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Neural correlates of action perception

# Neural correlates of action perception



Judith Suttrup

Judith Suttrup

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NEURAL CORRELATES OF ACTION PERCEPTION

ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad van doctor

aan de Universiteit van Amsterdam

op gezag van de Rector Magnificus

prof. dr. ir. K.I.J. Maex

ten overstaan van een door het College voor Promoties ingestelde commissie,

in het openbaar te verdedigen in de Agnietenkapel

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door Judith Suttrup

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## List of Abbreviations

<b>AC-PC</b> .....	Anterior commissure - posterior commissure
<b>ActionEXE</b> .....	Action execution (name of experimental condition)
<b>ActionOBS</b> .....	Action observation (name of experimental condition)
<b>ADOS</b> .....	Autism diagnostic observation schedule
<b>ANCOVA</b> .....	Analysis of covariance
<b>ANOVA</b> .....	Analysis of variance
<b>AO</b> .....	Action observation
<b>AOI</b> .....	Area of interest
<b>AON</b> .....	Action observation network
<b>ASD</b> .....	Autism spectrum disorder
<b>AQ</b> .....	Autism spectrum quotient
<b>aVI</b> .....	Anterior lobule VI
<b>B</b> .....	Bilateral
<b>BA</b> .....	Brodmann area
<b>BF<sub>01</sub></b> .....	Bayes factor given the null hypothesis
<b>BioMo</b> .....	Biological motion (name of experimental condition)
<b>BOLD</b> .....	Blood oxygenation level dependent
<b>ConstMo</b> .....	Constant motion (name of experimental condition)
<b>CtrlEXE</b> .....	Control execution (name of experimental condition)
<b>CtrlOBS</b> .....	Control observation (name of experimental condition)
<b>CO</b> .....	Control observation (name of experimental condition)
<b>DSM-V</b> .....	Diagnostic and statistical manual of mental disorders - 5
<b>EBA</b> .....	Extrastriate body area

---

<b>ERC</b> .....	European Research Council
<b>FG</b> .....	Fusiform gyrus
<b>fMRI</b> .....	Functional magnetic resonance imaging
<b>FDR</b> .....	False discovery rate
<b>FWE</b> .....	Family-wise error
<b>FWHM</b> .....	Full width half maximum (filter setting)
<b>GLM</b> .....	General linear model
<b>H</b> .....	Hesitation (experimental condition)
<b>H<sub>0</sub></b> .....	Null hypothesis
<b>H<sub>1</sub></b> .....	Alternative hypothesis
<b>HFA</b> .....	High-functioning autism
<b>hMNS</b> .....	Human mirror neuron system
<b>HO</b> .....	Hesitation-Obstacle (experimental condition)
<b>HRF</b> .....	Hemodynamic response function
<b>Hz</b> .....	Hertz
<b>ID</b> .....	Identification
<b>Ins</b> .....	Insula
<b>IPL</b> .....	Inferior parietal lobe
<b>IQ</b> .....	Intelligence quotient
<b>IRI</b> .....	Interpersonal reactivity index
<b>JASP</b> .....	(name of software)
<b>kHz</b> .....	Kilo Hertz
<b>L</b> .....	Left
<b>LOTC</b> .....	Lateral occipito-temporal cortex
<b>MEP</b> .....	Motor evoked potential

---

<b>MNI</b> .....	Montreal Neurological Institute
<b>MNS</b> .....	Mirror neuron system
<b>MRI</b> .....	Magnetic resonance imaging
<b>MT</b> .....	Motor threshold
<b>MT\ V5</b> .....	Middle temporal area including V5
<b>NIFTI</b> .....	Neuroimaging Informatics Technology Initiative
<b>NIHC</b> .....	Netherlands Initiative Brain and Cognition
<b>norm</b> .....	Normalized
<b>n.s.</b> .....	Not significant
<b>NWO</b> .....	Netherlands Organization for Scientific Research
<b>PDD-NOS</b> .....	Pervasive developmental disorder not otherwise specified
<b>PMd</b> .....	Dorsal premotor cortex
<b>PMv</b> .....	Ventral premotor cortex
<b>PF</b> .....	Brain area PF
<b>PFt</b> .....	Brain area PFt
<b>pFWE</b> .....	Significance threshold using family-wise error correction
<b>PLD</b> .....	Point-light display
<b>pSTS</b> .....	Posterior superior temporal sulcus
<b>pVI</b> .....	Posterior lobule VI
<b>qFDR</b> .....	Significance threshold using false discovery rate
<b>r</b> .....	Pearson correlation coefficient
<b>R</b> .....	Right
<b>R<sup>2</sup></b> .....	Coefficient of determination
<b>RL</b> .....	Response latency
<b>ROI</b> .....	Region of interest

---

<b>rTMS</b>	.....	Repetitive transcranial magnetic stimulation
<b>SEM</b>	.....	Standard error of the mean
<b>SI</b>	.....	Primary somatosensory cortex
<b>SMA</b>	.....	Supplementary motor area
<b>SD</b>	.....	Standard deviation
<b>ScramMo</b>	.....	Scrambled motion (name of experimental condition)
<b>SPM</b>	.....	Statistical parametric mapping (name of software)
<b>SPSS</b>	.....	(same of software)
<b>SUIT</b>	.....	Spatially unbiased atlas template
<b>T</b>	.....	Tesla
<b>TA</b>	.....	Acquisition time
<b>TD</b>	.....	Typically developing
<b>TMS</b>	.....	Transcranial magnetic stimulation
<b>ToM</b>	.....	Theory of mind
<b>TPJ</b>	.....	Temporo-parietal junction
<b>USA</b>	.....	United States of America
<b>UCL</b>	.....	University College London
<b>UK</b>	.....	United Kingdom
$\mu\mathbf{V}$	.....	Micro volt
<b>V4</b>	.....	Visual area 4
<b>V5</b>	.....	Visual area 5
<b>WB</b>	.....	Whole-brain