

Niels Vanhasbroeck

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PERSONAL DETAILS AND SKILLS

Nationality: Belgian

Languages: Dutch (native), English (proficient), French (basic), Spanish (basic)

Programming: R (proficient), Julia (proficient), Python (intermediate), C++ (basic), and JavaScript (basic)

RESEARCH INTEREST

Mathematical psychology

Psychometrics

Emotion, Attitudes, Walking behavior

WORK EXPERIENCE

Postdoctoral Researcher

2025 – present

University of Amsterdam

Developing and validating the Attitudinal Blume-Capel model to capture opinion dynamics. In collaboration with Prof. Dr. Han van der Maas.

Postdoctoral Researcher

2023 – 2025

University of Amsterdam

Developing and validating the Minds for Mobile Agents pedestrian model. Creating software for its simulation and estimation. In collaboration with Prof. Dr. Andrew Heathcote and Dr. Dora Matzke.

PhD Student

2019 – 2023

KU Leuven

Validating the Affective Ising Model, a drift-diffusion model to capture affect dynamics. Supervised by Prof. Dr. Francis Tuerlinckx (primary supervisor), Prof. Dr. Wolf Vanpaemel, and Prof. Dr. Agnes Moors (co-supervisors).

TEACHING AND SUPERVISION EXPERIENCE

Lecturer “Basic Skills in Mathematics, Programming, and Statistics”

2025 – present

University of Amsterdam

Bachelor level. Providing lectures and practicals of the programming section of this course, providing students with a basic understanding of the R programming language.

Guest Lecturer “Modeling Minds”

2024 – present

University of Amsterdam

Master level. Providing practicals around the `predped` package while supervising projects in which this package is used. In collaboration with Prof. Dr. Andrew Heathcote and organized by Prof. Dr. H. Steven Scholte.

Supervision of Bachelor Theses 2024 – present

University of Amsterdam

Group supervision of bachelor thesis students completing research in the fields of affect dynamics and pedestrian modeling. Supervised 10 bachelor thesis students across the years.

Supervision of Master Theses 2019 – present

KU Leuven and University of Amsterdam

Individual supervision of master thesis students completing research in the fields of affect dynamics, pedestrian modeling, and psychometrics. Supervised 15 master thesis students across the years.

Supervision of Internships 2019 – present

KU Leuven and University of Amsterdam

Individual supervision of interns completing research in the fields of affect dynamics and pedestrian modeling. Supervised 4 interns across the years.

Tutor in “Social Psychology” 2019 – 2022

KU Leuven

Bachelor level. Providing practicals about how to read, understand, and critically evaluate social psychological papers. Course organized by Prof. Dr. Vera Hoorens.

Tutor in “Statistics” 2018 – 2019

Rebus Leuven

Bachelor and Master level. Providing private tutoring about basic and advanced statistical principles with as primary audience psychology students.

EDUCATION AND TRAINING

University Teaching Qualification 2025 – present

University of Amsterdam

Course taken to improve my skills as a university-level teacher. As a case study, I am restructuring the programming module of the “Basic Skills in Mathematics, Programming, and Statistics” course.

Master of Science, Psychology 2017 – 2019

KU Leuven

Specialization “Theory and Research”. Graduated “Magna Cum Laude”.

Bachelor in Psychology 2014 – 2017

KU Leuven

PUBLICATIONS

- [1] Ariens, S., **Vanhasbroeck, N.**, Lafit, G., & Ceulemans, E. (preprint). Interpreting parameters of dynamic regression models *Preprint available at <https://osf.io/preprints/psyarxiv/4tznv.v1>*.
- [2] Henninger, M., Menegola, S., **Vanhasbroeck, N.**, & Tuerlinckx, F. (preprint). Affect dynamics or response bias? extreme response style in daily-life assessments *Preprint available at <https://osf.io/preprints/psyarxiv/3hgmt.v1>*.

