Visual attention, cognitive load, stress, and performance in SIMTXT: A quasi-experimental study

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Simultaneous Interpreting (SI) is real-time oral translation of a speaker's oral discourse by an interpreter who usually works from a sound-proof cabin in a conference room. It requires complex information processing, since the interpreter has to carry out several tasks in parallel: listening, comprehending, producing and monitoring speech. When interpreters are provided with a transcript of the oral speech, as is the case in "SI with text" or "SIMTXT", the activity involves multimodal cognitive processing, since the interpreter receives multimodal information: simultaneously auditory and visual. So far, results from research on the effect of SIMTXT on cognitive load and performance (e.g., Seeber 2017) remain inconclusive about a potential facilitating effect or potential complication of cognitive processing. In addition, methodological design often lacks ecological validity due to artificial experimental conditions, less accurate tools, subjective measurements or focused exclusively on a single input variable such as numbers (e.g., Desmet et al. 2018). The present paper is part of a study exploring the effect of multimodal input on cognitive processing in SIMTXT in experiments involving 12 young professional simultaneous interpreters, who carried carry out one SI and one SIMTXT task in near to real-life conditions, that is, in an interpreting booth. By manipulating a combination of input variables related to content, form, and delivery of the oral speeches (i.e., speech rate and number of problem triggers) in both experimental conditions, the potential facilitating effect of text use in SI was investigated. The interpreters were provided with mobile eye-tracking glasses and electrodermal wristbands to collect quantitative data, which were analysed with a view of distribution of visual attention, cognitive load, and stress level. Cognitive load and stress level were also measured via self report (NASA-TLX form, STAIT-5 and STAIS-5). These measures were combined with qualitative data analysis of the recordings of the interpreting product as well as retrospective interviews. Data analysis is ongoing. In our presentation, we will focus on visual attention, cognitive load and stress related to the two conditions (SI and SIMTXT) and the performance quality in both conditions. The results provide insights into the effect of multimodality on cognitive processing, that will also be highly useful for interpreting practice and training.

Keywords: < simultaneous interpreting, SIMTXT, eye tracking, cognitive load, multimodality >

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