Series Editor's Note

Although latent variable modeling provides an amazingly powerful set of modeling tools, it isn't a panacea for bad measurement. Measurement is the bedrock of any statistical modeling endeavor. As E. L. Thorndike once said back in 1918, "Whatever exists at all exists in some amount. To know it thoroughly involves knowing its quantity as well as its quality." Here, item response theory (IRT) is one of the essential tools to probe the inherent meaning of responses when items are categorical in nature and glean the underlying latent trait score of the respondents.

de Ayala's second edition brings so much added value to what was already a go-to resource for learning the foundations of IRT. His approach is not a cookbook of "what" to do, but instead his focus is on "how" to utilize the various tools from the world of IRT with the right amount of detail to know "why." In the body of each chapter, you'll find the practical guidance needed and how to implement and interpret IRT-based models. The new material provides accessible technical details for understanding how the engine under the hood of an IRT model actually works. The family of IRT models and their variety of options are brought to you across a well-chosen set of software platforms, from free (e.g., R-based packages such as lme4, mirt, and mixRasch) to proprietary (e.g., SAS, SPSS, and flexMIRT). In fact, each chapter contains both R and non-R software examples!

The utility of IRT modeling goes well beyond its roots in educational measurement. de Ayala does a wonderful job of using general terminology that broadens the practical reach and impact that IRT modeling can have for researchers across the spectrum of the social and behavioral sciences. Core ideas such as measurement equating and measurement equivalence are discussed with an eye to the myriad research applications where IRT-based models are needed (e.g., item banking, test equating, certification exams, adaptive testing, protocol development). His model data-fit approach ties the statistical machinery with practical need, which yields a refreshingly comprehensive yet accessible coverage of all IRT models, from established (e.g., Rausch) to cutting edge (e.g., multilevel IRT, which is new to this edition). Examples don't bounce around, so you can focus on what each model can reveal and understand how to interpret the results.

With de Ayala's rich resource as your guide, you'll be at the forefront of best practices in IRT modeling.

With the measurement precision that IRT provides, your research will become unequivocally better.

With better research come answers that truly impact the policies and practices in arenas spanning public health, behavioral sciences, social sciences, and, of course, education.

As always, enjoy! You'll be gratified with de Ayala's guide to all things IRT.

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Taking a break to go fishing
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