- [3] Kandala, R., **Vanhasbroeck, N.**, & Hoemann, K. (preprint). Evaluating BERTopic on open-ended data: A case study with Belgian Dutch daily narratives *Preprint available at <https://arxiv.org/pdf/2504.14707?>*
- [4] Kandala, R., **Vanhasbroeck, N.**, Tamm, S., Van hamme, H., Kuppens, P., Mesquita, B., & Hoemann, K. (preprint). Toward an ecology of emotion in everyday life *Preprint available at <https://osf.io/preprints/psyarxiv/hfvnx.v1>*.
- [5] **Vanhasbroeck, N.**, Yu, K., & Ariens, S. (preprint). No need to be indirect: On the role of data in the validation of theory *Preprint available at <https://osf.io/preprints/psyarxiv/6f4q7.v1>*.
- [6] Tuerlinckx, F., Kuppens, P., Ariens, S., Cloos, L., Dejonckheere, E., Lafit, G., Niemeijer, K., Revol, J., Schat, E., Schreuder, M., **Vanhasbroeck, N.**, & Ceulemans, E. (2026). New developments in experience sampling methodology. *British Journal of Mathematical and Statistical Psychology*, 79, 46–65. <https://doi.org/10.1011/bmps.12398>
- [7] Henninger, M., **Vanhasbroeck, N.**, & Tuerlinckx, F. (2025). Affect dynamics or response bias? The relationship between extreme response style and affect dynamics in a controlled experiment. *Psychological Assessment*, 37, 639–655. <https://doi.org/10.1037/pas0001370>
- [8] Yu, K., Lin, T.-Y., Zaman, J., Tuerlinckx, F., & **Vanhasbroeck, N.** (2025). Consistency of perceptual response variability in size estimation and reproduction tasks. *Behavior Research Methods*, 57, 127. <https://doi.org/10.3758/s13428-025-02650-1>
- [9] **Vanhasbroeck, N.**, Loossens, T., & Tuerlinckx, F. (2024). Discounting models as a special case of the VARMAX. *Journal of Mathematical Psychology*, 120-121, 102856. <https://doi.org/10.1016/j.jmp.2024.102856>
- [10] **Vanhasbroeck, N.**, Niemeijer, K., & Tuerlinckx, F. (2024). Nonlinearity in affect dynamics persists after accounting for the valence of daily-life events. *Emotion*, 24, 1206–1223. <https://doi.org/10.1037/emo0001336>
- [11] **Vanhasbroeck, N.**, Vanbelle, S., Moors, A., Vanpaemel, W., & Tuerlinckx, F. (2024). Chasing consistency: On the measurement error in self-reported affect in experiments. *Behavior Research Methods*, 56, 3009–3022. <https://doi.org/10.3758/s13428-023-02290-3>
- [12] Chalkia, A., **Vanhasbroeck, N.**, Van Oudenhove, L., Kindt, M., & Beckers, T. (2023). Emotional associative memory is disrupted by directed forgetting. *Communications Psychology*, 1, 24. <https://doi.org/10.1038/s44271-023-00024-x>
- [13] Tanjitpiyanond, P., Jetten, J., Peters, K., Ashokkumar, A., Barry, O., Billet, M., Becker, M., Booth, R. W., Castro, D., Chinchilla, J., Costantini, G., Dejonckheere, E., Dimdins, G., Erbas, Y., Espinosa, A., Finchilescu, G., Gómez, A., González, T., Goto, N., ... Yeung, V. W.-L. (2023). A 32-society investigation of the influence of perceived economic inequality on social class stereotyping. *European Journal of Social Psychology*, 53, 367–382. <https://doi.org/10.1002/ejsp.2908>
- [14] Loossens, T., Meers, K., **Vanhasbroeck, N.**, Anarat, N., Verdonck, S., & Tuerlinckx, F. (2022). Efficient estimation of bounded gradient-drift diffusion models of affect on CPU and GPU. *Behavior Research Methods*, 54, 1428–1443. <https://doi.org/10.3758/s13428-021-01674-7>
- [15] **Vanhasbroeck, N.**, Loossens, T., Anarat, N., Ariens, S., Vanpaemel, W., Moors, A., & Tuerlinckx, F. (2022). Stimulus-driven affective change: Evaluating computational models of affect dynamics in conjunction with input. *Affective Science*, 3, 559–576. <https://doi.org/10.1007/s42761-022-00118-5>

- [16] **Vanhasbroeck, N.**, Ariens, S., Tuerlinckx, F., & Loossens, T. (2021). Computational models for affect dynamics. In C. H. Waugh & P. Kuppens (Eds.), *Affect dynamics*. Springer. https://doi.org/10.1007/978-3-030-82965-0_10
- [17] **Vanhasbroeck, N.**, Devos, L., Pessers, S., Kuppens, P., Vanpaemel, W., Moors, A., & Tuerlinckx, F. (2021). Testing a computational model of subjective well-being: A preregistered replication of rutledge et al. (2014). *Cognition and Emotion*, *35*, 822–835. <https://doi.org/10.1080/02699931.2021.1891863>
- [18] Chalkia, A., Schroyens, N., Leng, L., **Vanhasbroeck, N.**, Zenses, A.-K., Van Oudenhove, L., & Beckers, T. (2020). No persistent attenuation of fear memories in humans: A registered replication of the reactivation-extinction effect. *Cortex*, *129*, 496–509. <https://doi.org/10.1016/j.cortex.2020.04.017>

