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# CARME-N – Correspondence Analysis and Related Methods Network CARME 2007

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# CARME-N – Correspondence Analysis and Related Methods Network CARME 2007

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- 1 In May 1991, on the initiative of Prof. Walter Kristof (University of Hamburg), the first international conference ever held on the topic of correspondence analysis was held in Cologne, Germany, hosted by the *Zentralarchiv für Empirische Sozialforschung* (Central Archive for Empirical Social Research) of the University of Cologne. This conference, organized by Jörg Blasius (Cologne) and Michael Greenacre (at this time University of South Africa, Pretoria, South Africa), called ***Correspondence Analysis in the Social Sciences***, drew an audience of about 50 people from seven countries.
- 2 Four years later in May 1995, Michael Greenacre (now University Pompeu Fabra, Barcelona) and Jörg Blasius decided to repeat the conference, but on a wider theme: ***Visualization of Categorical Data*** (see: [www.math.yorku.ca/SCS/Cologne/](http://www.math.yorku.ca/SCS/Cologne/)). The audience grew, nearly 100 participants attended, and so did their enthusiasm. From these two conferences two edited books appeared, with the same names, and have come to be recognized as major reference works in this area of research, both published by Academic Press (in 1994 and 1998).
- 3 Again, four years later, in May 1999, Jörg Blasius and Michael Greenacre organized their third conference in Cologne, this time distributing CD-ROMS of data from the International Social Survey Programme (ISSP) to all participants, with the requirement that all participants had to analyse data from this database, using any method of their choice. This conference, ***Large Scale Data Analysis*** (see, [www.uni-bonn.de/~iposoedv/soziologie/large\\_scale\\_data\\_analysis.html](http://www.uni-bonn.de/~iposoedv/soziologie/large_scale_data_analysis.html)), affectionately dubbed *LSD Analysis – a hallucinating experience* drew a yet wider audience of statisticians and sociologists, with parallel sessions entitled Religion and Social Inequality, for example, not a common event at a conference fundamentally dedicated to statistical methodology! The number of

participants increased again, now to 120, with participants from 20 countries from all continents.

- 4 Four years later in July 2003, Michael Greenacre and Jörg Blasius (now University of Bonn) organized their fourth in the series of “Cologne conferences”, this time in Barcelona. They decided to return to their original topic of correspondence analysis, but keeping the door open to “related methods” to foster the continuing debate on visualization of complex multivariate data; hence, the conference was called **Correspondence Analysis and Related Methods**, or simply CARME (see, [www.econ.upf.edu/carme/](http://www.econ.upf.edu/carme/)). This time 180 participants came to Barcelona for the event, again from all continents, who presented 82 papers and 6 posters. By the way, “Carme” is a Catalan girl’s name, the Catalan equivalent of the Spanish “Carmen”. Again, they decided to edit a book, focussing on **Multiple Correspondence Analysis and Related Methods**, this time published by Chapman & Hall/CRC. Having finalized this manuscript, 15 years after the first conference and a huge amount of travelling between Pretoria/Barcelona and Cologne/Bonn, there was a natural need for a homepage that is dedicated to CARME and its network “CARME-N” (see, [www.carme-n.org](http://www.carme-n.org)).
- 5 After having conferences in Cologne and Bonn, for the fifth conference in June 2007 Patrick Groenen from Rotterdam University offered to organize the next meeting. Together with Michel van de Velden (University of Rotterdam) he took the responsibility for CARME 2007 (see below and [www.carme-n.org/carme2007/index.html](http://www.carme-n.org/carme2007/index.html)). This time we had more than 60 papers, 7 posters and more than 80 participants, again from all continents. Instead of having an edited book, we decided that it is better to publish the papers in a special issue of a good quality and peer-reviewed journal – we are happy that *Computational Statistics and Data Analysis* agreed to do it. After the reviewing process we kept approximately 15 papers containing strong computational statistical and/or substantive data-analytic elements as well as 5 book reviews.
- 6 CARME is very much alive and has several future plans. The next small meeting will happen two years after CARME 2007 as a part of the joint meeting of the German Gesellschaft für Klassifikation (GfKl) and the IFCS at Dresden, Germany, from March 13-18, 2009. Two years later, a regular conference will be held CARME 2011. This edition will be organized in one of the cities in which correspondence analysis started, Rennes in France; organizer of this up-coming meeting will be our friend and colleague Jérôme Pagès (Agrocampus, Rennes, France).

