Lin, YY. & Xu, MJ. (2024). [Review of the book *Computer-assisted simultaneous interpreting: A cognitive-experimental study on terminology, by B.* Prandi]. *Current Trends in Translation Teaching and Learning E, 11*.https://doi.org/10.51287/cttl202476

Book Review

Prandi, B. (2023). *Computer-assisted simultaneous interpreting: A cognitive-experimental study on terminology*. Language Science Press. 978-3-96110-397-3 (digital) 978-3-98554-055-6 (hardcover) https://doi.org/10.5281/zenodo.7143056

Recently, a significant shift in interpreting practices has occurred, with a growing emphasis on computer-assisted interpreting tools, such as automatic speech recognition (ASR), terminology extraction, and corpus-based terminology work, which sheds light on interpreting studies. Bianca Prandi's monograph *Computer-assisted simultaneous interpreting: A cognitive-experimental study on terminology* published by Language Science Press in 2023 delves into the impact on cognitive loads of different forms of digital terminological support for simultaneous interpreting through an experimental study.

The book comprises a general introduction and seven independent chapters. The first two chapters address general background knowledge about terminology work and technologies in interpreting. Chapters 3 and 4 lay the theoretical and methodological foundation, including cognitive loads in simultaneous interpreting (SI) and approaches to measuring cognitive loads. Chapters 5 to 7 illustrate the hypotheses, design, and approaches of the present experiment, and present the results and findings as well as the limitations of the study.

The introduction begins with an overview of studies on computer-assisted interpreting (CAI) tools over the past few years and concludes that no empirically validated methodology for the product- and process-oriented studies with a cognitive focus has yet been developed to explore the phenomenon of technology-supported SI. To address this limitation, the author pioneers a new paradigm to study the impacts on the cognitive processes involved in SI with the use of terminological support tools.

Chapter 1 introduces the topic of terminology and its significant role in interpreting especially in specialized conferences where languages for special purposes (LSP) are used. By listing a wide range of questionnaire surveys, the author suggests that terminology is also a parameter of quality in interpreting, not only from the eyes of interpreters but also from the clients and end-users. This chapter also explores the similarities and differences between interpreting and translation in terminology and examines interpreters' habits for pre-assignment terminology preparation and terminology look-up during the assignment. Due to the limited availability of terminology tools for interpreters, the need for interpreter-specific tools should be heard and motivated.

Chapter 2 introduces the technologies applied to interpreting, which can be divided into three types, namely, technologies mediating interpreting, generating interpreting, and supporting interpreting. Then it further elaborates on CAI tools in detail. Special attention is given to InterpretBank, the CAI tool adopted in the present study. Apart from technical knowledge, this chapter also delves into interpreters' use of CAI tools in their workflow, to see their potential and limitations. The chapter closes with a literature review of the current CAI tools.

Chapter 3 starts with discussions on some basic assumptions about working memory and attention allocation from cognitive and learning psychology. SI with digital support tools is considered a complex cognitive activity of multi-modalities, resource sharing, attention allocation, and several co-occurring tasks. Then two famous cognitive processing models of SI, namely, Gile's Effort Model and Seeber's Cognitive Load Model (CLM) are discussed and compared to see which can better serve as the theoretical framework in the present study. The author opts for Seeber's CLM as it can deal with a wider range of stimuli, including verbal, visual, and spatial ones.

Chapter 4 comprehensively describes the methods adopted in Translation Process Research (TPR) and neighboring disciplines to measure cognitive load. There are five main approaches: theoretical approaches, subjective approaches, performance measures, behavioral approaches, and physiological measures. The author presents both their advantages and potential drawbacks and believes that a combination of methods can maximize the potential of every single method while addressing the limitations.

Chapter 5 shifts the focus to the methodology used in the present study. Firstly, the author proposes hypotheses on the effects of digital terminological support tools on cognitive load in SI, for example, ASR support may facilitate comprehension and production during the interpreting process. Then the author conducts a pilot study to test the validity of the methodology and then adjusts the design of the experiment in light of the results. In the final section of this chapter, detailed methods and procedures of the experiment are presented. Nine interpreting students were trained online in the use of three terminology support tools: a digital glossary in PDF format, a CAI tool with manual look-up, and an integrated ASR tool for terminology. Then each participant should interpret three speeches from English to their native German using a different tool each time. During the process, the participants' gaze data and deliveries were recorded to serve as quantitative data for performance and behavioral measures: terminological accuracy and errors and omissions; glossary queries, ear-voice span, inter-cluster pause duration, time to first fixation, average fixation duration and fixation time. A short post hoc qualitative questionnaire was conducted as a subjective measure to collect the qualitative data.