TALKS AND POSTERS

Invited Talks

- [1] **Vanhasbroeck, N.** (2025a). Complex systems in psychology: Applications in affect dynamics and walking behavior Presented at the weekly seminar of the *Psychometrics and Statistics Group*, University of Groningen, 1 April 2025.
- [2] **Vanhasbroeck, N.** (2025b). Psychology through the lens of complex systems Presented at a lab meeting of Laura Bringmann’s *Intensive Longitudinal Data Lab*, University of Groningen, 22 January 2025.
- [3] **Vanhasbroeck, N.** (2025c). Walking you through the Minds for Mobile Agents pedestrian model Presented at the weekly seminar of the *Research Group of Quantitative Psychology and Individual Differences*, KU Leuven, 25 March 2025.
- [4] **Vanhasbroeck, N.** (2023). Computational models for affect dynamics Presented at a colloquium of the *Affect, Motivation, & Action Lab*, Leiden University, 15 June 2023.
- [5] **Vanhasbroeck, N.** (2021). The Affective Ising Model Presented at a meeting of the *Brain Research of Anxiety Mechanisms Lab*, KU Leuven, 28 April 2021.

Conference Presentations

- [1] Henninger, M., **Vanhasbroeck, N.**, & Tuerlinckx, F. (2025). Affect dynamics or response bias? The relationship between extreme response style and affect dynamics in a controlled experiment Presented instead of the first author at the *Annual Meeting of the Society for Ambulatory Assessment*, Leuven, 26 May 2025 – 28 May 2025.
- [2] **Vanhasbroeck, N.**, Loossens, T., & Tuerlinckx, F. (2025). Seemingly different yet the same: Discounting models as a special case of the autoregressive models Presented at the *Annual Meeting of the Society for Mathematical Psychology*, Columbus, 25 July 2025 – 28 July 2025.
- [3] **Vanhasbroeck, N.** & Yu, K. (2025). Can we rely on reliable parameter estimates? Presented at the *International Meeting of the Psychometric Society*, Minneapolis, 14 July 2025 – 18 July 2025.
- [4] **Vanhasbroeck, N.**, Blanken, T., Borsboom, D., Matzke, D., & Heathcote, A. (2024). Minds for Mobile Agents (M4MA): A pedestrian model based on psychological principles Presented at the *Annual Meeting of the Society for Mathematical Psychology*, Tilburg, 19 July 2024 – 22 July 2024.

- [5] **Vanhasbroeck, N.** & Heathcote, A. (2024). Creating a workflow for preprocessing spatial positions Poster presented at the *International Meeting of the Psychometric Society*, Prague, 16 July 2024 – 19 July 2024.
- [6] **Vanhasbroeck, N.**, Vanbelle, S., Vanpaemel, W., Moors, A., & Tuerlinckx, F. (2023). Assessing the consistency of affective responses Presented at the *International Meeting of the Psychometric Society*, Maryland, 25 July 2023 – 28 July 2023.
- [7] **Vanhasbroeck, N.**, Vanpaemel, W., Moors, A., & Tuerlinckx, F. (2023a). The Affective Ising Model: A nonlinear model of affect dynamics Presented at the *Annual Meeting of the Society for Mathematical Psychology*, Amsterdam, 18 July 2023 – 21 July 2023.
- [8] **Vanhasbroeck, N.**, Vanpaemel, W., Moors, A., & Tuerlinckx, F. (2023b). The Affective Ising Model: A nonlinear model of affect dynamics Presented at the *Interuniversity Graduate School of Psychometrics and Sociometrics Summer Conference 2023*, Tilburg, 8 June 2023 – 9 June 2023.
- [9] **Vanhasbroeck, N.** (2022). Context-driven affect dynamics: Nonlinear affective change in conjunction with input Presented at the *Annual Meeting of the Society for Ambulatory Assessment*, Virtual, 14 June 2022 - 16 June 2022.
- [10] **Vanhasbroeck, N.**, Loossens, T., Anarat, N., Ariens, S., Vanpaemel, W., Moors, A., & Tuerlinckx, F. (2022a). Computational models of affect dynamics: Accounting for nonlinearity and affective reactivity Poster presented at the *9th Annual Conference of the Society of Affective Sciences (SAS)*, Virtual, 30 March 2022 - 2 April 2022.
- [11] **Vanhasbroeck, N.**, Loossens, T., Anarat, N., Ariens, S., Vanpaemel, W., Moors, A., & Tuerlinckx, F. (2022b). Computational models of affect dynamics: Importance of accounting for nonlinearity and reactivity Poster presented at the *Conference of the International Society for Research on Emotion (ISRE)*, Los Angeles, 15 July 2022 - 18 July 2022.
- [12] **Vanhasbroeck, N.**, Loossens, T., Anarat, N., Ariens, S., Vanpaemel, W., Moors, A., & Tuerlinckx, F. (2022c). Stimulus-driven affective change: Nonlinearity of affect dynamics persists after accounting for input Poster presented at the *Annual Meeting of the Belgian Association for Psychological Sciences (BAPS)*, Leuven, 2 June 2022 - 3 June 2022.
- [13] **Vanhasbroeck, N.**, Chalkia, A., & Beckers, T. (2019). Directed forgetting of associative fear memories Poster presented at the *Annual Meeting of the Belgian Association for Psychology Science (BAPS)*, Liège, Belgium, 14 May 2019 - 15 May 2019.

