Postdoc position in behavioral data analysis: Dealing with multiple mediators in causal mediation analysis

Responsible:
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Mediation analyses are used on a wide scale to infer causal mechanisms in behavioral sciences by decomposing the effect of an exposure (e.g. therapy) on an outcome (e.g. depression) into a direct causal effect and an effect that runs through a mediating variable (e.g. rumination). Mediation analyses frequently involve more than one mediator. Although methods for mediation analysis with multiple mediators are widely available, recent developments in the causal inference literature have demonstrated that these approaches are only valid under very strong, implicit assumptions, and even invalid when the mediators and/or outcome obey nonlinear models.

In this project, the aim is to make progress in the multiple mediator setting by building on new conceptual definitions of direct and indirect effects and the development of accompanying estimation procedures. The focus will be on settings where mediators are strongly related, because they are representations of a repeatedly measured mediator or manifestations of an underlying latent process. The project will be driven by realistic problems in behavioral sciences that involve mediation.

The project also entails the development of open software to make the newly developed procedures easily accessible. This is essential with respect to valorisation as it ensures that the developed procedures can be readily used. Our research group has previously developed Medflex, an R package for flexible mediation analysis using natural effects models (Steen et al., 2015).

This project obtained a grant from the Research Foundation Flanders (FWO). The successful candidate will closely work with all three promoters of the project and will split her/his time between the two departments.

Candidate

The successful candidate will hold a PhD degree in Statistical Data Analysis (or related discipline) or in Psychology, Social Sciences or Public Health (with a strong focus on statistical research). She/he will be hosted within a dynamic group of researchers. She/he will be offered excellent training and development opportunities.

Duration: 36 months

Date of start: as soon as possible (negotiable but preferably before October 1st, 2017)

References

Steen, J., Loeys, T., Moerkerke, B., & Vansteelandt, S. (in press). Medflex: an R package for flexible mediation analysis using natural effects models. *Journal of Statistical Software.*

Please send your application (including a current CV, publication list, letter of recommendation and copies of diplomas and certificates) to Beatrijs Moerkerke. We encourage candidates to apply early. Applications received before **May 1, 2017** will be given full consideration. Applications received after **May 1, 2017** will be considered as they arrive, until the position is filled.

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