

P90: Electroencephalographic changes in moral decisions

Catarina Castro¹, Diana Tavares^{1,2} and António Jácomo²

¹School of Allied Health Technologies, Polytechnic Institute of Porto, Portugal

²Bioethics Research Centre (GIB) Institute of Bioethics of Catholic University, Portugal

Presenting author: catarina2castro@hotmail.com

Introduction: Human morality has been addressed by the neurosciences and neuroethics. However we remain far from realizing how brain works in moral decisions. The decision taken in moral dilemmas can be deontological or utilitarian. In the first one an action is right or wrong for itself, disregarding the consequences of your decision. On the other hand, in utilitarian decisions consequences are the only thing that matters, seeking the best interest to the greatest number of people.

Objectives: This study aims to describe neuronal activity during moral decision-making, thereby contributing both to the location of brain areas involved in this process and for the characterization of neurophysiological changes that take place when moral decisions are made.

Materials and Methods: Eighteen subjects (14 women and 4 men) were presented with 16 stories with moral content that required them to choose between two conflicting personal desires (Achával, 2013) (deontological or utilitarian decision). Brain's electrical activity (frontal alfa activity) was evaluated using quantitative EEG at rest and during moral decisions. There were 3 types of dilemmas: related to common day conflicts, involving indirect injuries and involving direct injuries. Wilcoxon statistical tests were used to assess differences between brain's activity at rest and during decisions.

Results and Discussion: In moral conflicts of the common day, all dilemmas tested showed statistically significant in the right inferior frontal lobe activity (p -value=0.012 and 0.009).

Only 25% of the moral dilemmas that involve indirect injuries showed an increase of brain activity in the inferior frontal lobes (p = 0.017 and 0.011).

In the moral conflicts involving direct injuries, all dilemmas produce an increase of brain's activity in the inferior frontal lobes (one tailed sig.= 0.015 and 0.002 – left side – one tailed sig.= 0.016 and 0.025 – right side).

Conclusion: This study showed that the inferior frontal lobe suffers an increase in the frontal alfa activity when the brain is processing moral dilemmas.

References:

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