



Chapter VIII

APPENDIX

Acknowledgments

Publications and Manuscripts

Portfolio

Words of thanks

ACKNOWLEDGMENTS

GenR is conducted by the Erasmus Medical Center in close collaboration with the Erasmus University Rotterdam, Faculty of Social Sciences, the Municipal Health Service Rotterdam area, and the Stichting Trombosedienst and Artsenlaboratorium Rijnmond (STAR), Rotterdam. We gratefully acknowledge the contribution of general practitioners, hospitals, midwives and pharmacies in Rotterdam. The Generation R Study is made possible by financial support from: Erasmus Medical Center, Rotterdam, and the Netherlands Organization for Health Research and Development (ZonMw).

The presented work and studies were performed at the Department of Child and Adolescent Psychiatry/Psychology of the Erasmus University Medical Center – Sophia Children's Hospital and supported by a grant of the Dutch Ministry of Education, Culture, and Science and the Netherlands Organization for Scientific Research (NWO grant No. 024.001.003, Consortium on Individual Development). The author was additionally supported by a Canadian Institutes of Health Research team grant.

PUBLICATIONS AND MANUSCRIPTS

Published

Neumann, A., Pappa, I., Lahey, B. B., Verhulst, F. C., Medina-Gomez, C., Jaddoe, V. W., ... & Tiemeier, H. (2016). Single nucleotide polymorphism heritability of a general psychopathology factor in children. *Journal of the American Academy of Child & Adolescent Psychiatry*, 55(12), 1038-1045. (Chapter III.C)

Neumann, A., Noppe, G., Liu, F., Kayser, M., Verhulst, F. C., Jaddoe, V. W., ... & Tiemeier, H. (2017). Predicting hair cortisol levels with hair pigmentation genes: a possible hair pigmentation bias. *Scientific reports*, 7(1), 8529. (Chapter V.A)

Neumann, A., Direk, N., Crawford, A. A., Mirza, S., Adams, H., Bolton, J., ... & Milaneschi, Y. (2017). The low single nucleotide polymorphism heritability of plasma and saliva cortisol levels. *Psychoneuroendocrinology*, 85, 88-95. (Chapter V.B)

Viuff, A. C., Sharp, G. C., Rai, D., Henriksen, T. B., Pedersen, L. H., Kyng, K. J., ... & Tiemeier, H. (2018). Maternal depression during pregnancy and cord blood DNA methylation: findings from the Avon Longitudinal Study of Parents and Children. *Translational psychiatry*, 8(1), 244.

Vojinovic, D., Adams, H. H., Jian, X., Yang, Q., Smith, A. V., Bis, J. C., ... & Saba, Y. (2018). Genome-wide association study of 23,500 individuals identifies 7 loci associated with brain ventricular volume. *Nature communications*, 9(1), 3945.

Cortes Hidalgo, A. P., Neumann, A. , Bakermans-Kranenburg, M. J., Jaddoe, V. W., Rijlaarsdam, J. , Verhulst, F. C., White, T. , van IJzendoorn, M. H. and Tiemeier, H. (2019), Prenatal Maternal Stress and Child IQ. *Child Development*.

Cardenas, A., Faleschini, S., Hidalgo, A. C., Rifas-Shiman, S. L., Baccarelli, A. A., DeMeo, D. L., ... & El Marroun, H. (2019). Prenatal maternal antidepressants, anxiety, and depression and offspring DNA methylation: epigenome-wide associations at birth and persistence into early childhood. *Clinical Epigenetics*, 11(1), 56.

Bolhuis, K., Tiemeier, H., Jansen, P. R., Muetzel, R. L., Neumann, A., Hillegers, M. H., ... & White, T. (2019). Interaction of schizophrenia polygenic risk and cortisol level on pre-adolescent brain structure. *Psychoneuroendocrinology*, 101, 295-303.

Accepted

Sallis, H., Szekely, E., Neumann, A., Jolicoeur-Martineau, A., van IJzendoorn, M., ... & Evans J. (2019). General psychopathology, internalising and externalising in children and functional outcomes in late adolescence. *Journal of Child Psychology and Psychiatry* (in press). (Chapter III.B)

Dunn, E.C., Nishimi, K., Neumann, A., Renaud, A., Cecil, C.A.M., ... & Tiemeier, H. (2019). Time-dependent effects of exposure to physical and sexual violence on psychopathology symptoms in late childhood: In search of sensitive periods in development. *Journal of the American Academy of Child & Adolescent Psychiatry* (in press).

Zondervan-Zwijnenburg, M.A.J., Veldkamp, S.A.M. , Nelemans, S.A., Neumann, A., Barzeva, S., Branje, S. J. T., ... & Boomsma, D.I. (2019). Parental Age and Offspring Childhood Mental Health: A Multi-Cohort, Population-Based Investigation. *Child Development* (in press). (Chapter III.A)

Submitted

Abdellaoui, A., Sandra, S., Sealock, J., Treur, J.L., Dennis, J.. Phenome-wide investigation of health outcomes associated with genetic predisposition to loneliness. *Human Molecular Genetic* (Submitted).

