



UvA-DARE (Digital Academic Repository)

My dopamine has been busy: Research on gene by environment interactions in child externalizing behavior

Chhangur, R.R.

Publication date

2016

Document Version

Final published version

[Link to publication](#)

Citation for published version (APA):

Chhangur, R. R. (2016). *My dopamine has been busy: Research on gene by environment interactions in child externalizing behavior*.

General rights

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), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

MY DOPAMINE HAS BEEN BUSY

RABIA CHHANGUR

RESEARCH ON GENE BY ENVIRONMENT INTERACTIONS IN CHILD EXTERNALIZING BEHAVIOR

MY DOPAMINE HAS BEEN BUSY

RABIA CHHANGUR

RESEARCH ON GENE BY ENVIRONMENT INTERACTIONS IN CHILD EXTERNALIZING BEHAVIOR

MY DOPAMINE HAS BEEN BUSY

Research on Gene by Environment Interactions in Child
Externalizing Behavior

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 van Promoties ingestelde commissie, in het openbaar te verdedigen in de Aula der Universiteit op woensdag 5 oktober 2016, te 13.00 uur door **Rita Rabiagatoen Chhangur** geboren te Paramaribo, Suriname

ISBN: 978-94-6299-385-3

Cover & book design: studio ilse van klei / www.ilsevanklei.nl

Printed by: Ridderprint B.V., Ridderkerk, The Netherlands

Copyright © 2016 Rabia R. Chhangur

No part of this thesis may be reproduced in any form without permission from the author

PROMOTIECOMMISSIE:

Promotores: Prof. dr. G. Overbeek, Universiteit van Amsterdam
Prof. dr. W. Matthys, Universiteit Utrecht
Prof. dr. B. Orobio de Castro, Universiteit Utrecht

Overige leden: Prof. dr. M. J. Bakermans-Kranenburg, Universiteit Leiden
Prof. dr. S. M. Bögels, Universiteit van Amsterdam
Prof. dr. L. Goossens, Katholieke Universiteit Leuven
Prof. dr. P. J. M. Prins, Universiteit van Amsterdam
Prof. dr. G. J. J. M. Stams, Universiteit van Amsterdam

Faculteit der Maatschappij- en Gedragwetenschappen

CONTENTS

CHAPTER 1	–	General Introduction	9
CHAPTER 2	–	<i>DRD4</i> and <i>DRD2</i> Genes, Parenting, and Adolescent Delinquency: Longitudinal Evidence for a Gene by Environment Interaction	19
CHAPTER 3	–	ORCHIDS: An Observational Randomized Controlled Trial on Childhood Differential Susceptibility	41
CHAPTER 4	–	Gene by Environment Research to Prevent Externalizing Problem Behavior: Ethical Questions Raised for a Public Healthcare Perspective	53
CHAPTER 5	–	Intervention Effectiveness of The Incredible Years: New insights into Sociodemographic and Intervention-based Moderators	67
CHAPTER 6	–	Genetic Moderation of Intervention Efficacy: Dopaminergic Genes, The Incredible Years, and Externalizing Behavior in Children	93
CHAPTER 7	–	Genetic Moderation of Intervention Efficacy: Distinguishing Receptor-, Transporter-, and Enzyme-Related Dopaminergic Genes	117
CHAPTER 8	–	General Discussion	131
		<i>References</i>	142
		<i>Summary</i>	166
		<i>Nederlandse Samenvatting</i>	170
		<i>Publications</i>	176
		<i>Dankwoord</i>	178
		<i>Curriculum Vitae</i>	182