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PhD in Medical Sciences  
2015-2016

INVITATION to the Public defence of

**Peter VAN SCHUERBEEK**

To obtain the academic degree of '**DOCTOR IN MEDICAL SCIENCES**'

**The influence of harm avoidance on the female brain: a structural and functional neuroimaging study.****Thursday 21 April 2016**

Auditorium **Brouwer**, 17:00  
Faculty of Medicine and Pharmacy, Laarbeeklaan 103, 1090 Brussel

How to reach the campus Jette:

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## Summary of the dissertation

Harm avoidance (HA) is a personality trait describing one's tendency to inhibit actions due to expected risks for a negative outcome or personal harm. We hypothesized that individual differences in emotional processing and brain morphology, in particular in the amygdalae, is related to HA. This hypothesis was studied in 3 fMRI studies and 2 morphology studies using VBM and ROI labeling. The fMRI studies, revealed that the neural activity in the amygdala in response to emotional stimuli differed in relation to HA. However, the observed differences and relations, were found to be task dependent. The performed morphology studies, did not reveal any correlation between HA and the morphology in the amygdalae, but revealed correlations between brain morphology and HA in the frontal, temporal and limbic cortexes. However, a repeated analysis of the morphology data, revealed heterogeneous results depending on the chosen processing settings. From these results, we concluded that brain morphology and emotional processing in the brain and amygdalae can be related to HA, but given the statistical weakness of the correlations found, more sensitive and standardized approaches should be developed. Moreover, it seems worth to look at all areas from the stimuli processing, emotional and cognitive neural networks and to include the interactions with the other personality traits, rather than focusing on a possible correlation between HA and the morphology and activity in the amygdalae solely.

## Curriculum Vitae

Peter Van Schuerbeek graduated in 2001 as master in the physics at the VUB. Soon after his graduation, he started in the MRI center of the UZ Brussel. As physicist, he supported many fMRI studies going on in the department. Based on the continuous collaboration between the psychiatric and the radiology departments, Peter started in 2011 with his PhD project in addition to his ongoing job in the MRI center.