Seminars

- [1] **Vanhasbroeck, N.** (2022). Reliability of single-item measures of affect within an experimental context Presented at the weekly seminar of the *Research Group of Quantitative Psychology and Individual Differences*, KU Leuven, 1 March 2022.
- [2] **Vanhasbroeck, N.**, Aeyels, J., Vanpaemel, W., Tuerlinckx, F., & Moors, A. (2022). Affective changes in an uncertain context Presented at the weekly seminar of the *Research Group of Quantitative Psychology and Individual Differences*, KU Leuven, 14 December 2022.
- [3] **Vanhasbroeck, N.** (2021). State transition in the Affective Ising Model Presented at the weekly seminar of the *Research Group of Quantitative Psychology and Individual Differences*, KU Leuven, 4 March 2021.

- [4] **Vanhasbroeck, N.** & Anarat, N. (2020). Gambling and affective change Presented at the weekly seminar of the *Research Group of Quantitative Psychology and Individual Differences*, KU Leuven, 18 February 2020.

SOFTWARE

predped	R package that enables users to estimate and simulate the Minds for Mobile Agents pedestrian model.
denoiser	R package that enables users to add realistic noise to and filter this noise from location data.
impulseR	R package that computes and visualizes how a system responds when it is given one or more impulses.
InputModels.jl	Julia package that allows the user to estimate and simulate a set of drift-diffusion models while accounting for external input.

EXTRACURRICULAR ACTIVITIES

Consulting Editor at “Behavior Research Methods” 2025 – present
Specialization on dynamic systems.

Member of “Measurement is the New Black” 2023 – present
Consortium revolving around the improvement of measurement in daily-life studies. Activities include workshops, hackatons, and regular online presentations.

Member of “Dynamic Network and Time Series Models” 2020 – present
Consortium revolving around the modeling and study of time series data. The main activity of the group involves regular presentations.

Member of the “Interuniversity Graduate School of Psychometrics and Sociometrics” 2019 – 2023
Institute that provides training in psychometrics and sociometrics. Regularly attended the conferences organized by the institute and followed the workshop “What is psychometrics?” organized by Prof. Dr. Denny Borsboom at the *University of Amsterdam*.

Person responsible for Collective Research Efforts 2020 – 2023
Person responsible for communicating the need for collective research efforts for the *Research Group of Quantitative Psychology and Individual Differences* at the *KU Leuven*.

Representative of Junior Researchers 2020 – 2022
Representative of the junior researchers (PhD students and postdoctoral researchers) of the *Research Group of Quantitative Psychology and Individual Differences* at the *KU Leuven*. Entailed attending specialized meetings and discussing concerns that junior researchers have so that they can be taken up at the faculty board.

Workshop Provider 2018 – 2020
Workshop provider for *Academics for Companies* with topics revolving around brainstorming and decision-

making.

Workshops on Hard and Soft Skills

2017 – present

Followed many workshops throughout the years to develop my hard skills (e.g, reliability, qualitative data analysis, and diagnostic modeling) and my soft skills (e.g., pitching, business skills, and presentation skills).