Diemer, E.W., Labrecque,, J.A., Neumann, A., Tiemeier, H., Swanson, S.A., Mendelian randomization approaches to the study of prenatal exposures: a systematic review. *International Journal of Epidemiology* (Submitted).

Neumann, A., Muetzel, R.L., Lahey, B.B., Bakermans-Kranenburg, M.J., van IJzendoorn, M.H., ... & Tiemeier, H. (2019). White matter microstructure and the general psychopathology factor in children (Submitted). (Chapter III.E)

PhD Portfolio**Date:** Wednesday, 5 March 2019

Name PhD student: Alexander Neumann
Erasmus MC Department: Child & Adolescent Psychiatry
Research School: NIHES
PhD period: Aug 2014 – Feb 2019
Promotors: Henning Tiemeier
 Marinus van IJzendoorn
 Marian Bakermans-Kranenburg

	Year	ECTS
1. PhD training		
MSc-program Genetic Epidemiology, NIHES:		
Principles of Research in Medicine	2014	0.7
Principles of Genetic Epidemiology	2014	0.7
Genomics in Molecular Medicine	2014	1.4
Advances in Genomics Research	2014	0.4
Genome-Wide Association Analysis	2014	1.4
Study Design	2014	4.3
Genetic-Epidemiologic Research Methods	2014	5.1
Linux for Scientists	2014	0.6
SNP's and Human Diseases	2014	1.4
Biostatistical Methods I: Basic Principles	2015	5.7
Biostatistical Methods II: Classical Regression Models	2015	4.3
Elective courses, NIHES:		
Advances in GWAS	2015	1.4
Family-based Genetic Analysis	2015	1.4
An Introduction to the Analysis of Next-Generation Sequencing Data	2015	1.4
Topics in Meta-analysis	2015	0.7
Pharmaco-epidemiology	2015	0.7
Introduction to Bayesian Methods in Clinical Research	2015	1.4
Causal Mediation Analysis	2015	0.7
Social Epidemiology	2015	0.7
Symposia, Conferences & Workshops:		
5 CID Meetings/Symposia, <i>Universiteit Utrecht</i>	2014-2018	1
EAGLE meeting, <i>Vrije Universiteit</i>	2015	0.2
Quantitative Genomics, <i>Wellcome Trust, London</i>	2015	0.2

World Congress of Psychiatric Genetics, <i>Toronto</i>	2015	1.4
Sophia Research Day (Oral Presenta- tion)	2016	0.2
CID Lab Tour, <i>Universiteit Utrecht</i>	2016	0.2
CID Symposium , <i>Universiteit Utrecht</i> (Poster Presentation)	2016	0.2
KNICR Symposium, <i>Erasmus MC</i> (Oral Presentation)	2016	0.2
SRCD, Austin (Oral presentation)	2017	1.4
ISRCAP, Universiteit van Amsterdam (Oral presentation)	2017	1.4
Stress-NL, Amsterdam	2017	0.2
CID Meeting , <i>Universiteit Utrecht</i> (Oral presentation)	2018	0.2
Adult and Pediatric Life Support	2018	0.4
MRI safety and usage training	2016-2017	1
<hr/>		
2. General scientific activities		
Supervising systematic review article writing for course: "Ontwikkeling van psychiatrische ziektebeelden"	2014-2015	0.5
Master Thesis Supervision: 2 students	2014-2015	6
Minor Thesis Supervision: 2 students	2015	0.5
Supervising systematic review article writing for course: "Ontwikkeling van psychiatrische ziektebeelden"	2015-2016	0.5
Master Thesis Supervision: 2 students	2016	6
Supervising systematic review article writing for course: "Ontwikkeling van psychiatrische ziektebeelden"	2016-2017	0.5
Peer review (JAACAP, JCPP)	2017	0.4
Minor Thesis Supervision: 2 students	2018	0.5
Medicine Student Internship supervi- sion	2018	3
Peer review (JAACAP)	2018	0.2

WORDS OF THANKS

This thesis described observations based on thousands of participants from all around the world. The studies performed here were made possible by countless researchers, staff and participants, who I wish I could thank all individually. Unfortunately, I will be able to only concentrate on those people, who directly helped me on a personal level to write this PhD thesis.

Naturally, the person most directly involved in a PhD student's life is the PhD promotor. I was very lucky to have Henning Tiemeier as promotor. He not only had an incredibly diverse knowledge on all things related to psychiatric epidemiology and related fields, but also always had good advice on how to conduct scientific research in general, as well as on how to survive politics and bureaucracy in science. I was always impressed how Henning was able to have detailed knowledge about all of his student's projects, given how many students Henning supervised at any given time. I have lots of good things to say about Henning, but the one aspect I appreciated the most is that I felt like I had freedom how I wanted to approach scientific questions, but at the same time he was also very decisive when I felt unsure or when he noticed that I was on a wrong path. In other words, I never felt neither lost nor restricted with Henning. I also have to thank my second and third promotor: Marinus van IJzendoorn and Marian Bakermans-Kranenburg. I appreciated their advice on all my projects and the chance to have an alternative perspective. I was also impressed, how I could send them a manuscript in the middle of the night and receive detailed comments back five minutes later.

