



Mood Induction Differently Affects Early Neural Correlates of Evaluative Word Processing in L1 and L2

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We investigate how mood inductions impact the neural processing of emotional adjectives in one's first language (L1) and a formally acquired second language (L2). Twenty-three student participants took part in an EEG experiment with two separate sessions. Happy or sad mood inductions were followed by series of individually presented positive, negative, or neutral adjectives in L1 (German) or L2 (English) and evaluative decisions had to be performed. Visual event-related potentials elicited during word processing were analyzed during N1 (125–200 ms), Early Posterior Negativities (EPN, 200–300 ms and 300–400 ms), N400 (350–450 ms), and the Late Positive Potential (LPP, 500–700 ms). Mood induction differentially impacted word processing already on the N1, with stronger left lateralization following happy than sad mood induction in L1, but not in L2. Moreover, regardless of language, early valence modulation was found following happy but not sad mood induction. Over occipital areas, happy mood elicited larger amplitudes of the mood-congruent positive words, whereas over temporal areas mood-incongruent negative words had higher amplitudes. In the EPN-windows, effects of mood and valence largely persisted, albeit with no difference between L1 and L2. N400 amplitude was larger for L2 than for L1. On the LPP, mood-incongruent adjectives elicited larger amplitudes than mood-congruent ones. Results reveal a remarkably early valence-general effect of mood induction on cortical processing, in line with previous reports of N1 as a first marker of contextual integration. Interestingly, this effect differed between L1 and L2. Moreover, mood-congruent effects were found in perceptual processing and mood-incongruent ERP amplification in higher-order evaluative stages.

Keywords: mood, emotion, language, bilingualism, word processing, context

INTRODUCTION

Bilinguals use two language systems to communicate and comprehend emotional meanings. Previous research has pointed to both differences and similarities in sensitivity to emotional content in bilinguals when they operate in their L1 and L2 (e.g., Pavlenko, 2012; Caldwell-Harris, 2015). It has indicated that linguistic systems acquired at different stages in life and with different proficiency, may vary also in the degree and depth of affective integration. Importantly, words people use to share meanings come coupled with contextual embeddings. Situational,