

MARCELINA PIETRYGA

Imię i nazwisko osoby ubiegającej się o nadanie stopnia

Tytuł rozprawy doktorskiej: THE INFLUENCE OF TRANSLATION DIRECTIONALITY ON THE COGNITIVE EFFORT OF TRAINEE TRANSLATORS

## SUMMARY

This thesis addresses the issue of the influence of directionality on cognitive effort of trainees. Directionality, defined as translating into one's foreign or native language (Whyatt 2019), has been a common translation practice for ages. However, translation process researchers drew particular attention to this topic at the beginning of the 21<sup>st</sup> century. As a result of technological development and the implementation of translation process methods, researchers have been able to analyse translators' self-reports as well as typing and gazing patterns. According to the Golden Rule of Translation (Newmark 1988), translators should work only into their L1. There is also an assumption that the L1-L2 translation direction results in significantly higher cognitive effort (Fonseca 2015; Whyatt 2018, 2019). Nevertheless, this assumption was not fully confirmed by the results of studies on the translation process. Frequently, some of the analysed variables either did not reach the level of statistical significance (e.g., in works by Pavlovič & Jensen 2009 & Hunziker Heeb 2020) or indicated L2-L1 translation direction as more effortful (e.g., in a work by Ferreira et al. 2021).

The aim of my work is two-fold. First of all, I would like to analyse the influence of directionality on cognitive effort in translation. My second objective is to implement new variables to the research on the translation process, directionality and cognitive effort. Variables like EKS and the weighted rating of the NASA-TLX have not been analysed in this context before. To the best of my knowledge, the analysis of the mean pause length was the subject of analysis in only one study. Four methods were used to gather data. These are eye-tracking, in the case of which I utilised the EyeInk PortableDuo eye tracker; keylogging, in the case of which I used the Translog II programme, retrospective verbal reports and questionnaires. These methods allowed me to gather both subjective and objective data. I was also able to conduct qualitative and quantitative data analysis. Moreover, cognitive effort was measured both

globally and locally since collocations served as points of interest. The results indicated that the direction of translation significantly influences the perceived cognitive effort. According to descriptive statistics, higher cognitive effort is evoked by the L1-L2 translation direction. Following the results of statistical tests, two hypotheses were fully corroborated, two hypotheses were partially confirmed, and one hypothesis was rejected. The results of inferential statistics revealed that higher cognitive effort in the L1-L2 translation could be observed based on gazing patterns, typing behaviour, and the length of drafting and revision phases, the number and character of self-reports cognitive effort, and inferior translation accuracy.

This work is structured into seven chapters. Chapters 1-3 discuss the literature review, and Chapters 4-7 embrace the empirical part of the study. Chapter 1 covers the topic of directionality in translation. I discuss various definitions of directionality that can be found in the literature. Next, I move on to the brief history of attitudes towards directionality, including the emergence of the Golden Rule of Translation (Newmark 1988) and the contemporary perception of translating into L1 and L2. In section 1.3, I focus on the issue of languages of low diffusion. It is worth noting that Polish has been classified within this category. The last section of this chapter discusses the phenomenon of language asymmetry based on the Revised Hierarchical Model (Kroll & Steward 1994).

Chapter 2 covers the topic of process methods. Following the chronological perspective, it opens with a discussion of verbal reports, where particular attention is devoted to retrospective verbal reports and think-aloud protocols. Then, I discuss the method of keylogging, the Translog II programme and the phases of the translation process (Jakobsen 2002). The next section discusses eye-tracking. I refer to the eye-mind hypothesis (Just & Carpenter 1980) and define basic eye-tracking variables, fixations, saccades and pupil dilation. Section 2.6 is devoted to neuroimaging techniques, EEG, PET, and fMRI. Finally, the last section briefly discusses questionnaire studies.

Chapter 3 constitutes the last part of the literature review. It discusses the issue of cognitive effort. I present three models of cognitive effort: the Effort Model (Gile 1995), the Cognitive Load Model (Seeber 2011), and the Cognitive Load Theory (Sweller et al. 1998). The next section refers to the indicators of cognitive effort developed by Chen et al. (2012) and later thoroughly analysed by Ehrenberger-Dow et al. (2020). I also elaborate on the current state of research on cognitive effort and directionality. Finally, I discuss a novelty in the research on cognitive effort, default translation (Halverson 2019), which denotes an uninterrupted translation process resulting in a decreased level of cognitive effort.

The empirical part begins with Chapter 4. It opens with a discussion of the aim of this study. I also devote particular attention to the notion of collocations as problem triggers in the context of directionality because there is a significant research gap in this scope. Since I denote this study as an experiment, I also draw a clear distinction between experimental and quasi-experimental research. Next, I present research questions, hypotheses, dependent and independent variables, as well as methods and materials used in the experiment. The last section of Chapter 4 covers the details of the pilot study and the main study research design.

Chapter 5 presents the analysis of the results. It is structured into six sections. Five of them correspond to the adopted hypotheses, and the last one discusses the results of linear regression analysis. This chapter includes descriptive statistics results and histograms. I also discuss the results obtained through statistical tests, like the pair test and its non-parametric equivalent, the Wilcoxon test.

In Chapter 6, devoted to a discussion of the results, I make an attempt to provide answers to research questions. It is divided into four sections that correspond to four research questions. I present the obtained results and interpret them based on the theoretical assumptions related to the phenomena of cognitive effort and directionality. Chapter 7 discusses the concluding remarks as well as limitations and potential avenues for further research.

This thesis also includes a list of references with 247 works published between 1980 and 2024, summaries in Polish and English, as well as Appendices including materials used in the experiment, the detailed results and a summary of the statistical tests results.

Słowa kluczowe: directionality, cognitive effort, translation trainees, translation process, eye-tracking, keylogging, L1-L2, L2-L1

Marcelina Pietryga  
Podpis