

Experienced in Research, Consultancy and Data Analyses

postdoc @ Center for Statistics (University Hasselt)	01.03.16 - 28.02.17
external consultancy and data analyses for medical, industrial and behavioral research	
postdoc @ Methodology of Educational Sciences Research Group (KU Leuven)	18.05.15 - 27.07.15
evaluation of bootstrap procedures for meta-analysis on single case data	
development of user interface for the analysis of single case data	
postdoc @ Centre for Educational Effectiveness and Evaluation (KU Leuven)	multiple contracts
statistical analyses of test data on mathematics and languages	13.10.13 - 20.12.13 19.05.14 - 08.06.14 15.12.14 - 31.12.14
postdoc @ Interactive Technologies (KULAK)	multiple contracts
study of adaptive learning environments for language learning; methodology and statistics	01.06.10 - 31.10.11
includes internal and external consultancy, teaching, giving workshops and support in data-analysis	01.02.12 - 14.02.12 10.12.12 - 15.03.13 05.06.13 - 04.09.13
postdoc @ Research Group Quantitative Psychology and Individual Differences (KU Leuven)	01.11.08 - 31.12.09
modeling the inter individually different evolution of naturalistically observed emotions	
PhD training @ Methodology of Educational Sciences Research Group (KU Leuven)	01.10.04 - 30.09.08
study of multilevel design efficiency using simulation (promoters W. Van den Noortgate & P. Onghena)	defense 06/10/08
research fellow @ Centre for Sociology of Education (KU Leuven)	01.01.00 - 31.08.01
survey research on the perceived effectiveness of high-school mergers by the teaching staff	
commissioned by the Department of Education in Flanders (OBPWO)	
independent	
development of Shiny-App for the analysis of single case data (commissioned by KU Leuven)	02.15
development of an automatic scoring tool (commissioned by Selor)	05.12
development of procedures for representing and statistically analyzing data (commissioned by Selor)	06.12
exploratory data analyses and visualization (commissioned by VZW Stijn)	08.12
data analyses for scale development and IRT item calibration (commissioned by KU Leuven)	02.12

Education at KU Leuven

PhD in Methodology of Educational Research	04-08
Master in Statistics	social & behavioral statistics ** 01-03
Master in Artificial Intelligence	cognitive sciences 98-99
Licentiate in Psychology	theoretical psychology 93-98
with Teacher Training	

Skills

statistical software: R / SAS (+ Statistica & MLwiN)	data management: R (+ basic SQL)
programming: R / SAS (+ Java & basic Python)	languages: Dutch, English and intermediate French

primary academic referee: prof. dr. Wim Van den Noortgate (promoter, boss & client)

note: gaps are due to traveling or unemployment

** 1-year program of Statistics spread over two years, combined with traveling

OUTPUT

Articles

- Cools, W., Van den Noortgate, W., & Onghena, P. (2009). Design efficiency for imbalanced multilevel data. *Behavior Research Methods*, 41, pp. 192-203. DOI: 10.3758/BRM.41.1.192
- Cools, W., De Fraine, B., Van den Noortgate, W., & Onghena, P. (2009). Multilevel design efficiency in educational effectiveness research. *School effectiveness and school improvement*, 3, 357-373. DOI: 10.1080/09243450902850176
- Cools, W., Van den Noortgate, W., & Onghena, P. (2008). ML-DEs: Multilevel design efficiency using simulation. *Behavior Research Methods*, 40, pp. 236-249. DOI: 10.3758/BRM.40.1.236
- Kadengye, D.T., Cools, W., Ceulemans, E., & Van den Noortgate, W. (2011). Simple Imputation Methods versus Direct Likelihood Analysis for Missing Item Scores in Multilevel Educational Data. *Behavior Research Methods*, 44, pp. 516-531, DOI: 10.3758/s13428-011-0157-x.

Presentations

- Cools, W., Tuerlinckx, F., Kuppens, P. (2009, July). *Modeling the individual specific oscillatory evolution of emotion in continuous time*. Paper presented at the 9th International Meeting of the Psychometric Society, Cambridge, United Kingdom.
- Cools, W., Van den Noortgate, W., & Onghena, P. (2007, August). *Power and Accuracy in Multilevel Designs: An Application to Educational Research*. Paper presented at the 56th meeting of the International Statistical Institute, Lisbon, Portugal.
- Cools, W., Van den Noortgate, W., & Onghena, P. (2007, October). *Design efficiency in estimation and statistical testing of multilevel variance parameters: A simulation study*. Paper presented at the 15th meeting of the Belgian Statistical Society, Antwerp, Belgium.
- Cools, W., & Van den Noortgate, W. (2008, July). *Multilevel Design Efficiency using Simulation: Two Exemplary Studies*. Paper presented at the 3rd European Congress of Methodology, Oviedo, Spain.
- Van den Noortgate, W., & Cools, W. (2008, July). *Sample-size requirements for a three-level meta-analysis*. Paper presented at the 3th European Congress of Methodology, Oviedo, Spain.
- Van den Noortgate, W., & Cools, W. (2009, May). *Three level meta-analyses*. Paper presented at The Campbell Collaboration Colloquium, Oslo, Norway.

Poster

- Cools, W., Desmet, P., & Van den Noortgate, W. (2012, June). *Learning to Conjugate Verbs in a Second Language, how to analyze it*. Poster presented at the Leuven Statistics Day, Leuven, Belgium.

Tool

- Cools, W., Van den Noortgate, W., & Onghena, P. (2006). *ML-DEs: MultiLevel Design Efficiency using simulation*. [<https://perswww.kuleuven.be/~u0032822/ML-DEs.html>] (scripts and manual).

External Workshops

- Cools, W. & Van den Noortgate W. (2012, May) *Statistics for testing*. A four-day workshop on a wide variety of methodological and statistical issues related to the testing of ability.
- Van den Noortgate W. & Cools, W. (2011, June) *The use of R for doing meta analyses*. Campbell workshop in KU Leuven.

Consultancy

- Dierickx, I., Van Hooland, S., Tomsin, K., Vanercke, D., Cools, W., Fransen, H., & Gyselaers, W. (2016). B1. Feasibility of combined doppler-ECG assessment of internal jugular veins. *The Journal of Maternal-Fetal & Neonatal Medicine*, 29 (sup2), 6-6.