

Speaker: Friedrich Lösel (Cambridge University (UK) and University of Erlangen-Nuremberg, Germany)

Presentation title: Resting and stress-induced heart rate and antisocial behaviour: A brief report of various studies from our German laboratory and field work

Co-authors: Doris Bender and Mark Stemmler (University of Erlangen-Nuremberg, Germany)

Low resting heart rate is a well-replicated biological correlate of criminal behaviour and antisocial development. Various meta-analyses showed significant relations, but the mean effect size seems to be small (Portnoy & Farrington, 2015: $d = 0.20$). In comparison to resting heart rate, very few studies addressed the relation between heart rate during a stressor and antisocial outcome. The meta-analysis of Ortiz and Raine (2004) revealed larger effects for stress-induced heart rates, however, this included only a few studies and it is yet unclear how much of the relation between heart rate and antisocial behaviour also depends on anxious/inhibited individuals in the samples who typically have a higher heart rate. We will present some of our findings from longitudinal studies among youth that measured stress-induced and/or resting heart rate. The results showed the following: a) in a follow up over two years, aggressive adolescents had lower resting and stress-induced heart rate than others, particularly when compared to those with anxious-withdrawn behaviour. However, these differences were only significant for aggressive youngsters from families with low social adversity. b) A follow-up of this sample over nine years revealed that stress-induced but not resting heart rate significantly predicted antisocial behaviour in young adulthood. c) A longitudinal study that followed children over ten years from early childhood to youth showed that resting heart rate was particularly low for the small group with a high-chronic trajectory of externalizing problem behaviour, but the relation was not significant and less substantial than for family factors, impulsivity and intelligence in early childhood. Overall, our findings support the criminological relevance of both resting and stress-induced heart rate. However, as in other criminological fields (Lösel, 2018), more differentiated longitudinal, person-oriented, and biosocial research is needed (Lösel & Bender, 2021).