Time Series Design and Analysis for the Evaluation of Predictive Patterns in Psychopathology: An Intra-individual Approach

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The investigation of longitudinal, intra-individual processes in the field of psychology in general, and psychopathology in particular, is quite scarce. One of the reasons for this situation is the complexity of the consequent data analysis, which often requires analyst judgments and expertise, and the fact that such methods, those of Time Series analysis (TSA), ARIMA, impulse response functions (IRF) and state-space modeling are usually included in training programs in engineering and economics, but not psychology. These methods are also sometimes considered to be conservative, usually demanding data cleaning and pre-transformations that might conceal or diminish the effects. In this seminar we would like to address the use of such techniques in the field of psychology, while discussing the benefits and limitations of the approach as opposed to the standard cross sectional designs. We will demonstrate the use of TSA with findings from a recent research examining the predictive patterns between different components of anxiety and depression in three young adults, suffering from comorbid generalized anxiety (GAD) and major depression (MDD). These participants were followed daily for a period of 6 months, thereby allowing the analysis of change through time in affects, cognitions and symptoms related to anxiety and depression. Examination of the intra-individual predictive network which emerged from each participant suggests that cognition plays an important role in the anxiety-depression co-occurrence, yet also raises the possibility that causal networks vary on an individual basis. This, in turn, might point to the need to model dynamic psychological processes on a longitudinal scope.