## CARME 2007

- 7 The 2008 conference on Correspondence Analysis and Related Methods (CARME 2007) was held at Erasmus University Rotterdam, Rotterdam, The Netherlands from June 25-27, 2007.
- 8 The objective of this conference was to spotlight the very latest research in correspondence analysis and discuss future developments. Our aim was to bring together theoretical and applied researchers in all the areas where correspondence analysis is currently used, notably sociology, psychology, economy, education, ecology, archeology, geology, linguistics, philosophy, genetics, biomedical research, health economics, marketing, and management. Interdisciplinary contributions are particularly welcome.

- 9 Historically, CARME has an informal atmosphere that aims at promoting the exchange of ideas and scientific collaboration. As you can see in the program, we have several distinguished invited and contributed speakers. The two keynote presentations will be held by Fionn Murtagh and Wayne DeSarbo.
- 10 Previous CARME meetings have resulted in books edited by Michael Greenacre and Jörg Blasius. This time, we have decided that it is better to publish the papers in a special issue of a good quality journal. Therefore, papers containing strong computational statistical or substantive data-analytic elements will be considered for publication in a special peer-reviewed, or regular issue of the journal *Computational Statistics and Data Analysis*.
- 11 The program committee: Patrick Groenen, Jörg Blasius, Michael Greenacre, and Michel van de Velden.
- 12 *Sponsors* - We would like to thank the financial support given by:
- Erasmus Research Institute of Management (ERIM),
  - Vereniging Trustfonds Erasmus Universiteit Rotterdam.
- 13 Academic support for this meeting is given by:
- The IFCS, the International Federation of Classification Societies,
  - RC33, the Research Committee on Logic and Methodology of ISA (International Sociological Association),
- 14 *Computational Statistics & Data Analysis*, the Official Journal of the International Association for Statistical Computing.
- 15 *Topics* - Themes of the conference include all forms of correspondence analysis and related fields, including visualisations of categorical data:
- Simple correspondence analysis
  - Multiple correspondence analysis
  - Joint correspondence analysis
  - Multiway correspondence analysis
  - Canonical correspondence analysis
  - Nonsymmetrical correspondence analysis
  - Dual scaling
  - Optimal scaling
  - Homogeneity analysis
  - Multidimensional scaling of categorical data
  - Biplots of categorical data
  - Visualisation of compositional data
  - Correspondence analysis in the social sciences
  - Correspondence analysis in ecology and the environmental sciences
  - Correspondence analysis in the health sciences
  - Correspondence analysis in marketing research and management
- 16 *Previous conferences* - This conference is the fifth in a series of conferences organized every four years on correspondence analysis, multidimensional graphical techniques, and the analysis of large sets of categorical data:
- May 1991: Correspondence Analysis in the Social Sciences, Cologne (Germany)
  - May 1995: Visualisation of Categorical Data, Cologne (Germany)
  - May 1999: Large Scale Data Analysis, Cologne (Germany)
  - July 2003: Correspondence Analysis and Related Methods, Barcelona (Spain)

## 17 Organizing Committees

18 The Local Organizing Committee for this conference comprises: Patrick J. F. Groenen, Michel van de Velden, Martijn Kagit, Joost vanRosmalen, Elli Hoek van Dijke, and Georgi Nalbantov.

## 19 *Invited Speakers:*

- John Gower (Open University, Milton Keynes, UK)
- Fionn Murtagh (University of London, UK)
- Michael Friendly (York University, Toronto, Canada)
- Wayne DeSarbo (Pennsylvania State University, USA)
- Willem Heiser (Leiden University, The Netherlands)
- Antoine de Falguerolles (Université Paul Sabatier, Toulouse, France)
- Ludovic Lebart (Ecole Nationale Supérieure des Télécommunications, Paris, France)
- Gilbert Saporta (Conservatoire National des Arts et Métiers, Paris, France)
- Jérôme Pagès (Agrocampus, Rennes, France)
- Henk Kiers (Groningen University, The Netherlands)

## Academic Program, Monday June 25, 2007

20 09:00-10:00 *Registration Opening*: Chair, Patrick Groenen 10:00-10:15 Prof. dr. Philip Hans Franses, dean of the Erasmus School of Economics, Erasmus University Rotterdam

