Validity of empirical research in psychology

1. Full title
   Validity of empirical research in psychology

2. Research group
   Psychological Methods
   Director: Peter Molenaar & Han van der Maas

3. Members
   Senior staff
   Denny Borsboom, Johan Hoogstraten, Pieter Koele, Han van der Maas, Peter Molenaar, Harrie Vorst, Lourens Waldorp
   Postdoctoral fellows
   Conor Dolan, Dave Hessen, Wim Krijnen, Jan-Willem Romeijn
   PhD’s
   Michiel Hol, Peter van Rijn, Maarten Speekenbrink, Jelte Wicherts, Annemarie Zand Scholten

4. Membership Research Schools and other Research Institutes
   The program is embedded in the Interuniversity Graduate School for Psychometrics and Sociometrics (IOPS). Within IOPS, the program has close cooperation with the National Institute for Educational Measurement (CITO).

5. Research topics
   The research program of the Psychological Methods group is concerned with the conceptual analysis, technical development, practical implementation, and dissemination of methodological and statistical techniques in psychology. The central objective of the research program is to improve methodological practice in psychology; not only by developing new methods for psychological research, but also by adequately communicating methodological advances to the general psychological audience, and by assisting working researchers in the proper application of methodological techniques. In the past year, the main focus of the Psychological Methods group has been on psychometric theory. Issues that have received special attention within this program are a) the concept of measurement invariance and b) the relation between intraindividual processes and interindividual differences.
6. **Program development**

In the last four years (2000-2004), the Psychological Methods group was chaired by professor Peter Molenaar. The last year Peter Molenaar left to Penn State University and Han van der Maas replaced him. In this period, research was directed to new goals while the successful older components concerning decision-making, test construction, and validity were maintained. New research was initiated by Dolan and his group, who arrived with Molenaar in 2000. Dolan introduced the research line on measurement invariance. A new line has recently started concerning methods in cognitive neuroscience (Waldorp). In view of the fast expansion of neuroscience research in psychology, appropriate statistical methods for the analysis for EEG/MEG and fMRI data are very much needed. Cognitive neuroscience data are complex and require basic research in analytical techniques. In collaboration with researchers from other groups at the Psychology Research Institute we will initiate research along this line. The current developments in neuroscience also generate a host of questions concerning the autonomy of psychology with respect to biologically based approaches. These questions will be studied at a conceptual level, making use of recent insights in the philosophy of science concerning the reduction problem. Eric-Jan Wagenmakers will join the group in 2006. His research will focus on mathematical psychology, the relation between psychonomics and psychometrics and especially the use of response time measures in psychology.

The title of the program, 'Validity of empirical research in psychology', which in the past covered such diverse topics as mathematical statistics, experimental design, and philosophy of science, has therefore become somewhat too broad. In the past years, a focus on latent variable methodology has become the common, binding element of almost all of our work. The goal for the coming period is to develop a coherent and philosophically informed methodological framework based on latent variable theory, to convincingly show the advantages of using this framework in substantive applications, and to communicate these to the general scientific psychological community. This research agenda will be carried out under the heading of 'Latent variable theory in psychology'. The program bears sufficient similarity to other methodological research programs in The Netherlands to allow for fruitful communication and collaboration.
7. **Composition of research input of academic staff in 2005**

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RESEARCH OUTPUT

1. PhD Theses

1.a Internally prepared

1.c Doctorates at other faculties/universities, co-supervised by program members

2. Academic Publications

2.1 In refereed journals issued in English


2.2 Abstracts in refereed journals

2.3 In refereed journals issued in other languages

2.4 Other academic publications


3. Professional Publications


4. Congress proceedings

5. Popular publications


OTHER PROOFS OF PRODUCTIVITY

6. Editorial positions

6.1 Editorships
Dolan, C.V.
*Multivariate Behavioral Research (Associate Editor)*

Waldorp, L. J.
*Journal of Mathematical Psychology (Guest editor)*

6.2 Memberships of editorial boards
Koele, P.
*Acta Psychologica*

Mellenbergh, G. J.
*Psicothema*

7. Organisation of conferences and symposia

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8. Scientific Awards
Wichert, J. M.
*ISIR-Templeton Award for best student paper presented at the 2005 meeting of the International Society for Intelligence Research. ($2000 cash award)*

9. Membership of scientific committees
Hoogstraten, J.
*Member, Expertise Centrum Forensische Psychiatrie*

Koele, P.
*Secretary/treasurer, European Association for Decision Making (EADM)*

Mellenbergh, G. J.
*Chair, Accrediting Committee Research Master Programmes, Behavioral Sciences, KNAW*

*Member, Referee College, Social Sciences, Netherlands Organization for Scientific Research (NWO)*

*Member of the Examination Curricula Secondary Education (HAVO and VWO) in Economics and Arts, Netherlands Ministry of Education, Arts, and Sciences (OC&W)*
Chairman of the Evaluation Committee for the Quality Assessment Research 1998-2003, Faculty of Social and Behavioral Sciences, Tilburg University  
Chairman of the 2005 Assessment Research Institute of the Psychology  
Department, Faculty of Social and Behavioral Sciences, Leiden University  

10. Other products  

11. Visiting professorships and invited lectures  

*Visiting professorships*  
Romeijn, J. W., visiting scholar, at the University of Konstanz, Germany, June-August.  

*Keynote speeches and invited lectures at conferences*  
Borsboom, D. *The concept of validity*. Presentation delivered at the 14th International Meeting of the Psychometric Society (IMPS), Tilburg, July.