

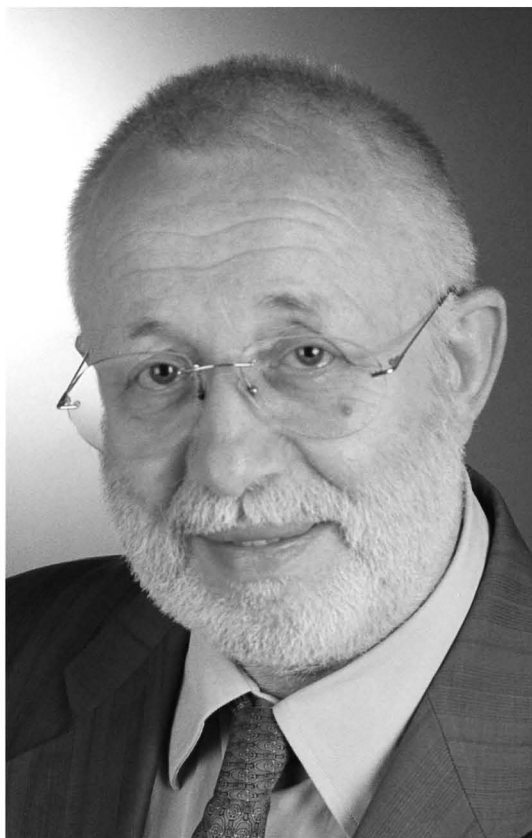
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Wolfgang Gaul

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Data Analysis and Decision Support

Foreword by Shizuhiko Nishisato

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Foreword

It is a great privilege and pleasure to write a foreword for a book honoring Wolfgang Gaul on the occasion of his sixtieth birthday. Wolfgang Gaul is currently Professor of Business Administration and Management Science and the Head of the Institute of Decision Theory and Management Science, Faculty of Economics, University of Karlsruhe (TH), Germany. He is, by any measure, one of the most distinguished and eminent scholars in the world today.

Wolfgang Gaul has been instrumental in numerous leading research initiatives and has achieved an unprecedented level of success in facilitating communication among researchers in diverse disciplines from around the world. A particularly remarkable and unique aspect of his work is that he has been a leading scholar in such diverse areas of research as graph theory and network models, reliability theory, stochastic optimization, operations research, probability theory, sampling theory, cluster analysis, scaling and multivariate data analysis. His activities have been directed not only at these and other theoretical topics, but also at applications of statistical and mathematical tools to a multitude of important problems in computer science (e.g., web-mining), business research (e.g., market segmentation), management science (e.g., decision support systems) and behavioral sciences (e.g., preference measurement and data mining). All of his endeavors have been accomplished at the highest level of professional excellence.

Wolfgang Gaul's distinguished contributions are reflected through more than 150 journal papers and three well-known books, as well as 17 edited books. This considerable number of edited books reflects his special ability to organize national and international conferences, and his skill and dedication in successfully providing research outputs with efficient vehicles of dissemination. His talents in this regard are second to none. His singular commitment is also reflected by his contributions as President of the German Classification Society, and as a member of boards of directors and trustees of numerous organizations and editorial boards. For these contributions, the scientific community owes him a profound debt of gratitude.

Wolfgang Gaul's impact on research has been felt in the lives of many researchers in many fields in many countries. The editors of this book, Daniel Baier, Reinhold Decker and Lars Schmidt-Thieme, are distinguished former students of Wolfgang Gaul, whom I had the pleasure of knowing when they were hard-working students under his caring supervision and guidance. This book is a fitting tribute to Wolfgang Gaul's outstanding research career, for

it is a collection of contributions by those who have been fortunate enough to know him personally and who admire him wholeheartedly as a person, teacher, mentor, and friend.

A glimpse of the content of the book shows two groups of papers, data analysis and decision support. The first section starts with symbolic data analysis, and then moves to such topics as cluster analysis, asymmetric multidimensional scaling, unfolding analysis, multidimensional data analysis, aggregation of ordinal judgments, neural nets, pattern analysis, Markov process, confidence intervals and ANOVA models with generalized inverses. The second section covers a wide range of papers related to decision support systems, including a long-term strategy for an urban transport system, loyalty programs, heuristic bundling, E-commerce, QFD and conjoint analysis, equity analysis, OR methods for risk management and German business cycles. This book showcases the tip of the iceberg of Wolfgang Gaul's influence and impact on a wide range of research. The editors' dedicated work in publishing this book is now amply rewarded.