While I was lucky to have very involved promotors with whom I had lots of contact, I also worked with many other colleagues who shaped my years as PhD student. In the first years, it was no doubt Irene Pappa, who had the most influence. Most things I know about genetic analyses are thanks to her, as she helped me immensely to enter the world of psychiatric genetics with lots of practical knowledge and guidance. I am also immensely happy, that Irene was one of my first friends in Rotterdam. I am very grateful for all the chats we had and her emotional support. Speaking of good friends, I was also very happy that Charlotte Cecil joined Generation R. She is the perfect combination of friend, colleague and supervisor. I have been learning a lot from her and am excited to see how the projects we started during the PhD period will turn out.

In general, the behavior and cognition group of Generation R is full of amazing people, who are pleasant to work with and inspire me. I would like to thank everybody in the behavior group, as everybody had some impact on me and helped me in writing of the thesis. I would like to especially thank Rosa Mulder for her help and friendship. While it is unfortunately not yet reflected in the authorship list, she had a big influence on most of the presented studies in this thesis. I am happy to see that finally the first studies in which we formally collaborated are being completed. Andrea Cortes, Ryan Muetzel and Jeremy Labreque, I enjoyed a lot talking with you about such fun topics like

measurement invariance, tract-based spatial statistics and sampling bias, though also happy that we could also talk about non-work related things such as dogs and marathons. Desi, you are a remarkable human being, as well.

Several people outside of the behavior and cognition group also had an impact on this thesis. For example, the people from the molecular epidemiology group, such as Carolina Medina-Gomez and Janine Felix, helped me learn a lot about genetics in general and gave lots of practical advice. Outside of Erasmus MC, I must thank Esther Walton, who helped me a lot with the EWAS of ADHD symptoms, as well as new projects. Her openness to work on challenging studies and her critical evaluation of my proposals has been crucial for these projects. I also want to thank Ashley Wazana and Eszter Szekely for the opportunity to join the DREAM BIG Consortium and for research visits at the Jewish General Hospital in Montreal. I want to thank them for always understanding, when I had to concentrate on my PhD thesis, for teaching me many new concepts, analysis approaches and perspectives. I am also grateful for the discussions and collaborations with Alexia Jolicoeur-Martineau, Jonathan Evans, Hannah Sallis, Rebecca Pearson, Erin Dunn and Yiwen Zhu. I also want to thank all co-authors and members of the EAGLE, PACE and CORNET consortia for their contributions and advice. Furthermore, I appreciate the contributions of Benjamin Lahey. Not only is this thesis inspired by his work on general psychopathology, but he was also a great help in implementing and interpreting the general psychopathology models discussed here. I also wish to thank Jason Clark and Sven Walter for sparking my interest in psychiatric genetics during the course evolutionary psychiatry.

Beyond direct colleagues, many others helped with this thesis as well. I want to thank Paul Zhutovsky for being my friend for so many years and always somehow ending up not too far away. Paul teaching me math and neuroinformatics and our discussions on many scientific topics helped with this thesis, but his support as friend meant a lot to me as well. The list of important friends would not be complete without mentioning also Stas Scherba and Lea Penning, who I could always count on joining crazy projects and who always were there to help and support me. I also want to thank my host family during my high school exchange in the US, the Ferrell family. Given how crucial it is to be able to communicate in English in science, them giving me an opportunity to practice English in the US was a large help in writing this thesis. Beyond the English skills, their introduction to a different culture and philosophies helped me think how we acquire and how we evaluate knowledge, which influenced my scientific thought processes.

My girlfriend Yu-Chin Her had a direct and indirect impact on this thesis as well. Her curiosity and directness always forced me to critically evaluate my work inside and outside academia and as a result improve. At the same time the happiness she brought into the second half of my PhD time gave me strength to complete this thesis. I also thank Yu-Chin for drawing the painting found in the cover. Finally, the thesis would not have been possible without my family: my father, Jörg Neumann, my mother, Nadia Neumann, and my sister, Julia Neumann. While I was never very good at showing it, I

am happy that I could grow up with my amazing sister. My father inspired me to be curious about the world and has always supported my scientific endeavors. Thanks to him scientific thinking and appreciation of technology was a natural part of my upbringing and was the foundation for my work as PhD student. Perhaps thanks to my mom, who always had theories about why humans or animals behave a certain way, I also developed an interest in psychology. My mom has always shown me the maximum amount of love possible, which I appreciate greatly.

