like MT, TPM, CAI, CALT and LMT, and provides a wealth of case studies and novel methods, which are thought-provoking and inspiring for further exploring the interactions and synergies between technologies, translation and interpreting. It is also noteworthy and commendable that the book gives prominence to the indispensable role of human translators and interpreters in the midst of increasing development of artificial intelligence while fully acknowledging the role of technology in empowering human translators and interpreters. The pro-human and pro-social understanding of the relationship between translation and technology underpinning the book does not only contribute to mitigating the concerns about the devaluation of human translation looming large in the language service industry, but also to developing positive attitudes towards technologies among professional translators and interpreters.

Meanwhile, there are still two aspects in the book worthy of improvement. Firstly, the book displays overwhelming and disproportionate attention to translation compared to interpreting, with seven chapters to translation in contrast with only one chapter to interpreting. Secondly, although the findings in the book are significant, the data for analysis could be more diverse, and the novel methods proposed in the book would benefit from cross-validation with additional established research methodologies. For example, the data related to interpreting performance in Chapter 2 is primarily collected from experiments conducted with interpreting students instead of professional interpreters, which inevitably reduces the validity of findings.

As a whole, this book makes a timely and important contribution to the

investigation of the implications derived from the use of the latest technological developments in translation and interpreting. It can serve as a springboard for exploring new translation and interpreting phenomena and practices, and for designing updated translation and interpreting courses, in tune with the most recent technological advances, especially those in the area of artificial intelligence. Thanks to its extensive discussion of various technologies related to translation and interpreting and to its in-depth analyses of case studies, this book will appeal to translation and interpreting students, scholars and practitioners.

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