

**Top down and bottom up processes are modified in individuals experiencing more “meaningful” coincidences.
An EEG-Based Study**

Christian Rominger, Andreas Fink, Elisabeth M. Weiss, Günter Schuler, Ilona Papousek
University of Graz, Department of Psychology, Biological Psychology Unit

The experience of meaningful coincidences is defined as "surprising concurrence of events, perceived as meaningfully related, with no apparent causal connection". It is linked to positive symptoms of schizotypy and schizophrenia. However, the ability to perceive contingency and causality is also considered important for learning. Empirical evidence indicated reduced top down control (proactive inhibition) as a possible mechanism for elevated experiences of meaningful coincidences. The aim of the present study was to examine whether the propensity to experience meaningful coincidences may not only be related to poor top down control but may also be associated with modified bottom up processes. N = 53 participants (26 men) were selected from a pool screened for positive schizotypy. The participants worked on the Recent Probes Task and the Forced Dichotic Listening Task while their EEG was recorded. The results indicated that participants who tend to perceive more coincidences showed poorer performance in the Recent Probes Task. Additionally, the propensity to perceive meaningful coincidences was associated with a higher right ear advantage in the forced-right condition of the Dichotic Listening Task. Most interestingly, amplitudes of early components of the event related potential in the Recent probes Task, were different between participants scoring high vs. low on experiences of meaningful coincidences. The results suggest that not only higher order top down processes but also bottom up processes are modified in individuals experiencing more meaningful coincidences.

Keywords

Meaningful coincidences, positive schizotypy, proactive inhibition

Contact details of the presenter

Christian Rominger, christian.rominger@uni-garz.at