

Syntax, stress and cognitive load, or on syntactic processing in simultaneous interpreting

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Abstract

This corpus-based study examines the effect of syntactic complexity in the source language on simultaneous interpreters' cognitive load and stress. Previous studies show contrasting results as regards the source text syntax and cognitive load in interpreting: eye-tracking studies point to increased cognitive load due to increasing syntactic complexity (Seeber & Kerzel 2011, Ma & Li 2021, and Shreve et al. 2011), while authentic corpus-based data show no such relation (Plevoets and Defrancq 2020). No research exists on the association between syntactic complexity in interpreting and the interpreters' stress. We set out to fill this knowledge gap by operationalizing cognitive load as disfluencies (mean duration and mean number of filled and silent pauses) and by operationalizing stress as fundamental frequency (or the interpreter's pitch), which is considered a significant speech parameter indicating stress in both non-interpreting and interpreting tasks (Giddens et al. 2013, Godin & Hansen 2008, and Korpal 2017). Syntactic complexity was calculated as dependency distance, i.e. the number of words between syntactically dependent elements. We used PINC, the Polish Interpreting Corpus (Chmiel et al. 2022) as our dataset. PINC includes Polish-English and English-Polish interpretations by professional interpreters in the European Parliament. We found that more complex source text syntax increases the interpreters' stress and cognitive load. Complex syntax produced by interpreters' themselves was also found to increase their stress but did not lead to higher cognitive load manifested through longer or more frequent pausing. Our pattern of results also shows that interpreters simplify source text syntax, especially in read out texts. We found that impromptu speeches have longer dependency distance than read out speeches and that pauses in interpreting depend on such factors as the source text delivery rate, interpreting direction and speaker's pausing behaviour. These results contribute to our understanding of syntactic processing and pausing behaviour in simultaneous interpreting, providing empirical evidence for simplification in interpreting and showing that interpreters' own syntactic production does not lead to increased cognitive load.

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