*Keynote Speaker: Fionn Murtagh*

Room: Athene, M1-19, Chair: Patrick Groenen

10:15-11:00 *Fionn Murtagh*: Correspondence analysis, a tale of three metrics

*Contributed Session 1: Biplot*

Room: Athene, M1-19, Chair: John Gower

11:30-11:55 *Kohei Adachi*: A least-squares algorithm for the unit-length vector MDS model and its nonmetric variant

11:55-12:20 *Sugnet Gardner-Lubbe, Patrick Groenen, Anthony la Grange and Niël le Roux*: Unfolding in the construction of nonlinear biplot trajectories

12:20-12:45 *Michel van de Velden, Patrick Groenen, and John Gower*: Area biplots

*Contributed Session 2: Analysis of contingency tables with ordinal variables*

Room: Rochester, M2-10, Chair: Luigi d'Ambra

11:30-11:55 *Ida Camminatiello and Rosaria Lombardo*: A generalization of CATANOVA method for ordinal-scale variables

11:55-12:20 *Rosaria Lombardo and Eric Beh*: Simple and multiple correspondence analysis using orthogonal polynomials

12:20-12:45 *Eric Beh, Luigi D'Ambra, and Biagio Simonetti*: Ordinal correspondence analysis based on cumulative chi-squared test

## 21 *Invited Speakers Session:*

Room: Athene, M1-19, Chair: Jörg Blasius

14:15-14:50 *Ludovic Lebart*: Correspondence analysis and SOM

14:50-15:25 *John Gower, Paul Eilers and Jörg Blasius*: Enhanced biplots

## 22 *Contributed Session 3: Statistical modelling*

Room: Athene, M1-19, Chair: Paul Eilers

15:55-16:20 *Jeroen Vermunt*: A comparison of dimensionality assessment and graphical display methods for sets of categorical variables

16:20-16:45 *Joost van Rosmalen, Hester van Herk, and Patrick Groenen*: Modeling response styles in cross-cultural research: A latent-class bilinear multinomial logit model  
 16:45-17:10 *Paul Lewi, Luc Wouters, Luc Bijmens, Rudi Verbeeck, and Hinrich Göhlmann*: Spectral map analysis/weighted log-ratio analysis of DNA microarray data  
 17:10-17:35 *Cajo ter Braak and Yiannis Kourmpetis*: Approximating a square matrix by a latent class model

23 *Contributed Session 4: Factor analytical models*

Room: Rochester, M2-10, Chair: Jérôme Pagès

15:55-16:20 *Elena Abascal, Ignacio Lautre, and Fermín Mallor*: Evolution analysis and stability in a bicriteria clustering problem

16:20-16:45 *Salwa Ben Ammou and Zied Kacem*: A combined approach using wavelets and PCA methods

16:45-17:10 *Marielle Linting*: Permutation tests in linear and nonlinear PCA

17:10-17:35 *Christiaan Heij, Patrick Groenen, and Dick van Dijk*: Principal components and covariates - Time series forecasting and biplot representations

## Academic Program, Tuesday June 26, 2007

24 *Invited Speaker Session:*

Room: Athene, M1-19, Chair: Wayne DeSarbo

09:00-09:35 *Henk Kiers and Patrick Groenen*: Visualizing dependence of bootstrap confidence intervals for methods yielding spatial configurations

09:35-10:10 *Antoine de Falguerolles*: A tour of Paris guided by statistical albums

25 *Contributed Session 5: Multidimensional scaling*

Room: Athene, M1-19, Chair: Willem Heiser

10:40-11:05 *Nees Jan van Eck and Ludo Waltman*: Applying ideas from homogeneity analysis to visualize similarity data

11:05-11:30 *Mark de Rooij*: Slide-vector models for multiple groups in continuous time

11:30-11:55 *Martijn Kagit, Michiel van Wezel, and Patrick Groenen*: A graphical shopping interface based on multidimensional scaling

11:55-12:20 *Damian Läge and Stefan Ryf*: Joint spaces for preferential data - Combining multidimensional scaling with robust Procrustean transformations

12:20-12:45 *Helena Carvalho and Eduardo Viegas Ferreira*: Rates of crime and social, economic, and institutional indicators (exploring by optimal scaling)

