Faculty of Philosophy

James Martin Advanced Research Seminar Programme (TT09)

Venue: James Martin 21st Century School, Seminar Room 1, Old Indian Institute, Broad Street

Date: 5th Week ~ Wednesday 27 May, 3.00 – 5.00 pm

Speaker: Dr Matthew Rushworth (Department of Experimental Psychology and Oxford University, University of Oxford)

Title: "The medial frontal cortex: a brain region for detecting conflict?"

Abstract:

There has been considerable interest in the possibility that a part of the brain, the medial frontal cortex, becomes active when we are uncertain about what action to make next. It has been argued that this occurs when two or more actions are strong candidates for being chosen and the actions are said to be in "conflict" with one another. The idea has gained such influence that now researchers who find activity in the medial frontal cortex assume that it has arisen because conflict must have occurred. Because activity in medial frontal brain areas is found when people are confronted with certain types of ethical dilemma it has been argued that this means they are in a state of conflict. The security of this inference depends on just how close is the association between medial frontal activity and conflict monitoring. Recent experiments suggest that the medial frontal cortex may also be important for detecting the consequences of the choices we make and therefore in deciding whether or not we should make the same choice again. Medial frontal activity is actually correlated with how much information about what to do next can be derived from witnessing the outcome of an action.

Intriguingly a specific medial frontal sub-region turns out to be associated with the information to be derived not from witnessing the outcome of our own actions but from observing the other people with whom we interact. It is therefore possible that medial frontal activity recorded during the presentation of ethical dilemmas may simply represent the weight or importance we assign to other individuals.