

Quality of line segmentation in subtitling and implications for film processing: A behavioural study

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Subtitling, a well-established form of constrained audiovisual translation, has now been studied for some considerable time. Researchers have taken into account a variety of aspects pertaining both to translational and structural criteria. As regards the former, various ways to find the closest formal and semantic target language correspondents whilst reducing the source text and converting it from spoken to written have been extensively studied and finalized (Chiaro et al., 2008; Díaz-Cintas, 2008; Gottlieb, 1992, 1994, 1998). Currently, well-established translational strategies exist and research is focusing on structural standards (e.g. punctuation, font size and type, length and spacing of each character, display time). While considerable importance is attached to most of these standards, line segmentation has not received sufficient attention and has not yet been examined empirically. Literature on this topic is limited though increasing (Díaz Cintas, 2001, 2003; d'Ydewalle et al., 1985; Ivarsson & Carroll, 1998; Karamitroglou, 1998; Perego, 2008; Rundle, 2000), with some scholars encouraging, mainly on an intuitive or aesthetic basis, a coherent line parsing which does not disrupt constituency. However, there is no clear empirical evidence as to the consequences of various policies of line segmentation. Thus no empirical justification for these policies exists.

Psycholinguistic literature on reading generally supports the idea that, since normal reading is a sequential and holistic process which occurs in chunks (Coltheart, 1987, Rayner & Pollatsek, 1987, 1989; d'Ydewalle & Van Rensbergen, 1989; Rayner & Morris, 1990), subtitle lines should end at natural linguistic breaks, ideally at clause or phrase boundaries. According to this view, when the natural reading flow is disrupted by inappropriate line segmentation, the reader's concentration may be lost and the comprehension of the film may be negatively affected. Knowing whether the presentation to film viewers of linguistically coherent line segmentation can improve readability and comprehension is therefore crucial, given that, while watching a film, reading ceases to be a routine task and requires additional attentional resources (Grillo & Kawin, 1981).

In a controlled experiment, we tested the influence of line segmentation quality on various cognitive measures: forty-one participants viewed a film portion in an unknown language with well-segmented vs. ill-segmented subtitles in their mother tongue. The quality of line segmentation was manipulated within-subjects and the position of the well-segmented and ill-segmented film sub-portions was counterbalanced within the group. The eye-movements of a subset of 23 participants were recorded using a Tobii 1750 eye-tracker during the viewing session. Right after each viewing session, though, all participants were tested for gist comprehension, word recognition, and scene recognition.

The results were surprising: well-segmented subtitles did not yield any significant improvement in comprehension or recognition, and results pointing in the opposite direction were instead found for some indices. A second interesting result was the very high scene recognition accuracy in spite of the fact that reading subtitles while encoding visual information is usually considered as a particularly demanding type of dual task. No trade-off between comprehension indices and scene recognition was found and, for some indices, a positive correlation was even observed. Eye-movement data were used to provide a characterization of the cognitive strategies used by participants to coordinate text comprehension and visual processing and to support a tentative interpretation of the experimental findings grounded on attentional theory. This interpretation will be discussed during the panel, together with the implications of the results for further research and applied contexts.

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