26 *Contributed Session 6: Social science applications*

Room: Rochester, M2-10, Chair: Sugnet Gardner-Lubbe

10:40-11:05 *Yasemin El-Menouar and Martin Fritz*: Value differences within Turkey - An application of correspondence analysis

11:05-11:30 *Rahim Hajji*: Turkish youth in the focus of German social science

11:30-11:55 *Henk Roose*: Concert hall or living room? Exploring the differences in the social structuring of private and public music consumption

11:55-12:20 *Ruben König*:

Analyzing trends with multiple and joint correspondence analysis - The case of the supporters of Dutch broadcasting associations from 1979 to 2005  
 12:20-12:45 *Kathrine Skoland*: Perceptions of work conditions in the oil industry

27 *Contributed Session 7: CA methodology I*

Room: Athene, M1-19, Chair: Michel Van de Velden

14:00-14:25 *Zerrin Aşan and Sevil Sentürk*: An application of fuzzy sets and correspondence analysis for transforming continuous data into categorical

14:25-14:50 *Oldemar Rodriguez*: Correspondence analysis for symbolic multi-valued variables

14:50-15:15 *Urbano Lorenzo-Seva, Michel van de Velden, and Henk Kiers*: Oblique rotation in correspondence analysis - When the visual inspection of the spatial map of categories does not help

15:15-15:40 *Jacques Allard, Vartan Choulakian and Biagio Simonetti*: Multiple taxi cab correspondence analysis of dichotomous items

28 *Contributed Session 8: Applications of dimension reduction methods*

Room: Rochester, M2-10, Chair: Antoine de Falguerolles

14:00-14:25 *Andreas Mühlichen, Andreas Barth, and Hartmut Pollmann*: Assessing participation restrictions in patients with diabetes mellitus using CatPCA

14:25-14:50 *Tor Korneliussen*: Mapping Nordic management scholars use of research methodologies - An application of biplot

14:50-15:15 *Jules de Tibeiro, Lionel Dionne, and Linjun Zhang*: Multiple correspondence analysis used complementary to agglomerative hierarchical clustering in a survey on leader-member exchange

15:15-15:40 *Francisco Casanova del Angel*: Factorial analysis model, case - Corrosion of structural shapes exposed to the atmosphere

## Poster Session

29 15:40-16:15

*Gülfidan Baris and Fikret Er*: Applications of correspondence analysis in marketing research

*Fikret Er*: A categorical data analysis of Turkish Super Football League for 2005-2006

*Halil Eryilmaz and Fikret Er*: An exploratory spatial data analysis of earthquake data

15:40-16:15

*Giovanni Flebus*: An iterative procedure to construct measurement scales for social sciences using CA-optimal scaling and factor analysis

*Sevil Sentürk and Zerrin Asan*: Categorization of attitude and demographic variables using fuzzy sets and correspondence analysis

*Harun Sönmez*: Statistical investigation of alcohol consumption of university students by log-linear models

*Levent Terlemez*: A fuzzy clustering for members of European Union with candidate countries

30 *Invited Speakers Session*

Room: Athene, M1-19, Chair: Henk Kiers

16:30-17:05 *Willem Heiser and Matthijs Warrens*: Horseshoe effects in multiple correspondence analysis - Distance transformations that let them disappear

17:05-17:30 *Michael Friendly*: HE plots and reduced-rank displays for multivariate linear models

## Academic Program, Wednesday June 27, 2007

31 *Invited Speakers Session:*

Room: Athene, M1-19, Chair: Michael Friendly



09:00-09:35 *Jérôme Pagès, Sébastien Lê, and François Husson*: Analysis of quantitative and categorical variables by multiple factor analysis

09:35-10:10 *Giuseppe Giordano and Gilbert Saporta*: The response surface as explorative tool in multiple correspondence analysis

32 *Contributed Session 9: Classification and modelling*

Room: Athene, M1-19, Chair: Mark De Rooij

10:40-11:05 *Ulas Akkücüük and J. Douglas Carroll*: Nonlinear mapping using the modified PARAMAP approach

11:05-11:30 *Antonio Ciampi, A. Gonzalez-Marcos, Manuel Castejon-Limas and Yves Lechevallier*: Comparison of two methods for simultaneous clustering of rows and columns of a data matrix - Application to web data

