WALKER, CALLUM. AN EYE-TRACKING STUDY OF EQUIVALENT EFFECT IN TRANSLATION: THE READER EXPERIENCE OF LITERARY STYLE. LONDON, PALGRAVE MACMILLAN, 2021, 414 PP., ISBN 978-3-030-55769-0

There has long been a hypothesis of *equivalence* in Translation Studies (TS) (Nida, 1964; Newmark, 1988; among many others), meaning an equivalent effect is experienced by the original readers of a given source text (ST) and the readers of its corresponding target text (TT). Notably, however, not a single empirical study has been carried out to prove this hypothesis or concept until Callum Walker published his book entitled *An Eye-Tracking Study of Equivalent Effect in Translation: The Reader Experience of Literary Style* (2021). He took a bold step using an eye-tracker to gauge the equivalent effect (if any) between ST readers reading the marked stylistic texts from extracts of a French ST, and an English TT as well as a neutral TTx meaning there is not marked language variety and it only serves as a quasi-control text.

Driven by the empirical turn (Snell-Hornby, 2006), TS has gradually shifted its traditional product-oriented approach to a process-oriented one, thanks to the advancement of technologies, such as eye-tracking, electroencephalogram, etc. Against this backdrop, the book has made its first foray into a wide range of disciplines including cognitive translation studies (CTS), translation process research (TPR), reception studies, cognitive psychology, as well as stylistics in literary translation and criticism. While most CTS and TPR focus on the process of translation, this book does not focus on the process of how literary texts are translated, «but on the cognitive effects of the product of translation in conjunction with the effects of the original text» (p. 14). Adopting a mixed-methods approach, this book attempts «to supplement the traditional subjective analyses of translation equivalence with more objective, empirical means of analysis» (p. 8).

Chapter 1 commences with some thought-provoking questions for readers about whether styles in literary translation should be dropped, and how to bring a similar reading experience to readers of both original and translated literature containing a body of stylistic foregrounding devices (e.g., alliteration, rhyme, inversion, ellipsis, metaphor, irony) used to draw the attention of readers. These questions introduce the key concepts and main discussion points of this book and provide a springboard for the research objectives to be addressed in later chapters.

Chapter 2 identifies some gaps in TS literature in TPR and reception research strands, which have already been widely applied in audiovisual

translation (AVT) in particular. This chapter then presents a mixed-methods design with both quantitative and qualitative approaches used for the study of stylistic devices, literary translation as well as their effects of different translation versions on the ST and TT readers. An important goal at the core of the research design is to test the hypothesis of equivalence with a focus on the case study, the selected literary work *Zazie dans le métro* (1959) written by Raymond Queneau and its English translation *Zazie in the Metro* (1960) by Barbara Wright.

In Chapter 3, the importance of the interplay between Raymond Queneau's authorial intent and reader response is thoroughly discussed. Put simply, «authors could explore and experiment with their language to predict, fairly reliably, how readers might respond to the effects engendered by their writing» (p. 78), whereas «a reader's response to a text will be constrained by their knowledge and exposure (or lack thereof) to the linguistic forms employed» (p. 81). The core issues to be addressed in the case study are whether the author's intentional use of stylistic devices in the novel can result in «an impression of "strikingness" or "prominence" for the reader» (p. 97), and more importantly, whether their translation can achieve similar cognitive effects and reading experiences for TT readers as for ST readers. Drawing upon and integrating Eco's (1989) notion of openness and closedness into the stylistic features, Walker builds a new model for stylistic openness and closedness. For instance, a more stylistically opened text is likely to result in higher cognitive efforts during readers' reading process «as the stylistic features exhibit greater deviance from the norm» (p. 105). This chapter builds a theoretical understanding and contextualisation on style and stylistics in literature experience, paving way for the empirical testing of equivalence in reader responses to literary translation.

Chapter 4 provides a brief history of eye-tracking research and highlights how eye-tracking is linked to readers' cognition with regard to the study of literature. As clarified in this chapter, the main purpose of using eye-tracking is «to measure the extent or scale of a response» (p. 111) of readers reflected as eye-movement parameters, such as fixation (a period when eyes stare at a point) and saccade (a rapid movement of eyes that shifts between fixations), during the natural reading process. It is also widely accepted that there is a strong connection between visual attention and cognitive effort, particularly in a TS context – in fact, «longer visual attention is indicative of higher levels of cognitive effort, while shorter visual attention is indicative of lower levels of cognitive effort» (p. 129). In the context of reading, for instance, low-frequency and long words can trigger longer fixation durations and therefore increase readers' cognitive efforts. In light of this eye-tracking technology, «existing research on the empirical

psychological dimensions of foregrounding [can be conducted to] understand the true influence of different stylistic devices on the reading experience» (p. 151).

