

Appendix A: Overview of Multilevel Modeling Texts and Suggested Readings

My book!

Hoffman, L. (November, 2014). *Longitudinal analysis: Modeling within-person fluctuation and change*. Forthcoming from Routledge Press (Taylor & Francis).

These texts cover multilevel modeling within the context of clustered (nested) observations primarily. They are ordered in terms of my opinion of their accessibility (most to least).

Kreft, I., & de Leeuw, J. (1998). *Introducing multilevel modeling*. Thousand Oaks, CA: Sage.

Heck, R. H., & Thomas, S. L. (2008). *An introduction to multilevel modeling techniques* (2nd ed.). New York: Routledge

Hox, J. J. (2010). *Multilevel analysis: Techniques and applications* (2nd ed.). New York: Routledge.

Snijders, T. A. B., & Bosker, R. (2011 2nd ed.). *Multilevel analysis: An introduction to basic and advanced multilevel modeling*. Thousand Oaks, CA: Sage.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd Ed.). Thousand Oaks, CA: Sage.

These texts cover multilevel modeling within the context of longitudinal observations primarily. They are ordered in terms of my opinion of their accessibility (most to least).

Singer, J. D., & Willett, J. B. (2003). *Applied longitudinal data analysis: Modeling change and event occurrence*. New York: Oxford University Press.

Fitzmaurice, G., Laird, N. M., & Ware, J. H. (2004). *Applied longitudinal analysis*. New York: Wiley.

Hedeker, D., & Gibbons, R. D. (2006). *Longitudinal data analysis*. New York: Wiley.

Verbeke, G., & Molenberghs, G. (2001). *Linear mixed models for longitudinal data*. New York: Springer-Verlag.

These texts cover longitudinal models within the context of structural equation modeling.

Preacher, K. J., Wichman, A. L., MacCallum, R. C., & Briggs, N. E. (2008). *Latent growth curve modeling. Quantitative applications in the social sciences, #157*. Thousand Oaks, CA: Sage.

Bollen, K. A., & Curran, P. J. (2005). *Latent curve models: A structural equation perspective*. New York: Wiley.

Duncan, T. E., Duncan, S. C., Strycker, L. A., Li, F., & Alpert, A. (1999). *An introduction to latent variable growth curve modeling: Concepts, issues, and applications*. Mahwah, NJ: Erlbaum.

The latter chapters in this ANOVA text introduce MLM from the ANOVA perspective.

Maxwell, S. E., & Delaney, H. D. (2004). *Designing experiments and analyzing data*. Mahwah, NJ: Erlbaum.

Suggested Readings by Topic

Lecture 1. Introduction to MLM

- Snijders & Bosker ch. 1-2
- Singer & Willett ch. 1-2
- Raudenbush & Bryk ch. 2
- Hoffman ch. 1

Lecture 1. Review of General Linear Models and Repeated Measures ANOVA

- Hedeker & Gibbons ch. 1-3
- Fitzmaurice, Laird, & Ware ch. 5-6
- Maxwell & Delaney ch. 12-14
- Hoffman ch. 2-3

Lecture 2. Alternative Covariance Structure Models

- Singer & Willett ch. 7
- Snijders & Bosker ch. 15
- Fitzmaurice, Laird, & Ware ch. 7
- Hedeker & Gibbons ch. 6-7
- Maxwell & Delaney ch. 15
- Hoffman ch. 4

Lecture 3. Fixed vs. Random Effects of Time

- Singer & Willett ch. 3-4
- Hedeker & Gibbons ch. 4
- Fitzmaurice, Laird, & Ware ch. 7-8
- Snijders & Bosker ch. 12
- Hox ch. 5
- Raudenbush & Bryk ch. 6
- Hoffman ch. 5

Lecture 3. Fun with Model Comparisons and Likelihood Estimation

- Singer & Willett ch. 4
- Snijders & Bosker ch. 6-7
- Raudenbush & Bryk ch. 3
- Hox ch. 3
- Verbeke & Molenberghs ch. 5-6
- Hoffman ch. 3 and 5

Lecture 3. Polynomial, Piecewise (Spline), and Nonlinear Random Effects Models

- Singer & Willett ch. 6
- Raudenbush & Bryk ch. 6
- Hoffman ch. 6

Lecture 4. Time-Invariant Predictors**Lecture 6. Time-Varying Predictors of WP Fluctuation and Centering Decisions**

- Hoffman, L., & Stawski, R. (2009). Persons as contexts: Evaluating between-person and within-person effects in longitudinal analysis. *Research in Human Development*, 6(2-3), 97-100. Available at: <http://digitalcommons.unl.edu/psychfacpub/415/>.
- Lüdtke, O., Marsh, H. W., Robitzsch, A., Trautwein, U., Asparouhov, T., & Muthén, B. (2008). The multilevel latent covariate model: A new, more reliable approach to group-level effects in contextual studies. *Psychological Methods*, 13(3), 203-229.
- Snijders & Bosker ch. 3-5
- Raudenbush & Bryk ch. 5
- Fitzmaurice, Laird, & Ware ch. 15
- Hedeker & Gibbons ch. 4
- Hoffman ch. 7-8

Lecture 5. Generalized Multilevel Models

- Bauer, D. J. (2009). A note on comparing the estimates of models for cluster-correlated or longitudinal data with binary or ordinal outcomes. *Psychometrika*, 74, 97-105.
- Hox ch. 6-8
- Fitzmaurice, Laird, & Ware ch. 10, 12
- Hedeker & Gibbons ch. 9-12
- Snijders & Bosker ch. 17
- Raudenbush & Bryk ch. 10
- Hoffman ch. 13

Lecture 7. Multivariate Longitudinal Models and Time-Varying Predictors of Change

- Snijders & Bosker ch. 17
- Hox ch. 10
- MacCallum, R. C., Kim, C., Malarkey, W. B., & Kiecolt-Glaser, J. K. (1997). Studying multivariate change using multilevel models and latent curve models. *Multivariate Behavioral Research*, 32(3), 215-253.
- Raudenbush, S.W., Brennan, R.T., & Barnett, R.C. (1995). A multivariate hierarchical model for studying psychological change within married couples. *Journal of Family Psychology*, 9(2), 161-174.
- Hoffman ch. 9

Lecture 8. Three-Level Longitudinal Models

- Raudenbush & Bryk ch. 5, 8
- Snijders & Bosker ch. 4-5
- Hedeker & Gibbons ch. 13
- Hoffman ch. 10-11