Interpreting under stress:
The differential effects of emotional and cognitive load

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Stress is one of the most important predictors of interpreter performance. Previous reports suggest that task-related stress typically results from higher emotional load (emotional valence of speech, threatening situations, role confusion, hyper-empathy, etc.) (see Korpal, 2016; Gieshoff et al., 2021 for reviews) and/or higher cognitive load as a consequence of task difficulty (e.g., linguistic complexity, speech rate, strong accent, etc.). Although both emotional and cognitive load leave their traces in several biomarkers during interpreting (see Li et al., 2022), it is generally difficult to separate the physiological effects of these constructs and disentangle their individual effects on performance. For example, a recent study (Kumcu, 2023) showed that while voice intensity generally reflects changes in cognitive load (higher difficulty leads to higher voice intensity), fundamental frequency (F0) and pause ratio are more sensitive to changes in source speech valence (lower valence leads to lower F0 and longer pauses) in simultaneous interpreting. The current study aims to dissociate the effects of emotional and cognitive load using mental health interpreting as a case study. 20 student interpreters were asked to consecutively interpret short first-person narratives (approximately 4 minutes each) from L1 (Turkish) to L2 (English) without taking notes under four emotionality and difficulty scenarios manipulated with a 2x2 factorial design (i.e., low emotionality – low difficulty, low emotionality – high difficulty, high emotionality – low difficulty, and high emotionality – high difficulty) and presented in counterbalanced order. Participants' emotional and cognitive load was assessed at baseline and after each condition using two objective measures: galvanic skin response (GSR) (i.e., peak number, peak amplitude, and cumulative GSR) and auditory output of the interpreter's speech (i.e., F0, intensity, and pause ratio). Participants were also asked to report their affect and stress using three self-report measures: The Positive and Negative Affect Scale (PANAS) (Watson et al., 1988), the State-Trait Anxiety Inventory (STAI) (Spielberger et al., 1983), and the NASA Task Load Index (NASA-TLX) (Hart & Staveland, 1988). Interpretation accuracy was also measured and incorporated into the relationship between emotional/cognitive load and physiological/subjective responses. Results showed that arousal during interpreting, as measured by skin response, was driven by cognitive rather than emotional load. This trend was particularly pronounced towards the end of the interpreting phase. The results are expected to shed light on the sources of stress in interpreting and their impact on performance.

Keywords: emotional load, cognitive load, GSR, prosodic markers, interpreting

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