NEW DIRECTIONS IN CRIMINOLOGICAL THEORY TESTING:
INNOVATIVE APPROACHES TO THEORY TESTING USING VIRTUAL AND AUGMENTED REALITY: ADVANCED RESEARCH AND ANALYTICAL METHODS

The Centre for Analytic Criminology is pleased to welcome Richard E. Niemeyer (U.S. Air Force Academy), Gabriela D. Roman and Beth Hardie to share theoretical, methodological, and analytical insights on the new and expanding domain of research using virtual and augmented reality and its application to criminological theory testing. In this panel we will discuss challenges in testing casual mechanisms – the processes through which outcomes, such as crime, are brought about – and how these novel methods and technologies can enhance our ability to look inside the black box for answers not just to *who*, *where,* and *when*, but crucially to *how* and *why*.

An analytic approach to addressing key challenges when testing situational mechanisms: Acknowledging assumptions and identifying testable implications

Kyle Treiber & Beth Hardie

Kyle Treiber is Associate Professor in Neurocriminology at the University of Cambridge and Co-Director of the Centre for Analytic Criminology (www.cac.crim.cam.ac.uk) and the longitudinal study PADS+. A key focus of her research is the integration of neuropsychological and criminological knowledge to advance understanding about criminal cognition and behaviour.

Beth Hardie is an Affiliated Researcher to the Centre for Analytic Criminology, Managing Editor of the European Journal of Criminology, and Research Manager of PADS+. Her work on studying situational interactions provides a bridge between strong complex theory about person-environment interactions in criminal behaviour and methods for empirically testing mechanisms.

How can extended reality and mobile neuroimaging technologies improve criminological theory?

Richard E. Niemeyer

Richard E. Niemeyer is an Assistant Professor of Sociology in the Department of Behavioral Sciences & Leadership at the U.S. Air Force Academy. His research broadly focuses on developing and applying transdisciplinary theoretical methods to solving long-standing debates in the social sciences. His current research applies a mechanistic philosophy of science to the problem of how to bridge the micro- and macro-level divide in sociological research.

Leveraging novel technologies to deconstruct interactions: The Method of Experiential Cascades

Gabriela D. Roman

Gabriela D. Roman is an Affiliated Lecturer at the University of Cambridge. Her research lies at the intersection of affective and cognitive science, with a focus on arousal-modulated cognitions in adverse environments. Her current 'blue-sky' work investigates the role of affective internalisations for callous-unemotional traits. Her 'applied' work tests the role of VR for police officers' psychological recovery post-assault.

UNIVERSITY OF CAMBRIDGE
INSTITUTE OF CRIMINOLOGY
SIDGWICK AVENUE
CAMBRIDGE CB3 9DA

Direct queries to kht25@cam.ac.uk

Wednesday March 29th 12:30-14:00 GMT

Please join us in the Faculty of Divinity, Lecture Room 2

Or on Zoom:
Meeting ID: 993 6518 5698
Passcode: 587734
https://zoom.us/j/99365185698?pwd=VXZVakkvUGJGVUpCc0RLSlJNcIpsUT09

ABSTRACTS

An analytic approach to addressing key challenges when testing situational mechanisms: Acknowledging assumptions and identifying testable implications

Kyle Treiber & Beth Hardie

In this introduction to the panel we introduce the Centre for Analytic Criminology and its key aims to promote theory-guided empirical research that tests plausible causal mechanisms leading to crime and related phenomenon (e.g., the development of crime propensities, emergence of criminogenic contexts, and their convergence through processes of selection). We highlight the importance as well as key challenges of studying acts of crime and the person-environment interactions (situations) through which they come about, touch upon the limitations of current approaches to empirically testing these interactions, and posit that innovative methods involving virtual and augmented reality may provide a unique opportunity to advance such studies, address some limitations, and overcome some key challenges.

How can extended reality and mobile neuroimaging technologies improve criminological theory?

Richard E. Niemeyer

Criminologists have long lamented the fractured state of criminological theory and have proposed theory integration, elaboration, and competition as possible solutions. Unfortunately, the meta-theoretical and methodological preconditions required to implement these solutions properly have not been available until now. Using Akers' (1992) Social Learning Theory and Proctor and Niemeyer's (2020) Retrofit Social Learning Theory as case studies, I explore how recent developments in the new mechanistic philosophy of science, extended reality technologies, and mobile neuroimaging technologies enable more effective forms of theory integration, elaboration, and competition. I briefly discuss future research opportunities utilizing these novel theoretical and methodological techniques.

Leveraging novel technologies to deconstruct interactions: The Method of Experiential Cascades

Gabriela D. Roman

This talk is focused on the use of novel technologies (e.g. virtual reality instruments, medical bracelets, neuroimaging) and hybrid analytics to deconstruct and map the flow of experience. It will introduce the 'method of cascades' as a vehicle through which interactions and lived experiences can be tracked in real time, and moment-to-moment patterns can be analysed to examine how cognition, arousal and behaviour act in synergy to produce experiences. The method also examines how these momentary 'experiential cascades' may explain the existence of 'developmental cascades', the widely observed developmental 'spill-over' effect whereby early life cognitive competencies appear to affect later life functioning across a variety of domains, including relationship quality, life satisfaction, physical health, maladaptive behaviours and professional success.