

Irony state of mind in bilinguals: Electrophysiological evidence

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Abstract

Bilinguals use irony to communicate implicit criticism or praise in their native (L1) and second (L2) language. To understand irony, bilinguals must identify the speaker's intention. Interpreting intentions (Theory of Mind), a cornerstone of irony comprehension, has been shown to be enhanced in bilinguals (Schroeder 2018). Surprisingly, however, irony processing research has largely focused on monolinguals (Gibbs 1986; Giora et al. 1998), with a few recent exceptions (Bromberek-Dyzman and Rataj 2016; Bromberek-Dyzman et al. 2021). Irony comprehension in L2 tends to be more difficult (slower) relative to L1 (Bromberek-Dyzman and Rataj 2016; Ellis et al. 2021). Monolingual studies show that ironic criticism – a literally-positive comment conveying an ironically-negative meaning (“What a beautiful day!” uttered on a rainy, gloomy day) is understood faster and more easily than ironic praise – a literally-negative comment with an ironically-positive meaning (“What an awful day!” uttered on a bright, sunny day) (Caffarra et al. 2019). For want of conclusive results, which may be modulated by method-related factors we explored neurocognitive mechanisms underpinning irony processing in highly proficient late Polish-English bilinguals using EEG. We aimed to verify whether (i) irony processing is more effortful than literal meaning in both languages, (ii) whether ironic criticism is processed more easily than ironic praise, and (iii) whether the latter effect could be further modulated by language of operation. We recorded brain electrical activity of 45 bilingual participants while they were reading literal (positive and negative) and ironic (critical and praising) scenarios in Polish and English. Participants were Polish native speakers, highly proficient in L2 English. Data collection is complete and data analysis is currently underway. We focus on two Event-Related Potentials: the N400 (index of lexico-semantic processing; van Berkum et al. 1999; Kutas and Federmeier 2011) and the LPP (index of meaning reanalysis; Spotorno et al. 2013). We expect to find increased N400 amplitudes for ironic compared to literal meaning (Regel et al. 2010), and for irony in L1 compared to L2 (Jankowiak et al. 2017), and for ironic praise compared to ironic criticism (Caffarra et al. 2019). We also hypothesize increased LPP amplitudes in response to ironic compared to literal meaning (Caffarra et al. 2019), to L2 compared to L1 (Jankowiak et al. 2017), and to critical compared to praising irony (Caillies et al. 2019). Analyses related to the possible difference in the processing of ironic praise and criticism in L1 and L2 will be considered exploratory.

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