

Consequences, Side Effects and the Ecology of Testing: Keys to Considering Assessment *In Vivo*

Professor Bruno D. Zumbo, University of British Columbia

Summary

Ultimately, measures in research, testing, assessment, and evaluation are used, or have implications, for ranking, intervention, feedback, decision-making, or policy purposes. Explicit recognition of this fact brings the often-ignored and sometimes maligned concepts of consequences (Zumbo, 2009) as well as the ecology of testing (Zumbo et al. 2015) to the fore. Given that measures have personal and social consequences and impact, it becomes important to evaluate the intended consequences and unintended side effects of measurement when validating the inferences and uses made from tests. Furthermore, one is pressed to consider assessment as something *in vivo* rather than *in vitro*. Doing so necessitates an ecological model of item responding and test performance. The purpose of this presentation is to apply Hubley and Zumbo's (2011) recently developed integrated framework of validity and validation to the matter of consequences of educational test use with an eye to matters of social justice. The Hubley-Zumbo integrated framework for test validation expands on the concept of consequences while also situating them in their proper place relative to other types of validity evidence. Intended consequences and unintended side effects become but one of many different forms of evidence that can be presented when evaluating the interpretation and use of test scores. The Hubley-Zumbo framework will be presented along side a newly developed ecological model of item responding and assessment (Zumbo et al, 2015) that is clearly influenced by ecological systems theory (e.g., Bronfenbrenner, 1979). The ecology of item responding, as Zumbo and Gelin (2005) note, allows the researcher to focus on sociological, structural, community, and contextual variables, as well as psychological and cognitive factors, as explanatory sources of item responding and test performance. By presenting the new frameworks and discussing several educational testing cases and contexts, we will illustrate why it is important that consequences and ecology be considered a part of validity and validation and hence key elements in assessment. We argue that it is helpful to use different terms to distinguish between consequences that are intended and those (side effects) that are not. Furthermore, we argue that it is useful to consider personal consequences and side effects and not just social ones alone, thus highlighting what we may refer to as off-label test use.

Biographical Statement:

Professor Zumbo is an internationally renowned research methodologist, measurement theorist, and applied statistician/mathematician. Over the last 25 years his program of research has emerged to have broad interdisciplinary impact and is noted for his having addressed cross-disciplinary recurring controversial topics such as theories of measurement validity and measurement invariance. His contributions to these debates have highlighted his orientation from philosophy of science, scientific methodology, and the intersection of mathematics, measurement and statistical science. He is Professor of Measurement, Evaluation, and Research Methodology with additional appointments in the Department of Statistics and the Institute of Applied Mathematics at the University of British Columbia (UBC). Among his recognitions are Fellow of the American Educational Research Association; Recipient of the Samuel Messick Award; Research Fellow Award of the International Society for Quality of Life Studies, ISQOLS; and Research Fellow of the Social Sciences and Humanities Research Council of Canada, as well as having won university-wide teaching awards at the University of Northern British Columbia in 1998 and the University of British Columbia Killam Teaching in 2011 - 2012. Please see <http://faculty.educ.ubc.ca/zumbo/cv.htm> for a detailed list of his research.