



**Erasmus University Rotterdam, the Netherlands**  
**CSC PhD 2015 Project Description**

School/Department:	Erasmus University Rotterdam Erasmus Institute of Psychology, Section Brain & Cognition Erasmus Graduate School of Social Sciences and the Humanities
Project Title:	The temporal course of valence and arousal in the brain electrical response to emotional stimuli.
Abstract:	<p>Dr. Jan W. Van Strien is the Research Director of the Erasmus Institute of Psychology.</p> <p>Van Strien is a full professor in Biological and Cognitive Psychology. He investigates the psychophysiology of cognition and emotion. He conducts his research mainly in the EEG facilities of the Erasmus Behavioral Lab. He was the first researcher at the Erasmus University Rotterdam to conduct simultaneous EEG and fMRI acquisition in cooperation with the radiology department of the Erasmus Medical Center. His research concerns the electrophysiological responses of the brain to emotional stimuli and the interaction of emotion and cognition. Topics are: affective pictures, affective words, facial expressions, emotional memory, emotion and attention, and cognitive control of emotions. Dr. Van Strien has published in leading (neuro)scientific journals such as Social Cognitive and Affective Neuroscience, Neuroimage, Neuropsychologia, Biological Psychology, International Journal of Psychophysiology, Emotion, and Developmental Science.</p> <p>The Research Project comprises a series of EEG experiments in which the temporal sequence of emotional processing in the brain will be examined. Two dimensions of emotions are studied: valence (i.e. pleasant or unpleasant) and arousal (i.e., exciting or non-exciting). It is hypothesized that the brain responds faster to the valence dimension of emotional stimuli than to the arousal dimension. It is also hypothesized that the valence dimension is more resistant to habituation than the arousal dimension. This will particularly be the case with stimuli that in the course of human evolution were phylogenetically more fear-relevant.</p> <p>Early and late event-related potential components will be recorded in response to emotional stimuli such as affective pictures, predator pictures, and facial expressions. In addition, other psychophysiological measures such as the EEG frequency domain, skin conductance and heartbeat measures in response to these stimuli will be recorded. Behavioral and cognitive measures, such as</p>



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	memory performances will also be registered. The research takes place in the Erasmus Behavioral Lab in Rotterdam.
Requirements of candidate:	<p>Master degree: Yes (preferably in Psychology or Cognitive Neuroscience)</p> <p>Background: knowledge of EEG and/or other psychophysiological methods, EEG signal processing, statistical skills.</p> <p>IELTS Grade: 7.0 (minimal 6.0 per component) or TOEFL: 100 (minimal 20 per component)</p>
Supervisor information:	<p>Prof. dr. Jan W. Van Strien, Ph.D. – full professor (supervisor/promotor) Email address: vanstrien@fsw.eur.nl</p> <p>Personal website: <a href="http://www.jwvanstrien.nl/">http://www.jwvanstrien.nl/</a></p> <p>Graduate school: <a href="http://www.egs3h.eur.nl/">http://www.egs3h.eur.nl/</a></p> <p><u>Selected publications</u></p> <p>Van Strien, J.W., Eijlers, R., Franken, I.H.A., Huijding, J. (2014). Snake pictures draw more early attention than spider pictures in non-phobic women: Evidence from event-related brain potentials. <i>Biological Psychology</i>, 96, 150-157.</p> <p>Van Strien, J.W., Franken, I.H.A., Huijding, J. (2014). Testing the snake-detection hypothesis: Larger early posterior negativity in humans to pictures of snakes than to pictures of other reptiles, spiders and slugs. <i>Frontiers in Neuroscience</i>, 8:691.</p> <p>Langeslag, S.J.E., Olivier, J.R., Köhlen, M.E., Nijs, I.M., &amp; Van Strien, J.W. (in press). Increased attention and memory for beloved-related information during infatuation: Behavioral and electrophysiological data. <i>Social Cognitive and Affective Neuroscience</i>.</p> <p>Langeslag, S.J.E. &amp; Van Strien, J.W. (2013). Up-regulation of emotional responses to reward-predicting stimuli: An ERP study. <i>Biological Psychology</i>, 94, 228-233.</p>



