

University of Groningen

## Executive functioning and ecological validity in fMRI, neuropsychological assessment and rehabilitation

Lamberts, Kirsten Froukje

**IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.**

*Document Version*

Publisher's PDF, also known as Version of record

*Publication date:*

2009

[Link to publication in University of Groningen/UMCG research database](#)

*Citation for published version (APA):*

Lamberts, K. F. (2009). *Executive functioning and ecological validity in fMRI, neuropsychological assessment and rehabilitation*. [Thesis fully internal (DIV), University of Groningen]. [s.n.].

### Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

### Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

*Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.*

**Executive functioning and ecological validity in fMRI,  
neuropsychological assessment, and rehabilitation.**

Paranimfen: Meike Dekker  
Marije Schutte

Financial support by the Netherlands Heart Foundation and Stichting  
Beatrixoord Noord Nederland for the publication of this thesis is gratefully  
acknowledged

RIJKSUNIVERSITEIT GRONINGEN

**Executive functioning and ecological validity in fMRI,  
neuropsychological assessment, and rehabilitation.**

Proefschrift

ter verkrijging van het doctoraat in de  
Medische Wetenschappen  
aan de Rijksuniversiteit Groningen  
op gezag van de  
Rector Magnificus, dr. F. Zwarts,  
in het openbaar te verdedigen op  
woensdag 14 oktober 2009  
om 14.45 uur

door

Kirsten Froukje Lamberts  
geboren op 4 december 1975  
te Groningen

**Promotores:**

Prof. dr. W.H. Brouwer  
Prof. dr. J.H.A. de Keyser

**Copromotores:**

Dr. J.M. Spikman  
Dr. R.J. Renken

**Beoordelingscommissie:**

Prof. dr. J.J. Evans  
Prof. dr. L. Fasotti  
Prof. dr. K.L. Leenders

ISBN: 978-90-367-3905-4





## Contents

<b>Introduction</b>	<b>I</b>
<b>Chapter 1</b>	<b>5</b>
Executive Functioning: its Rehabilitation after Brain Injury and the Contribution of Functional Neuroimaging.	
<b>Chapter 2</b>	<b>25</b>
Neuroimaging Measure of Real Life Planning; Tower of London Compared with Daily Life Planning Test in fMRI.	
<b>Chapter 3</b>	<b>41</b>
A Real-Life, Ecologically Valid Test of Executive Functioning: the Executive Secretariat Task after Brain Injury.	
<b>Chapter 4</b>	<b>59</b>
Effects of a Multifaceted Treatment Program for Executive Dysfunction on Indications of Executive Functioning in Daily Life.	
<b>Chapter 5</b>	<b>81</b>
Frontal vs. Parietal Involvement in Planning after Cognitive Rehabilitation Therapy of the Dysexecutive Syndrome: Six Case Studies of Stroke Patients.	
<b>Chapter 6</b>	<b>109</b>
General Discussion and Conclusions	
<b>References</b>	<b>117</b>
<b>Samenvatting</b>	<b>135</b>
<b>Dankwoord</b>	<b>141</b>
<b>Curriculum vitae</b>	<b>147</b>