Chapter 5 moves its discussion on stylistic devices in monolingual settings to those in interlingual translation. It sets out to discuss the degree of faithfulness between an original and its translation, not from a lexical, grammatical or pragmatic perspective; rather, a reader-oriented one. Drawing upon relevance theory (Sperber & Wilson, 1986), this research measures whether there are similar or equivalent effects experienced by both source and target readers. In other words, «if the communicative clues to the author's intended poetic effects and cognitive state can be effectively rendered in translation, the affective state experienced by the reader of the TT can be described as cognitively equivalent» (p. 198). The case in point of this research is to investigate the stylistic language varieties identified from not only the so-called «poignant passage» (p. 154) of the novel, but also the pertinent instances of concertina-words that may attract the readers' attention and raise the cognitive efforts required to read both original and translated versions.

Chapter 6 reveals the mixed-methods design principles, data handling and statistical analysis method for the quasi-experiment study. Having classified the hypotheses into three models, namely, «H_0: ST≈TT, H_1: ST>TT, and H_2: ST<TT» (p. 218), in this research the author firstly carried out two pilot studies to adjust the given text with appropriate readability in a preliminary trial which was then fed into a pilot experiment for the hypotheses testing. Following the pilot studies, the author maps out the elements involved in his quasi-experiment, including the stylistic areas of interest (AOIs) as independent variables, the eye-movement data as dependent variables, participant sampling (45 people), length of textual stimuli, equipment (Tobii TX300), a more ecologically valid research environment with unobtrusive setup, the double-line-spaced display for the comfort of participants, and, finally, the detailed experiment protocol for participants to follow. The eye-movement quantitative data was collected from a total of 32 AOIs (24 from a passage and 8 concertina-words such as orthographic manipulation, misspelling, compounding, etc.) while the qualitative data was collected from a 5-point Likert scale about participants' subjective judgement on cognitive effects. Subsequently, the eye-tracking data were scaled accordingly by transformation for comparison with the qualitative data. The results of all the data analyses are covered in the following chapter.

Chapter 7 showcases the results of the eye-tracking experiment. Not only are the demographic information and the results of post-experiment

questions to 45 participants unveiled, but the experiment is objectively evaluated about the technical constraints encountered, font and size of the typeface on the reading experience, as well as some hindsight about calibration and participant conditions. Results show that over half of the AOIs (56%) were correctly predicted, although there was a disparity in accuracy rate between the AOIs from the extracted passage (46%) and the individual stylistic words (88%). This disparity is probably because «the level of stylistic salience in the [...] passage was less pronounced than in the concertina-words» (p. 344). Overall, the achieved cognitive equivalence (47%) was slightly lower than the loss of cognitive equivalence (53%), «given the challenges posed by the translation of language variation» (p. 350). Finally, the eye-tracking data broadly matched the quantified qualitative data, vindicating the mixed-methods design and the potentiality of eye-tracking technology employed in cognitive-equivalence measurement.

Chapter 8 further implies a positive correlation between higher mean gaze duration (meaning higher cognitive efforts) and a wider spread in cognitive effort in a specific AOI. Likewise, as stylistic salience is relative to cognitive efforts, a higher level of stylistic salience can also yield a wider spread of cognitive efforts. Recognising eye-tracking as a powerful and intriguing technology in the natural reading process or other relevant disciplines, this chapter then concludes by sharing the opportunities for future empirical research.

To sum up, this book sets an outstanding example for mixed-methods research using eye-tracking to test equivalence in the reception of literary translation. Methodologically, it is a seminal work that borrows eye-tracking technology to measure the cognitive effects between ST and TT readers, thus providing strong empirical evidence or proof for the concept or hypothesis of equivalence that has long been assumed by translation scholars. However, there are some limitations identified in and insights gained from the study. First, the experiment results are hard to generalise due to the limited sample size – 45 participants with 14 to 17 in each group. A larger sample size (e.g., 30 people per group) is thus called for to reinforce both the validity and reliability of the experiment and help to generalise findings for a larger population. Second are minor technical issues such as unexpected computer crashes having occurred occasionally during the page turn, which could harm the reading process and experience of participants and cause missing data. As confessed by the author, «a larger amount of data would have been obtained were it not for these technical constraints» (p. 300). Last but not least, the methodological choice of not removing outliers concerning small sample sizes (hence relatively small datasets) could affect the reliability of the results, given that analysis of variance, or

ANOVA is sensitive to outliers. Though it is a tough decision, removing outliers «may allow for more conclusive relationships to come to light between the groups and for more finely tuned methods of comparison» (p. 381). Notwithstanding room for improvement, I strongly recommend this book to scholars in TS or relevant areas as it successfully sheds new light on the empirical approach to literary translation and reception studies. It is a timely and state-of-the-art reference for future empirical TS studies or even replication studies, and these could investigate different language pairs (e.g., Chinese-English), more linguistic features (e.g., humour or taboo language), different forms of materials (e.g., comic books or manga), and/or a range of participants (e.g., children and adults), to name but a few avenues of further such research.

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