11:30-11:55 *Georgi Nalbantov, Patrick Groenen, and Jan Cor Bioch*: Nearest convex hull classification in the multi-category case

11:55-12:20 *Kar Yin Lam and Alex Koning*: Confidence intervals for Crombach's alpha in correspondence analysis

12:20-12:45 *Michael Greenacre*: Power transformations in correspondence analysis

33 *Contributed Session 10: Geometric data analysis I*

Room: Rochester, M2-10, Chair: Brigitte Le Roux

10:40-11:05 *Frederic Lebaron*: About Bourdieu's geometric modelling of data

11:05-11:30 *Mikael Börjesson and Donald Broady*: Swedish students in Paris - Social origin, educational careers and transnational investments

11:30-11:55 *Johs. Hjelldrekke and Olav Korsnes*: Social capital in the Norwegian field of power

11:55-12:20 *Alan Warde, Mike Savage, Brigitte Le Roux, and Henry Rouanet*: Consumption and cultures of class in Britain, 2003

34 *Contributed Session 11: CA methodology II*

Room: Athene, M1-19, Chair: Ludovic Lebart

14:00-14:25 *Giovanni Flebus*: An index to ascertain questionnaire response consistency based on the Guttman effect

14:25-14:50 *Joze Rován, Vilma Urbancic-Rovan, and M. Slak*: A new analytical insight into the screening procedures data

14:50-15:15 *Simona Balbi and Michelangelo Misuresa*: Choosing a proper metric for textual analysis

15:15-15:40 *Peter Graeff and Jörg Blasius*: Analyzing macro-sociological data by means of correspondence analysis and related methods

35 *Contributed Session 12: Geometric data analysis II*

Room: Rochester, M2-10, Chair: Henry Rouanet

14:00-14:25 *Lennart Rosenlund*: Structural homologies in the study of lifestyles and social differentiation - An exercise in geometric data analysis

14:25-14:50 *Ida Lidegran*: Educational trajectories in a region dominated by the academia

14:50-15:15 *Karin Darin*: Self-employment among social groups in the cultural industry in Sweden

15:15-15:40 *Viviane Le Hay, Jean Chiche, and Flora Chanvrlil*: The political space of the French electorate on the eve of the presidential elections (2007) - Geometric data analysis applied to the "Baromètre Politique Français"

36 *Keynote Speaker: Wayne DeSarbo*

Room: Athene, M1-19, Chair: Michael Greenacre



16:10-16:55 *Wayne DeSarbo, A. Selin Atalay, and David LeBaron: On the estimation of segment level multiple ideal points from context dependent dominance data*

- 37 Contact Address Local Organizers: Patrick J.F. Groenen, Econometric Institute, Erasmus University, Room H11.25, P.O. Box 1738, 3000 DR Rotterdam, The Netherlands
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## ABSTRACTS

In May 1991, a first correspondence analysis conference was organized in Cologne. Since then, three other such conferences have been organized and the Correspondence Analysis and Related Methods Network (CARME-N) has been established. The fifth conference took place in June 2007 in Rotterdam.

**CARME-N – Réseau d'analyse des correspondances et des méthodes associées - CARME 2007**  
: En mai 1991, une premier conférence sur les analyses des correspondances a eu lieu à Cologne. Depuis, trois autres conférences se sont déroulées et les organisateurs ont créé le Réseau d'analyse des correspondances et des méthodes associées (CARME-N). La cinquième conférence s'est tenue en juin 2007 à Rotterdam aux Pays-Bas.

## INDEX

**Keywords:** CARME-N, Conferences, Correspondence Analysis

**Mots-clés:** Analyse des correspondances, CARME-N, Conférences

## AUTHORS

**JÖRG BLASIUS**

Bonn, [jblasius@uni-bonn.de](mailto:jblasius@uni-bonn.de)

**MICHAEL GREENACRE**

Barcelona, [michael.greenacre@gmail.com](mailto:michael.greenacre@gmail.com)

**PATRICK GROENEN**

Rotterdam, [groenen@few.eur.nl](mailto:groenen@few.eur.nl)

**MICHEL VAN DE VELDEN**

Rotterdam, [vandevelden@few.eur.nl](mailto:vandevelden@few.eur.nl)