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Neurocognitive Risk Assessment for the Early Detection of Violent Extremists

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Preface

This research presents a unique perspective on violent extremism. Violent extremism is defined in this research as inclusive of terrorists, militants, active shooters (schools, public and workplaces) and other forms of mass/spree killing. The research approach adopts a cognitive neuroscience perspective in which neuroplasticity plays a dominant role in shaping the cognitive rewiring of thinking pathways over time. This neurocognitive rewiring involves specific sets of interwoven perceptions and beliefs that foster violently extreme behaviours. The research outlines in detail the theoretical and conceptual scaffolding for such a neurocognitive based model of cyclical psychological complexity inherent in the minds of violent extremists.

The research is divided into four main sections. The first section presents a brief overview of contemporary approaches to the risk assessment of violence. The second section provides the background context for the current research project by seeking to unravel the definitional minefield surrounding the concepts of 'terrorism' and 'radicalisation' and the related notion of 'violent extremism'. This section also contextualises violent extremism within the larger frame of reference of 'injustice'.

The third section details the development of the current research on a neurocognitive based risk assessment toolbox (RAT). This toolbox consists of two components. The first component is a structured professional judgment (SPJ) rating instrument based on a set of cognitive indicators. This SPJ instrument functions as an early detection checklist for trained practitioners to use for the Risk Assessment for Violent Extremists (RAVE). The second component is a software visualisation program used for the Geometric Risk Indicator Positioning of Extremists (GRiPe). This visualisation program displays on a three-dimensional risk surface the assessed risk level of a person of interest (PoI) that has come to the attention of police/security and/or other law enforcement agencies and who may pose a risk to society by engaging in violent and extreme actions. This section also includes a pilot 'case study' experiment. The findings of this pilot experiment highlight the practical value and utility of this neurocognitive RAT.

The fourth section involves an 'expert elicitation' research project conducted with a sample of recognised experts (specialist academics and experienced practitioners) drawn from several countries around the world. The purpose of this study

was to fine-tune and validate the risk parameters of the two components, the RAVE cognitive SPJ checklist instrument and the GRiPe software visualisation program, that constitute the RAT. The data collection stage of this expert elicitation project was completed in November 2013. Analysis of the findings is presented along with a discussion of the implications of RAT as a practitioner-focused system for the early detection of potentially violent extremists. Furthermore, the strategic intelligence potential of incorporating a neurocognitive risk assessment approach to violent extremism to the existing arsenal of risk assessment models is outlined. Finally, this section concludes with outlining future research plans to further refine and extend the relevance and applicability of this neurocognitive based RAT for the early detection of violent extremists.

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