

## **Stimulus Analysis and Response Organization in the CNV-paradigm**

### **An empirical test of the Brebner-Cooper model of extraversion with event-related potentials**

The dissertation deals with the question to what extent and under which conditions psychophysiological measures can be gainfully used to test physiologically oriented theories of personality. The Brebner-Cooper model of extraversion which is examined via event-related potentials (ERP) serves as an example. The challenges of this kind of research are explicitly elaborated: consistent linkage of psychological concepts with psychophysiological measures that is strictly conducted by theory; careful consideration of the functional significance and the highly complex eliciting conditions of physiological parameters in the context of the specific paradigm; extensive control of experimental and situational conditions.

The extraversion model by Brebner & Cooper (1985) ascribes behavioural differences between extraverts and introverts to differentially effective excitatory and inhibitory processes which are in causal connection to stimulus analysis and response organization in a specific situation. The empirical part of the dissertation describes two ERP experiments in which slow cortical potentials were used to examine the concepts and predictions of the model. Cortical activation and deactivation in response to varying requirements on stimulus analysis and response organization were represented in the *Contingent Negative Variation* (CNV). On the basis of theoretical as well as empirical arguments it was assumed that differences in stimulus analysis would be reflected in the *initial CNV* (iCNV), whereas differences in response organization would affect the *terminal CNV* (tCNV). The results confirm that the employment of psychophysiological methods for theory testing is only promising if the electrophysiological measures were strictly validated as qualified indicators for the relevant psychological constructs beforehand.

Brebner, J., & Cooper, C. (1985). A proposed unified model of extraversion. In J. T. Spence & C. E. Izard (Eds.), *Motivation, Emotion, and Personality*. (pp. 219-227). Amsterdam: Elsevier Science Publishers B. V.