Finally, a personal note. No matter what conferences one attends, Wolfgang Gaul always seems to be there, carrying a very heavy load of papers, transparencies, and a computer. He is always involved, always available, and always ready to share his knowledge and expertise. Fortunately, he is also highly organized - an important ingredient of his remarkable success and productivity. I am honoured indeed to be his colleague and friend.

Good teachers are those who can teach something important in life, and Wolfgang Gaul is certainly one of them. I hope that this book gives him some satisfaction, knowing that we all have learned a great deal from our association with him.

Toronto, Canada, April 2005

Shizuhiko Nishisato

Preface

This year, in July, Wolfgang Gaul will celebrate his 60th birthday. He is Professor of Business Administration and Management Science and one of the Heads of the Institute of Decision Theory and Management Science at the Faculty of Economics, University of Karlsruhe (TH), Germany. He received his Ph.D. and Habilitation in mathematics from the University of Bonn in 1974 and 1980 respectively.

For more than 35 years, he has been an active researcher at the interface between

- mathematics, operations research, and statistics,
- computer science, as well as
- management science and marketing

with an emphasis on data analysis and decision support related topics.

His publications and research interests include work in areas such as

- graph theory and network models, reliability theory, optimization, stochastic optimization, operations research, probability theory, statistics, sampling theory, and data analysis (*from a more theoretical point of view*) as well as
- applications of computer science, operations research, and management science, e.g., in marketing, market research and consumer behavior, product management, international marketing and management, innovation and entrepreneurship, pre-test and test market modelling, computer-assisted marketing and decision support, knowledge-based approaches for marketing, data and web mining, e-business, and recommender systems (*from a more application-oriented point of view*).

His work has been published in numerous journals like Annals of Operations Research, Applied Stochastic Models and Data Analysis, Behaviormetrika, Decision Support Systems, International Journal of Research in Marketing, Journal of Business Research, Journal of Classification, Journal of Econometrics, Journal of Information and Optimization Sciences, Journal of Marketing Research, Marketing ZFP, Methods of Operations Research, Zeitschrift für Betriebswirtschaft, Zeitschrift für betriebswirtschaftliche Forschung as well as in numerous refereed proceedings volumes.

His books on computer-assisted marketing and decision support – e.g. the well-known and wide-spread book “Computergestütztes Marketing” (published 1990 together with Martin Both) – imply early visions of the nowadays ubiquitous availability and usage of information-, model-, and knowledge-oriented decision aids for marketing managers. Equipped with a profound

mathematical background and a high degree of commitment to his research topics, Wolfgang Gaul has strongly contributed in transforming marketing and marketing research into a data-, model-, and decision-oriented quantitative discipline.

Wolfgang Gaul was one of the presidents of the German Classification Society GfKl (Gesellschaft für Klassifikation) and chaired the program committee of numerous international conferences. He is one of the managing editors of “Studies in Classification, Data Analysis, and Knowledge Organization”, a series which aims at bringing together interdisciplinary research from different scientific areas in which the need for handling data problems and for providing decision support has been recognized. Furthermore, he was a scientific principal of comprehensive DFG projects on marketing and data analysis.

Last but not least Wolfgang Gaul has positively influenced the research interests and careers of many students. Three of them have decided to honor his merits with respect to data analysis and decision support by inviting colleagues and friends of him to provide a paper for this “Festschrift” and were delighted – but not surprised – about the positive reactions and the high number and quality of articles received.

The present volume is organized into two parts which try to reflect the research topics of Wolfgang Gaul: a more theoretical part on “Data Analysis” and a more application-oriented part on “Decision Support”. Within these parts contributions are listed in alphabetical order with respect to the authors’ names.

All authors send their congratulations

“Happy birthday, Wolfgang Gaul”

and hope that he will be as active in his and our research fields of interest in the future as he had been in the past.

Finally, the editors would like to cordially thank Dr. Alexandra Rese for her excellent work in preparing this volume, all authors for their cooperation during the editing process, as well as Dr. Martina Bihn and Christiane Beisel from Springer-Verlag for their help concerning all aspects of publication.

Cottbus, Bielefeld, Freiburg
April 2005

*Daniel Baier
Reinhold Decker
Lars Schmidt-Thieme*

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Part I

Data Analysis