

Brain activity when interacting with an animate or artificial thing: An Event-Related Potentials study

Haruaki Fukuda
the University of Tokyo

Kazuhiko Ueda
the University of Tokyo

Abstract: An ability to distinguish animate things from inanimate things is essential for our social cognition. In this study, we investigated the differences in brain activity between when interacting with an animate thing and when interacting with an artificial thing. We recorded EventRelated Potentials under two conditions; eight participants reached an animate thing (turtle) (animacy condition) and reached an artificial thing (robot) (non-animacy condition). We found two differences in ERP patterns between the two conditions: (1) A positive component was elicited (from the beginning of reaching action to 200msec.) only in animacy condition; (2) Higher ERPs amplitudes (200msec. - 400msec.) were elicited in animacy condition than in non-animacy condition. Considering previous neuroimaging studies and the temporal property in our result, we speculated that the first effect was associated with the participants animacy attribution and the second effect was associated with their prediction of the movements of animate things.