Bob Kapteijns

PhD Candidate

Behavioural Science Institute (BSI) • Radboud University • Nijmegen, NL

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Trained as a cognitive neuroscientist, I am a PhD candidate with a primary interest in the development of early cognitive, literacy and numeracy abilities in young children. In my project, I conducted a 5-wave longitudinal study, examining individual differences in early reading and math development throughout the early years of primary school (n = 224).

Education & Research

2021 – Present **PhD Candidate**
Behavioural Science Institute (BSI); Radboud University, Nijmegen
Lab group: Learning, Education and Development (LED)
PhD supervisors: prof. Evelyn Kroesbergen, dr. Anne van Hoogmoed, dr. Marco van de Ven, prof. Rogier Kievit
Description: I have conducted a 5-wave longitudinal study on children's early cognitive, literacy and numeracy development throughout early primary school. A variety of cognitive and home-related factors associated with individual differences in early reading and math development were assessed. The project involved an initial sample of 224 children, and achieved a retention rate of 94% at the fifth time point, 2.5 years later. In addition, I am working on a project utilizing diffusion-weighted MRI data to investigate the relationships between cortical white matter, executive skills, and early reading and math development in a large, atypical youth sample.

2019 – 2021 **Research Assistant (RA)**
Max Planck Institute for Psycholinguistics (MPI), Nijmegen
Lab group: Psychology of Language; Language in Interaction
Description: This project examined the neural underpinnings of individual differences in language skills in young adults, using a combination of online testing, lab experiments, and (functional and structural) MRI. I have been fully involved in (and/or responsible for) all stages of the research cycle, including experiment design, programming of language tasks, recruitment, data acquisition, and preliminary analyses.

2018 – 2019 **Research Assistant (RA)**
Donders Institute for Brain, Cognition and Behaviour, Nijmegen
Lab group: Cognitive and Affective Neuroscience (PI: prof. Erno Hermans)
Description: This project investigated the daily-life stress reactivity in medical students, using a combination of ambulatory physiological recordings, daily psychological surveys (EMA), and functional and structural MRI.

2016 – 2018 **MSc in Cognitive Neuroscience (research master) – graduated cum laude**
Radboud University, Nijmegen
Research track: Plasticity & Memory
Thesis: '*Exploring the Manifestation of Exam Stress and Stress Resilience in Undergraduate Medical Students*'

2012 – 2015 **BSc in Psychology**, *Tilburg University*
Thesis: '*The Functional Role of Alpha Power in Visuospatial Attention*' (methods: EEG, multi-level modelling)

2006 – 2012 **Gymnasium Beekvliet**, *Sint-Michielsgestel*

Skills

Research interests: Cognitive development, early reading, early math, (neuro)linguistics, (foreign) language learning, dyslexia, psychometrics, adaptive learning, intelligence, giftedness, memory.

Programming / software: R (*advanced*), Neurobs Presentation, Inquisit, E-Prime, Matlab, Python, JASP, SPSS, Praat.

Research methods: Longitudinal projects, testing in schools, lab experiments, fMRI neuroimaging, EEG, linear and logistic mixed-effects models, SEM, mixture modelling (LCA, LPA, RMLPA), data visualization, scientific writing, syntactic parsing.

Languages:
- Dutch (native)
- English (fluent); Cambridge CAE (Advanced) Certificate; C1 level
- German (passive)

Teaching

UTQ (*BKO*)

Partial UTQ (*BKO*) certificate 'Student supervision' (2025)

Lectured courses

Academic Skills 2 (*AV2*) for the BSc program Pedagogical Sciences (2022-2023 and 2023-2024)

Capita Selecta: Onderzoek (2022-2023 and 2023-2024)

MSc thesis supervision

Steffi Scholten (RU). *De relatie tussen ouderlijke betrokkenheid en verwachtingen en de groei van rekenvaardigheden bij kinderen: Een longitudinaal onderzoek.* (In progress).

Fere van Dijk (RU). *De invloed van de geletterde thuisomgeving op leesvaardigheid en woordenschat: een longitudinale studie bij jonge kinderen.* (In progress).

Jochem Steehouwer (RU). *Zijn de cognitieve voorspellers van technisch lezen tijdens groep 3 anders dan tijdens groep 2?* (In progress).

Melissa Altundag (RU). *De invloed van verschillende thuisomgevingsfactoren en cognitieve vaardigheden op vroege rekenvaardigheden.* (In progress).

Demi Binnenpoorte (RU). *Cognitieve Vaardigheden, Thuisomgeving en Gedragskenmerken: Voorspellers van Vroege Rekenvaardigheid bij Kinderen in Groep 2 en Groep 3*. (2024).

Sinead Berens (RU). *Voorspellers voor groei in fonemische vaardigheden bij zwakke presteerders aan het begin van de basisschool: invloeden vanuit thuisomgeving en cognitie.* (2024).

Hilline van de Zandschulp (RU). *Vroege snelheid, later succes: de voorspellende waarde van de benoemsnelheid op de latere lees- en rekenvaardigheid.* (2024).

Kirsten Smit (RU). *De relatie van thuisactiviteiten met letterkennis, fonologische vaardigheden en verbaal werkgeheugen van kleuters*. (2024; co-supervised).

