

**Kachynska T.V., Kuznietsov I.P., Kotsan Ih.Ya., Kozachuk N.O.,
Abramchuk O.M., Dmytrotsa O.R.**

Lessya Ukrainka Eastern European National University

**TEMPORAL FEATURES OF ERP PARAMETERS AND
SENSORIMOTOR REACTION DURING PERCEPTION OF "WHAT"
AND "WHERE" STIMULI IN LEFT- AND RIGHT-HANDERS**

kachynska_t@ukr.net

The temporal features of ERP components and sensorimotor reaction during the perception of "What" and "Where" stimuli in left- and right-handers were studied. We suppose, that asymmetry type affects the time characteristics of ERP components and sensorimotor reaction. 14 left-handers and 15 right-handers took part in our research. ERPs were recorded according to standard P300 paradigm. Time of sensorimotor reaction on target stimuli was recorded. During the first test with "What" stimuli, subjects had to determine whether the specified figure was marked out (painted over) in presented images, irrespective to the figure position. During the second test with "Where" stimuli subjects were instructed to react when marked figure was located in right upper corner of the image. It was shown, that left-handers, in comparison with right-handers, had significantly shorter sensorimotor reaction time in both tests. During the first test left-handers had shorter latencies of ERP components on all perception stages. Moreover, latencies of P3 and N3 components in frontal, central, parietal and occipital areas of both hemispheres in left-handers were statistically significantly shorter, in comparison with right-handers. During the second test the similar dynamic was observed, but statistical differences wasn't detected. Thus, the temporal ERP characteristics are sensitive to human individual features, such as manual asymmetry.

Keywords: right-handers, left-handers, manual asymmetry, ERP components, sensorimotor reaction, latencies.