Chapter 6 presents and discusses the results of the experiment in a categorized and visualized way of analysis. The results have basically supported the research hypotheses. This chapter also illustrates the main limitations of the study, such as the small population of participants and some unavoidable factors in the within-subject design.

In the final chapter, reflections on the methodological, didactic, and practical implications have been presented. The main contribution of this study lies in the development of an experimental methodology for the exploration of the Computer-Assisted Simultaneous Interpreting (CASI) process. In particular, online training of participants proves to be an effective way not only in this experiment but also for future studies, as it has the potential to reach a larger number of participants and, at the same time, allow for a more personalized and flexible process. In the study design, the multi-methods measurements allow observation of both in-process and product performance. Moreover, choosing a within-subject design can easily solve the problem of the limited number of participants. At the end of this chapter, the author also provides new insights into potential avenues for future CAI research.

This monograph is, on the whole, a delightful and rewarding read. Its significance is threefold. First, it provides a useful reference for interpreting researchers. As the first study on in-process CAI tool use from the perspective of cognitive loads, it entails great value for the methodological development of CAI studies. The methodology applied, such as the use of multi-methods to see the impacts of digital terminology tools on the performance and results of SI, online training, and within-subject design, can provide some guidelines and insights for further explorations on technology applied to interpreting. Additionally, this study is well-designed, sophisticated, and meticulous, considering all possible factors. The author provides detailed information about the recruited participants, such as their demographics, language proficiency, interpreting experience, and even their typing speed, vocabulary volume, and knowledge of speech topics, which may all influence the research findings. More significantly, the thorough data analysis with visualization of research results also sets a good example for future studies. The increasing sophistication and capabilities of technology expect a promising future that CAI tools will be applied in the interpreting profession as well as the teaching process. The author also points to some new avenues for future studies, for example, CAI research can also focus on consecutive interpreting in the future and the interaction between interpreters and CAI tools in the booth. Therefore, this book helps motivate interpreting researchers to devote themselves more to this largely under-explored area.

Second, it is a great resource for all interpreting students or anyone interested in interpreting. For instance, Section 3.5.1 offers the definition, formation, development, and application of Gile's Effort Model and different opinions of it from other scholars. Section 2.1 is a good choice to know about the history of technology's integration into interpreting. The book not only covers a variety of fresh topics but also introduces classical and new interpreting theories by giving a comprehensive literature review.

Third, this monograph is logically coherent and pleasantly readable even for beginners. Both the content and layout are closely related to the topics of the research and each chapter is organized in the proper order according to a certain logic. It starts with the background knowledge of terminology work and the application of technologies in interpreting leading to the two main topics of the research. Shifting from the concrete to the abstract, it then elaborates on the theories and methodologies relevant to the study of CASI to motivate and frame the author's experiment design. Finally, with the acquired knowledge mentioned above, the author designs her study, collects and analyzes the data, and draws a conclusion. The organization of this monograph can reflect the academic rigor and meticulousness of the author. What is more, the author is also very considerate by giving a summary of the main idea and purpose at the beginning of every chapter. In this way, readers can easily catch up with the flow of the content.

There are, however, certain limitations and room for improvement. First, in Chapter 6 Results and Discussion, the research findings are interwoven with the description and analysis of data, which may inconvenience readers' intent on navigating the key information. A clear list of concise and assertive research findings, results, or conclusions, attached at the end of this chapter, can be more reader-friendly. Second, it is also a pity that this study only focuses on one-way SI, which is from a foreign language to a mother language, the standard practice internationally. However, as reversed interpreting and translation have become increasingly common and accepted, it is suggested that further investigations be conducted the other way around to see a more comprehensive impact of CAI tools on SI. Finally, it would be of interest to integrate the study with authentic scenarios and a bigger sample of interpreters to explore how the results differ in real life.

In sum, this monograph is recommended to interpreting researchers, educators, and students who want to get some insights, whether for conducting studies on interpreting with CAI tools or for following the latest advances in interpreting studies. As hoped by the author, the present study may prove valuable for further explorations on technology applied to interpreting, a research subject that is bound to become increasingly relevant for the interpreting profession, but currently remains vacant.

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