

# Preface

We begin with a bald definition: An intensive longitudinal study is one with enough repeated measurements to model a distinct change process for each individual. By this definition, intensive longitudinal data can be laboratory-based measures of physiology or brain activation as well as field-based, ambulatory measures of affect, physiology, or behavior. Our focus in this book, however, is on using these methods to understand people's thoughts, feelings, and behaviors *in situ*. Used in this way, intensive longitudinal methods represent a core research strategy that both contrasts with and complements traditional laboratory experiments. Although laboratory experiments excel in testing causal hypotheses, intensive longitudinal field methods are essential for determining whether particular causal processes actually occur in real-world settings. We believe that an adequate understanding of human behavior requires both approaches.

Our desire to promote the use of these methods has been tempered, however, by the many hurdles we have experienced over the years in working with intensive longitudinal data. In fact, this is the book we would have liked to have had when we began this work, in the mid-1980s to 1990s. At that time, there was a lot of uncertainty about fundamentals such as design, measurement, data analysis, and power. In the intervening years, there have been so many important developments that it has now been possible to produce a comprehensive *Handbook of Research Methods for Studying Daily Life* (Mehl & Conner, 2012).

Our book is intended to complement this handbook. Whereas the handbook is wide-ranging and reviews findings in specific fields (e.g., health psychology, organizational psychology), our book provides in-depth coverage of two central issues: research design and data analysis. We intend it to be a practical how-to book written by researchers for researchers. Such methods books can sometimes gloss over important technical or statistical issues, but one must weigh this concern against the danger that an overly formal and abstract treatment will be useless to practicing researchers. Our hope is that we have succeeded in combining rigor with accessibility, but whether we have or not is, of course, for others to judge.

We assume that our readers are researchers who have collected or are planning to collect intensive longitudinal data, including researchers in training such as graduate students and postdoctoral fellows. Although many of the data examples we use are from social and clinical psychology, our hope is that the book will be useful to researchers across the behavioral and social sciences, including those in communication, health, business, and policy domains.

In our experience, the best way to learn a statistical method is to work with an example dataset, and most of the chapters are constructed around specific datasets and analyses. For three of the data chapters (Chapters 4, 5, and 8) we also include example write-ups of results, as one might prepare them for a manuscript to be published as a journal article. We encourage readers to download these datasets and syntax files from the website for our book ([www.intensivelongitudinal.com](http://www.intensivelongitudinal.com)) and try the analyses themselves.

There is a variety of software that can be used to analyze intensive longitudinal data. In the book we present syntax and output files for SPSS, SAS, and Mplus. These can also be found on our website, including equivalent syntax and output files for R, HLM, and Stata. Also on the website are links to facilitate any comments or corrections readers would like to bring to our attention. We would very much welcome the feedback.