Wiener Biometrische Sektion (WBS)
der Internationalen Biometrischen Gesellschaft
Region Österreich – Schweiz (ROeS)
http://www.meduniwien.ac.at/wbs/
WBS Workshop

WORKSHOP WITH TYLER VANDERWEELE

When: Monday, April 4th 2016, 11-16.30
Where: Jugendstilhörsaal der Medizinischen Universität Wien,
Bauteil 88 – Ebene 2, Spitalgasse 23, 1090 Wien
http://cemsiis.meduniwien.ac.at/allgemeines/anschrift/

AGENDA

Presentation and Discussion:	**Tyler VanderWeele** Harvard School of Public Health
11.00-12.15 (Jugendstilhörsaal 88.02)	Lecture: A unification of mediation and interaction: a four-way decomposition (see abstract below)
12.15-14.30	Break
14.30-16.30 (Informatikbibliothek 88.03.806)	Q&A session: Confounding and variable selection
Chair:	*Georg Heinze* *Section for Clinical Biometrics*

Registration for attendance of Q&A session (free): Due to limited places we would kindly ask you to register in advance. Please send an email expressing your interest in joining the Q&A session to biometrie@meduniwien.ac.at till 28.3.2016

Please feel free to distribute the announcement to colleagues. The WBS runs a mailing list for announcing talks in the field of biostatistics. For subscription to the mailing list, send an e-mail to stephan.lehr@ages.at

Abstract

A unification of mediation and interaction: a four-way decomposition

Tyler VanderWeele
Professor of Epidemiology
Harvard School of Public Health, Boston MA, USA
http://www.hsph.harvard.edu/tyler-vanderweele/

The overall effect of an exposure on an outcome, in the presence of amediator with which the exposure may interact, can be decomposed into 4 components: (1) the effect of the exposure in the absence of the mediator, (2) the interactive effect when the mediator is left to what it would be in the absence of exposure, (3) a mediated interaction, and (4) a pure mediated effect. These 4 components, respectively, correspond to the portion of the effect that is due to neither mediation nor interaction, to just interaction (but not mediation), to both mediation and interaction, and to just mediation (but not interaction). This 4-way decomposition unites methods that attribute effects to interactions and methods that assess mediation. Certain combinations of these 4 components correspond to measures for mediation, whereas other combinations correspond to measures of interaction previously proposed in the literature. Prior decompositions in the literature are in essence special cases of this 4-way decomposition. The 4-way decomposition can be carried out using standard statistical models, and software is provided to estimate each of the 4 components. The 4-way decomposition provides maximum insight into how much of an effect is mediated, how much is due to interaction, how much is due to both mediation and interaction together, and how much is due to neither. The approach is applied to two examples in genetic epidemiology.

Tyler VanderWeele, PhD, is Professor of Epidemiology at Harvard T. C. Chan School of Public Health, Boston, MA, USA. His methodologic research concerns the distinction between association and causation in the biomedical and social sciences and the study of the mechanisms by which causal effects arise. The current focus of his work includes the analysis of pathways, assessments of interaction, and the evaluation of network and spillover effects in which one person's exposure will affect the outcomes of another. His research employs counterfactual theory and ideas from causal inference to clarify and formalize concepts used by epidemiologists, biomedical researchers and social scientists. *Source: http://www.hsph.harvard.edu/tyler-vanderweele/*