Kris van Keulen (RU). *Valt de appel écht niet ver van de boom? De invloed van de thuisomgeving op de rekenvaardigheid van het kind*. (2024; co-supervised).

Timo van de Sande (RU). *Ouder-Kind Interacties Binnen de Thuisomgeving (HE) en Vroege Reken- en Leesvaardigheden*. (2023; co-supervised).

Joyce Dekkers (RU). *De invloed van het werkgeheugen op de relatie tussen de thuisactiviteiten en de rekenvaardigheden van kleuters*. (2023; co-supervised).

Maartje den Dekker (RU). *De relatie tussen SES en Vroege Rekenvaardigheden van Kleuters: Onderzoek naar de Mediërende Rol van de Thuisomgeving*. (2023; co-supervised).

Publications

Kapteijns, B., Van de Ven, M., Van Hoogmoed, A. H., & Kroesbergen, E. H. (2025). Cognitive and home predictors of precocious reading and math before formal education. *Journal Of Experimental Child Psychology*, *252*, 106159. https://doi.org/10.1016/j.jecp.2024.106159

Van Weerdenburg, M., & Kapteijns, B. Talent in the domain of Language. In: Hoogeveen, L., Kroesbergen, E., Verschueren, K., & O'Reilly, C. (2025). The European Handbook of Gifted Education and Talent Development. Routledge, Chapman & Hall, Incorporated.

Tutunji, R., Kogias, N., Kapteijns, B., Krentz, M., Krause, F., Vassena, E., & Hermans, E. J. (2023). Detecting Prolonged Stress in Real Life Using Wearable Biosensors and Ecological Momentary Assessments: Naturalistic Experimental Study. *Journal Of Medical Internet Research*, *25*, e39995. https://doi.org/10.2196/39995

Kapteijns, B., & Hintz, F. (2021). Comparing predictors of sentence self-paced reading times: Syntactic complexity versus transitional probability metrics. *PLoS ONE*, *16*(7), e0254546. https://doi.org/10.1371/journal.pone.0254546

Kapteijns, B., Van Hoogmoed, A. H., Slipenkyj, M., Lau, N.T.T., Kroesbergen, E. H., & Van de Ven, M. (in preparation). Latent longitudinal profiles in early literacy and numeracy development from kindergarten to first grade using RMLPA.

Talks and conferences

Upcoming: August, 2025	EARLI conference (Graz, Austria). Symposium organizer + paper presentation: *'Longitudinal latent profiles of numeracy development across early primary school using RMLPA.'* (accepted)
Upcoming: July, 2025	SSSR conference (Calgary, Canada). Paper presentation: '*Latent longitudinal profiles of early literacy: individual differences in phonological, vocabulary and reading across early primary school.'* (accepted)
July, 2024	IMBES conference (Leuven, Belgium). Symposium organizer + paper presentation: '*Predictors of 'typical' and 'precocious' math development from kindergarten to first grade.*'
July, 2024	Highlights in the Language Sciences (HILS) conference (MPI; Nijmegen, NL). Poster presentation.
June, 2024	BSI Day (Nijmegen, NL). Poster presentation.
August, 2023	EARLI conference (Thessaloniki, Greece). Symposium organizer + paper presentation: '*Child and home predictors of 'typical' and 'precocious' math and reading during kindergarten.*'
July, 2022	BSI PhD Day (Nijmegen, NL). Poster presentation.
June, 2022	MCLS conference (Antwerp, Belgium). Poster presentation.

Other

February, 2025	Committee member of the Assessment Committee (*visitatie-commissie*) for the research programs in Pedagogical and Educational Sciences
February, 2025	Reviewer for Journal of Experimental Child Psychology (JECP)
August, 2024	Reviewer for Journal of Numerical Cognition (JNC)
May, 2023	Research visit to the lab of Prof. Daniel Ansari at Western University (Ontario, Canada) for one month
July, 2022	Co-organizer Radboud Summer School course: '*New Perspectives on Typical and Atypical Trajectories of Learning in Childhood Development*'

Open Science

I firmly believe that research transparency, openness and replicability are essential for ensuring the quality and progress of the developmental sciences. In my research, I am strongly committed to Open Science principles and practices. All papers associated with my PhD dissertation have been preregistered on the project's OSF page, where preprints are also made available as soon as they enter the review process. Digital tasks (e.g., reproducible Inquisit scripts developed for our task battery) have been shared with researchers both within and outside the Netherlands. Moreover, although data collection for my longitudinal project was only recently completed, we have already established collaborations with researchers at institutions like KU Leuven (Belgium) and Western University (Canada) to share our data, with plans to expand these efforts in the future. Furthermore, in our MRI project, we utilize neuroimaging data acquired by the CALM lab at the University of Cambridge (UK).

References

- Dr. Anne van Hoogmoed (PhD co-supervisor): Anne.vanHoogmoed@ru.nl
- Dr. Marco van de Ven (PhD co-supervisor): Marco.vandeVen@ru.nl
- Prof. Rogier Kievit (PhD co-supervisor): Rogier.Kievit@radboudumc.nl
- Prof. Evelyn Kroesbergen (PhD supervisor): Evelyn.Kroesbergen@ru.nl