

The role of the mirror neuron system in social cognition.

The **mirror neuron system** consists of brain cells called mirror neurons, which fire in response to personal action and in response to the action of others. It is suggested that mirror neurons are involved in the social cognition processes of empathy, understanding intention, perspective taking and theory of mind.

Rizzolatti et al (1996) were studying electrical activity in a monkey's motor cortex, when a researcher reached to get his lunch in view of the monkey, and this action activated the monkey's cortex. They went on to study macaque monkeys and noticed that when wired with electrodes, they showed the same firing patterns when they watched other monkeys pick up food, as when they did so themselves.

Rizzolatti et al (1996) coined the term 'mirror neurons'.



Mirror neurons fire when a person observes the same action performed by another, the neuron mirrors the behaviour of the other. Dysfunction in the mirror neuron system has been implicated in disorders such as autism spectrum disorder.

However, most of the research into mirror neurons studied the brains of animals which cannot be generalised to humans.

Rizzolatti & Craighero (2004) did however, look for mirror neurons in humans, despite not being possible to experimentally test single neurons in humans, they used brain scans to show a network of mirror neurons in the frontal and parietal regions. In addition, Lacoboni et al (1999) used fMRI scans to show support for the mirror neuron system in the frontal and parietal lobes, as these areas were most active when a person performs an action, and also when they see another person performing an action.

