

Abstract – Eye-to-IT Conference – Sharon O’Brien

Can a task hierarchy for processing Translation Memory matches be derived from eye tracking data?

Professional translators working with Translation Memory tools are often paid according to the number and type of matches there are between the new document for translation and the content of the translation memory database. The industry-defined payment rates are predicated on the assumption that “Exact Matches” require little or no effort from the translator and “Fuzzy Matches” that have a “high” similarity (e.g. between 75-99% similarity) take less effort than Fuzzy Matches of a “lower” similarity (e.g. below 74%). While the translation industry generally accepts this assumption, little research has been done to test its validity. Eye tracking methodologies present one methodology through which this assumption can be tested. In this paper we will present the results from an experiment in which five participants translated a technical text from German into English using a translation memory tool. The TM was seeded with Fuzzy Matches across different categories of match value, ranging from 52% to 99% similarity. The participants’ eye movements and pupil dilations were recorded using the Tobii 1750 eye tracker. Cognitive effort was measured using processing speed (words per second) and pupil dilation. The results suggest that when processing speed is used to measure cognitive effort, there appears to be a linear relationship between effort and fuzzy match value. However, when cognitive effort is measured via pupil dilations, no linear relationship is detected. This leads us to tentatively suggest that the results for pupil dilations demonstrate a “capacity constrained response”. We also propose that an eye tracking analysis based on a task/sub-task hierarchy might provide us with more insights in order to explain this lack of linear relationship and we attempt to derive such a task hierarchy for processing Fuzzy Matches, based on the eye tracking evidence.