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Corrigendum

Corrigendum to “Evidence of the voice-related cortical potential: An electroencephalographic study” [NeuroImage 41 (2008) 1313–1323]

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The abstract of the above-referenced article contains errors. The corrected abstract appears here.

The Bereitschaftspotential (BP) is a slow negative-going cortical potential associated with preparation for volitional movement. Studies since the 1960s have provided evidence for a BP preceding speech-related volitional motor acts. However, the BP associated specifically with phonation has not to date been systematically investigated. The current investigation utilizes a novel experimental design to address methodological confounds typically found in studies of movement-related cortical potentials, to demonstrate the existence and localization of generators for the voice-related cortical potential (VRCP). Using high-density EEG, we recorded scalp potentials in preparation for voicing and controlled exhalation in a stimulus-induced voluntary movement task. Results showed a slow, increasingly negative cortical

potential in the time window of a standard BP prior to the mean onset of phonation. This VRCP peaked at a greater amplitude and shorter latency than the BP associated with exhalation alone. Region analysis exhibited a steeper slope of the late VRCP in the primary motor area (M1) than that in the Supplementary Motor Area (SMA), reflecting the complexity of motor movements and control necessary for voicing. Additionally, the late VRCP offset in M1 (–400 ms) was later than that in the SMA (–600 ms), possibly reflecting later engagement of primary motor areas following motor preparation in premotor areas. Further examination of the spatiotemporal change of the VRCP yielded source models indicating involvement of the cortical regions responsible for the initiation and continuation of phonation. Sources were localized to the middle frontal gyri and M1, bilaterally. Additional sources were localized to bilateral cerebellum and occipital lobe.

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