

Self-monitoring of metrical stress during speech production estimated from event related potentials

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Earlier work on verbal self-monitoring showed that linguistic information at the beginning of words can be monitored faster than information at the end of words. These data have been interpreted as reflecting the time course of word form encoding in speech production. The current study employed an implicit picture-naming task in Dutch using event-related brain potentials (ERPs) to investigate the question whether or not the previously found behavioral effect has a psycho-physiological counterpart. Participants saw a series of pictures and made a go/no-go decision about each picture name's stress position (whether the depicted item had initial or final stress; e.g., "lepel" [initial stress] vs. "libel" [final stress]). Reaction times (button-press latencies) replicated earlier results, i.e. participants were 86 ms faster to respond when the stress was on the first syllable (885 ms) than when it was on the second syllable (971 ms; $t(13) = 4.98$, $p < .001$). Furthermore, the N200 (related to response inhibition) peaked earlier in the initial stress condition (428 ms) than in the final stress condition (502 ms). This 74 ms difference reached also significance ($F(1,13) = 27.99$, $p < .001$) and can be interpreted as evidence for a neurophysiological correlate of the metrical stress monitoring. The results will be discussed in relation to theories of verbal monitoring and speech production.

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Poster session: Cognition & Behavioral Neuroscience (Friday 4 June)