

## Preface

This book is a guide for empirical research on nonverbal behaviour. It focuses on investigating body movement and gesture as a reflection of cognitive, emotional, and interactive processes.

The title "Understanding body movement" is a testimonial to Martha Davis who has introduced with her bibliography of the same title a truly interdisciplinary approach to the field of movement behaviour research. Since research on movement behaviour and its relation to cognitive, emotional, and interactive processes is spread over numerous different scientific disciplines, such as medicine, psychology, linguistics, anthropology, social sciences, sports science, and dance movement therapy, the methods presented in this book are grounded on an interdisciplinary review. This included numerous discussions with colleagues from different disciplines, notably Martha Davis, Robyn Flaum Cruz, Sotaro Kita, Miriam Roskild Berger, Norbert Freedman, Georg Goldenberg, Alain Ptito, Eran Zaidel, Joachim Hermsdörfer, Cornelia Müller, Ellen Fricke, Katja Liebal, Mandana Seyfeddinipur, Marianne Eberhard-Kaechele, Peter Joraschky, Angela v. Arnim, Jörn von Wietersheim, Frank Röhrich, Lothar Stemwedel, the contributors of this book, and many other colleagues and students. Based on this broad approach, hopefully, this guide will be useful for researchers from many disciplines.

The book starts with an overview on movement behaviour analysis across different scientific disciplines. Relevant empirical findings on the relation between movement behaviour and cognitive, emotional, and interactive processes are outlined and different methodological approaches are presented. Part II introduces the NEUROGES coding system for movement behaviour and gesture as a comprehensive, objective, and reliable tool. The system is designed for basic research to explore the anatomy of movement behaviour and its relation to cognitive, emotional, and interactive processes. Part III presents the annotation tool ELAN that enables to create complex annotations on video and audio resources. Included is a step-by-step instruction for its practical application in combination with the NEUROGES coding system. Part IV provides recommendations for experimental designs to obtain data on movement behaviour. Specifically, the impact of experimental designs on movement behaviour is discussed. Part V is dedicated to the topic of interrater agreement in movement behaviour analysis. Recommendations for rater training and rating procedures in empirical research are given. Notably, a novel algorithm is presented that enables to calculate the interrater agreement not only for the annotations but also for the segmentation of the ongoing flow of movement behaviour. Part VI provides guidelines for the statistical evaluation and for the presentation of behavioural data. Included here are innovative procedures to statistically assess the between-subjects dimension of interactive partners' body movements. While most of the chapters illustrate the methods with reference

to hand movements, most of the presented principles are valid for the analysis of nonverbal behaviour in general.

Finally, I wish to express my gratitude to Corinna Klabunde for proofreading and formatting the book, and for compiling innumerable references. Furthermore, I want to thank the Peter Lang Publishing Group for their patience during the long-term development of this book and the German Research Association for supporting the NEUROGES project from 1999 - 2013 (DFG: LA 1249/1-1, 1-2, 1-3).

Cologne, August 2013

Hedda Lausberg