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# Wilfried Cools, PhD

Leuven, Jan 1<sup>st</sup>, 2020

Expert in Applied Statistics and Methodology for Behavioral, Medical, Educational and Social Research

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## Consultant Applied Statistics

VUB / UZ Brussel: principal consultant	Interfaculty Center Data processing and Statistics (ICDS)	13.09.17 +
MethoStats: freelance,	supporting researchers through consultancy, data analysis, tutoring and automation	11.11.16 +

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## Experience in Research and Consultancy

<b>freelance consultant applied statistics @ MethoStats</b>	multiple contracts
data analyses, item selection, scale development, calibration, Shiny-Apps development, data processing automation	
<b>consultant @ Center for Statistics (University Hasselt)</b>	01.03.16 - 28.02.17
external consultancy and data analyses for medical, industrial and behavioral research	
<b>researcher/consultant @ Methodology of Educational Sciences Research Group (KU Leuven)</b>	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	
<b>researcher/consultant @ Centre for Educational Effectiveness and Evaluation (KU Leuven)</b>	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	
<b>researcher/consultant @ Interactive Technologies (KULAK)</b>	multiple contracts
study of adaptive learning environments for language learning; methodology and statistics	
includes internal and external consultancy, teaching, giving workshops and support in data-analysis	
01.06.10 - 31.10.11	
01.02.12 - 14.02.12	
10.12.12 - 15.03.13	
05.06.13 - 04.09.13	
<b>researcher @ Research Group Quantitative Psychology and Individual Differences (KU Leuven)</b>	01.11.08 - 31.12.09
modeling the inter individually different evolution of naturalistically observed emotions	
<b>PhD training @ Methodology of Educational Sciences Research Group (KU Leuven)</b>	01.10.04 - 30.09.08
study of multilevel design efficiency using simulation (promoters W. Van den Noortgate & P. Onghena)	
defense 06/10/08	
<b>research fellow @ Centre for Sociology of Education (KU Leuven)</b>	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)	

## Education at KU Leuven

PhD in Methodology of Educational Research	(4 years)	04-08
Master in Statistics	social & behavioral statistics (1 year)	01-03
Master in Artificial Intelligence	cognitive sciences (1 year)	98-99
Licentiate in Psychology	theoretical psychology (5 years)	93-98
with Teacher Training		

Using R, R, R, Shiny, SAS, Java, Python, ...

## OUTPUT

### Articles, research

- 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.

### Articles, consultancy

- Declercq, L., Cools, W., Beretvas, S. N., Moeyaert, M., Ferron, J. M., & Van den Noortgate, W. (2019). MultiSCED: A tool for (meta-)analyzing single-case experimental data with multilevel modeling. *Behavior Research Methods*.  
<https://doi.org/10.3758/s13428-019-01216-2>
- Dierickx, I., Van Hooland, S., Tomsin, K., Vanercke, D., Cools, W., Fransen, H., & Gyselaers, W. (2017). Feasibility of combined doppler-ECG assessment of internal jugular veins. *Ultrasound in Medicine & Biology*, 43, pp. 1853-1860.
- Bielen, R., Moreno, C., Van Vlierberghe, H., Bourgeois, S., Mulkay, J.-P., Vanwolleghem, T., Cools, W., ... Robaey, G. (2017). Belgian experience with direct acting antivirals in people who inject drugs. *Drug and Alcohol Dependence*, 177, 214-220.  
<https://doi.org/10.1016/j.drugalcdep.2017.04.003>
- Neuts, A., Stessel, B., Wouters, P. F., Dierickx, C., Cools, W., Ory, J.-P., ... Schoorens, D. (2018). Selective Suprascapular and Axillary Nerve Block Versus Interscalene Plexus Block for Pain Control After Arthroscopic Shoulder Surgery: A Noninferiority Randomized Parallel-Controlled Clinical Trial. *Regional Anesthesia and Pain Medicine*. <https://doi.org/10.1097/AAP.0000000000000777>
- Ghekiere, O., Dacher, J.-N., Dewilde, W., Mancini, I., Cools, W., Vanhoenacker, P. K., ... Nchimi, A. (2019). Value of Relative Myocardial Perfusion at MRI for Fractional Flow Reserve-Defined Ischemia: A Pilot Study. *American Journal of Roentgenology*, 1-8.  
<https://doi.org/10.2214/AJR.18.20469>

### Workshops & Information Sessions

- Cools, W. (2019, April) *Methodological and statistical issues in research proposals*. Info session VUB – UZ Brussel.
- Cools, W. & Van Laere, S. (2018, January) *Sample size calculation with GPower*. Workshop doctoral school at VUB.
- Cools, W. & Van den Noortgate W. (2012, May) *Statistics for testing*. Four-day workshop on methodology and statistics for testing ability.
- Van den Noortgate W. & Cools, W. (2011, June) *The use of R for doing meta analyses*. Campbell workshop at KU Leuven.

### Presentations

- Cools, W., Tuerlinckx, F., Kuppens, P. (2009, July). *Modeling the individual specific oscillatory evolution of emotion in continuous time*. Paper presented at the 9<sup>th</sup> 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 56<sup>th</sup> 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 15<sup>th</sup> 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 3<sup>rd</sup> 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 3<sup>th</sup> 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.

## Tools

Cools, W., Declerq, L., Beretvas, S.N., Moeyaert, M., Ferron, J.M., & Van den Noortgate, W. (2017). MultiSCED [software]. Retrieved from [www.single-case.com](http://www.single-case.com)

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).