

Abstract

The properties of the Mismatch Negativity (MMN) have been under extensive investigation since it was first reported (Nataanen, Gaillard, & Mantysalo, 1978). This preattentive change detection mechanism is sensitive to various attributes of a stimulus. Nevertheless, whether the MMN is also sensitive to temporal changes in stimuli remains worthy to be verified. In the present study, participants passively listened to tones with systematic variations in the interstimulus intervals (ISI) while they watched silent, subtitled movies. A deviant occurred when an expected tone was presented too early (Experiment 1) or omitted (Experiment 2). In Experiment 1, although a small negativity at the expected time window was elicited by the deviant waveform, it was not statistically significant and lacked other characteristics of a MMN. In Experiment 2, a MMN-like negativity was obtained. We suggest that the temporal integration window of the preattentive timing system and the distinctiveness of the deviant stimulus influence the stability of the MMN pattern.