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	<p>Van Strien, J.W., Glimmerveen, J.C., Franken, I.H.A., Martens, V.E.G., de Bruin, E.A. (2011). Age-related differences in brain electrical activity during extended continuous face recognition in younger children, older children, and adults. <i>Developmental Science</i>, 14, 1107-1118.</p> <p>Gootjes, L., Coppens, L.C., Zwaan, R.A., Franken, I.H.A., Van Strien, J.W. (2011) Effects of recent word exposure on emotion-word Stroop interference: An ERP study. <i>International Journal of Psychophysiology</i>, 79, 356-363.</p> <p>Gootjes, L., Franken, I.H.A., &amp; Van Strien, J.W. (2011). Cognitive emotion regulation in yogic meditative practitioners: Sustained modulation of electrical brain potentials. <i>Journal of Psychophysiology</i>, 25, 87-94.</p> <p>Langeslag, S. J. E. &amp; Van Strien, J. W. (2010). Comparable modulation of the Late Positive Potential by emotion regulation in younger and older adults. <i>Journal of Psychophysiology</i>, 24, 186-197.</p> <p>Van Strien, J.W., De Sonnevile, L.M.J. , &amp; Franken I.H.A. (2010). The Late Positive Potential and explicit versus implicit processing of facial valence. <i>Neuroreport</i>, 21, 565-661.</p> <p>Nielen, M.M.A., Heslenfeld, D.J., Heinen, K., Van Strien, J.W., Witter, M.P., Jonker, C., Veltman, D.J. (2009). Distinct brain systems underlie the processing of valence and arousal of affective pictures, <i>Brain and Cognition</i>, 71, 387-396.</p> <p>Van Strien, J.W., Glimmerveen, J.C., Martens, V.E.G., de Bruin, E.A. (2009). Age-related differences in brain activity during extended continuous word recognition in children. <i>NeuroImage</i> 47, 688-699.</p> <p>Langeslag, S. J. E. &amp; Van Strien, J. W. (2009). Aging and emotional memory: The co-occurrence of neurophysiological and behavioral positivity effects. <i>Emotion</i>, 9, 369-377.</p> <p>Van Strien, J.W., Franken, I.H.A., Huijding, J. (2009). Phobic spider fear is associated with enhanced attentional capture by spider pictures: a rapid serial presentation ERP study. <i>Neuroreport</i>, 20, 445-449.</p>
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	<p>Van Strien, J.W., Langeslag, S.J.E., Strekalova, N.J., Gootjes, L., Franken, I.H.A.. (2009). Valence interacts with the early ERP old/new effect and arousal with the sustained ERP old/new effect for affective pictures. <i>Brain Research</i>, 1251, 223-235..</p> <p>Langeslag, S.J.E., Franken, I.H.A., Van Strien, J.W. (2008). Dissociating love-related attention from task-related attention: An Event-Related Potential Oddball study with face stimuli. <i>Neuroscience Letters</i>, 431, 236-240.</p> <p>Van Strien, J.W., Verkoeijen, P.P.J.L., Van der Meer, N., Franken, I.H.A. (2007). Brain electrical activity and word repetition spacing. <i>International Journal of Psychophysiology</i> 66, 205-214.</p> <p>Hagenbeek, R.E., Rombouts, S.A.R.B., Veltman, D.J., Van Strien, J.W., Witter, M.P., Scheltens, P., Barkhof, F. (2007). Nonlinear changes in brain activity during continuous word repetition: an event-related multi-parametric fMRI study. <i>American Journal of Neuroradiology</i>, 28, 1715-1721.</p> <p>Langeslag, S.J.E., Jansma, B.M., Franken, I.H.A., Van Strien, J.W. (2007). Event-related potentials responses to love-related facial stimuli. <i>Biological Psychology</i>, 76, 109-115.</p> <p>Van Strien, J.W., Hagenbeek, R.E., Stam, C.J., Rombouts, S.A.R.B., Barkhof, F. (2005). Changes in brain electrical activity during extended continuous word recognition. <i>NeuroImage</i>, 26, 952-959.</p>
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