Semantic access is immune to mood changes in the non-native language

Marcin Naranowicz (Adam Mickiewicz University, Poznań), Katarzyna Jankowiak (Adam Mickiewicz University, Poznań), Katarzyna Bromberek-Dyzman (Adam Mickiewicz University, Poznań), and Guillaume Thierry (Bangor University)
marcin.naranowicz@amu.edu.pl

Affect permeates our daily communicative interactions (Zajonc, 1984). One of its key elements – mood (i.e., an unobtrusive, slowly-changing, and low-intensity affective background state; Forgas, 2017) has been observed to modulate language processing, with a positive mood typically being associated with its facilitation and a negative mood – inhibition (e.g., Chwilla et al., 2011; Pinheiro et al., 2013; Ogawa & Nittono, 2019). Interestingly, though mood research has recently been extended to the bilingual context (Kissler & Bromberek-Dyzman, 2021), the role of positive and negative moods on language comprehension in a broader communicative context in bilingual speakers has thus far received little scholarly attention. The main objective of the present event-related potential (ERP) study was to determine whether and how lab-induced positive and negative moods modulate semantic processing in Polish (L1) –English (L2) bilingual speakers.

Eighteen Polish–English proficient unbalanced late bilinguals (all females) performed a semantic decision task to 180 emotionally-neutral sentences in each of their languages. Test sentences included a critical word in mid-sentence position, which was either semantically congruent or incongruent with the context (e.g., *These houses were transformed into country mansions / *lobsters permanently*). A positive or negative mood was evoked during each of two separate experimental sessions using 14 affectively evocative, animated clips. Participants first watched three film clips, and then additional ones were presented every 20 sentences to sustain the intended mood. EEG was recorded throughout to monitor participants' brain activity while reading sentences presented word-by-word in-between animated clips.

Between 300–500 ms after critical word onset, we found reduced N400 amplitudes to to semantic violations in the positive relative to the negative mood condition, with no betweenmood differences for meaningful controls. In L2, however, we observed an N400 meaningfulness effect of similar amplitude for the two moods (see Figure 1). These results suggest that, in the L1 context, semantic access is differently modulated by positive and negative moods. This is consistent with previous studies on semantic processing in monolinguals (e.g., Chwilla et al., 2011; Pinheiro et al., 2013; Ogawa & Nittono, 2019), pointing to facilitated activation spread in semantic memory, requiring fewer cognitive resources, in a positive compared to a negative mood. The present study offers novel evidence in an L2 context, showing that semantic access to L2 words may be more immune to mood fluctuations, possibly due to lesser affective sensitivity and/or more effective emotion regulation strategies in L2 than L1 (Morawetz et al., 2017).

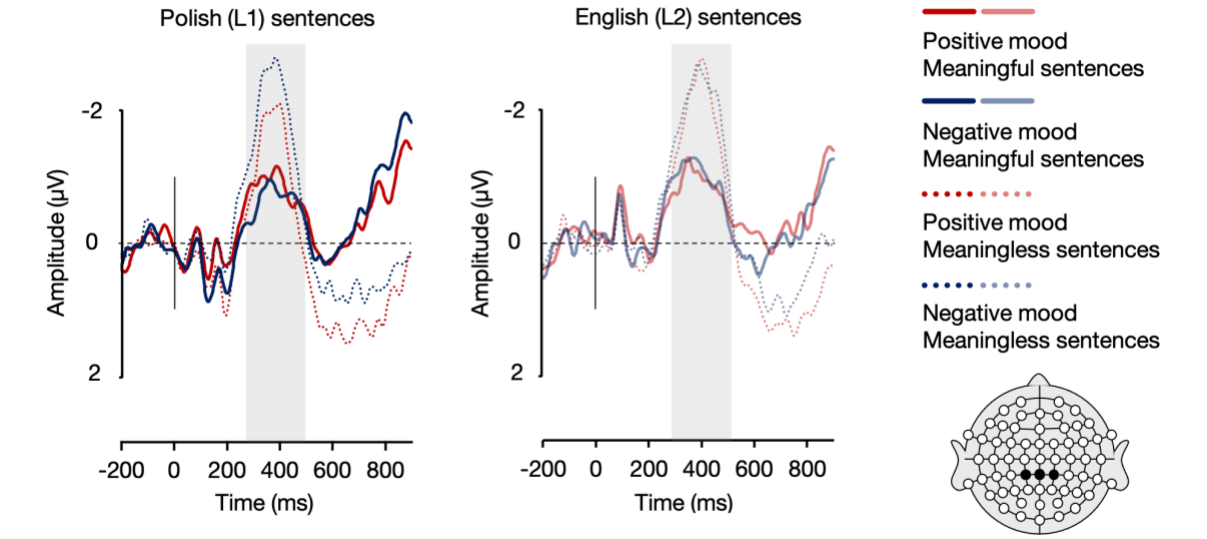

Figure 1. Grand averages for Polish (L1) and English (L2) meaningful and meaningless sentences in the positive and negative mood conditions over centro-parietal (CP1, CPz, CP2) electrodes.

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