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**Review: The Measure of Psychometrics DENNY BORSBOOM, Measuring the Mind: Conceptual Issues in Contemporary Psychometrics. Cambridge: Cambridge University Press, 2005. 185 pp. ISBN 13 978 0 521 84463 0 (hbk)**

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student identities, even their identities in the classroom, of course, depend on their lives in other places too. This could be illuminated by looking at their practices across places and not only across time. Doing so might also give more practical grounding to some of the stuff of social practice that Wortham can now only introduce in the guise of models.

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### The Measure of Psychometrics

DENNY BORSBOOM, *Measuring the Mind: Conceptual Issues in Contemporary Psychometrics*. Cambridge: Cambridge University Press, 2005. 185 pp. ISBN 13 978-0-521-84463-0 (hbk).

Psychometrics is an important sub-discipline. It not only sustains a significant psycho-technology, it also leads social science on its Pythagorean quest. It is therefore strange that, unlike behaviourism or psychoanalysis, it has eluded critical, conceptual scrutiny. Perhaps its foundations seemed secure. This book scuttles that illusion and deftly exposes its soft underbelly.

Borsboom analyses classical test theory (as per Lord & Novick, 1968), latent variable theories, and representational measurement theory (as per Krantz, Luce, Suppes, & Tversky, 1971). Then he examines relations between these, and, finally, the concept of validity. The exposition is not mathematical, and any interested reader could digest the lot. His arguments are mostly well thought through and his direct style leads the reader, with precision and sometimes humour, into selected conceptual problems involving these theories. The book's value resides not so much in delivering definitive answers, as in raising questions too long ignored.

The analysis of classical test theory is sure-footed. This theory is the staple of psychometrics courses and tests are still generally marketed using its concepts, such as *reliability*. It tried to marry the theory of errors, as developed by Gauss (1995), among others, to psychological testing, but these were always a couple matched in hell. The conceptual contortions that the theory of errors was put through to produce classical test theory as per Lord and Novick (1968) have rendered it devoid of empirical content. Borsboom does not trace the journey from Yule and Spearman (Spearman, 1910) to this destination, which, had he done so, might have moderated his identification of this theory with operationism. Yule and Spearman thought of it in realist terms, and even as late as the 1960s there still were attempts to understand it realistically. Nonetheless, Borsboom's penetrating analysis should be required reading in test theory courses.

The chapter on latent variable theories is equally penetrating. Now the flavour of the month amongst the *cognoscenti*, Borsboom approves of these theories because, first, they explicitly represent the measured attribute as a latent trait and, second, they involve probabilistic hypotheses linking it and expected responses to test items. The first feature makes them 'realist' theories of measurement, thinks Borsboom, and the second gives them a fighting chance of fitting error-laden response data. However, his enthusiasm is tested when his analysis rejects a 'within-subject causal account' of these theories in favour of a 'between-subjects' one. The former would treat the latent trait

as a property of individuals, surely the natural interpretation for anyone who thinks of, say, Spearman's  $g$  as a property. The latter treats the latent trait as an emergent property of populations of individuals, possibly suberved by quite different intrinsic properties even in people measured as having equivalent amounts of the trait. So, if you and Borsboom have the same level of  $g$ , for example, it does not follow that you are identical in any intrinsic way. You are only members of the same population. This leads Borsboom to conclude that 'if one takes the position that measurement can apply to sources of variation in a population, without applying directly to the individuals that make up this population, then latent variable theory does not necessarily disqualify as a theory of measurement' (p. 84). Some might think this too narrow a gate for the entry of any theory into science, especially one sustaining a technology unfortunately only measured out to individuals and never to populations without the individuals. This chapter is excellent and may even go some way towards blunting enthusiasm for these models.

I have reservations about Borsboom's analysis of representational theory. Its only virtue is in displaying some of the bad reasons why psychometricians ignore it. Stevens (1951) convinced psychologists that measurement is numerical representation, but Suppes, Luce, Krantz, and Tversky (Krantz et al., 1971; Luce, Krantz, Suppes, & Tversky, 1990; Suppes, Krantz, Luce, & Tversky, 1989) presented the most rigorous version of this view. While most test theorists ignore it, Borsboom's claim that 'not a soul uses [it] in the practice of psychological measurement' (p. 86) only reflects the one-eyed view that psychological testing *is* the practice of psychological measurement. However, his principal misunderstanding is thinking that in measurement numbers are intended to represent *raw data*. Properly understood, representational theory is that numbers represent *theoretical structures*, for example infinitely complex quantitative structures or the structure of ideal, infinite datasets. According to Borsboom, representational 'theory has a hard time dealing with the problem of error' (p. 106) and therefore we need 'a statistical formulation of representational measurement theory' (pp. 106–107). However, this theory actually displays kinds of structures that might lie behind raw, psychometric data—if there is anything measurable there at all. Quantitative science has always used idealizations, such as the laws of Galileo and Newton, because the aim of science is not always to account for data, warts and all, but is sometimes to describe nature's hidden contours. If you want laws to capture hidden structures, then you don't necessarily want them to model 'errors' in data. You might, instead, want to sift data for signs of structure. With psychometric data, signs of quantitative structure were never compelling, which may explain why representational theory is neglected. Like medieval alchemists, psychometricians would rather conjure fool's gold from the base metal of error.

Just as Borsboom forced a link between classical test theory and operationism, and between latent variable theories and realism, so he connects representational theory to logical positivism. While one can find traces of logical positivism in representationism, as an approach to measurement it predates logical positivism and has always had realist proponents. Logical positivism infused thinking in psychology with such a vengeance that many who now use 'positivism' as a derogatory label often unwittingly still treasure its cryptic doctrines. The discerning reader will hear positivist echoes in Borsboom's claims that approaches to measurement are neither true nor false (p. 5), that scientific theories should account for data (warts and all; p. 88), and that methodology is always normative (p. 87).

Borsboom's chapter on validity makes more sense than just about everything else written on the subject, but I have reservations about the understanding of measurement informing it. He sees measurement as an intrinsically causal concept in which variations in the attribute measured cause systematic variations in the outcome of the procedure (generally, item performances in psychometrics). This does not distinguish measurement from cognition generally, and it misses the main point of measurement, which is to get to know about *quantitative* attributes. For all Borsboom's valuable words regarding the need for substantive theorizing, there is no discussion of what distinguishes *quantitative* from merely *ordered* or *categorical* attributes, or why this is important in science. This is an opportunity lost, no doubt in part because that old arch-positivist Stevens (1951) taught us to group them all together under the one umbrella of numerical representation.

Other readers will find different matters to reflect upon and, perhaps, disagree with as they read this stimulating book, which is a minefield of provocative ideas, and they will find it hard, in the end, not to come away agreeing that 'large parts of the psychological community are involved in self-deception' (p. 47). It is a valuable contribution to clear thinking in psychology.

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## ‘Therapizing’ Ourselves to Death? Challenging Therapeutics and the Discourse of Emotional Determinism

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FRANK FUREDI, *Therapy Culture: Cultivating Vulnerability in an Uncertain Age*. New York: Routledge, 2004. 245 pp. ISBN 0-415-32159-X (pbk).

*Therapy Culture* continues a vital tradition of social critique. If the 1980s were the age of amusement, anti-intellectual distraction, and *variété*-style public discourse (Postman, 1984), the 1990s represent an age that deals with some of the fallout of