

Testing memory suppression as a laboratory analogue of treating PTSD intrusions

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Main BBSRC strategic theme: Understanding the rules of life

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Project outline:

Five percent of UK adults currently experience Post-Traumatic Stress Disorder (PTSD; NHS England, 2023–2024). A core, debilitating symptom is the recurrence of intrusive trauma memories, which remain difficult to treat. A deeper mechanistic understanding of these intrusions is essential to develop more effective interventions. Recent evidence shows that training adults to voluntarily suppress fearful thoughts yields sustained mental health benefits. Building on this, we propose to test whether suppression can reduce the frequency of involuntary memories of fearful events, a laboratory proxy for PTSD symptoms.

Our approach adapts the established Think/No-Think paradigm, where suppressing retrieval leads to robust forgetting on later recall tests. We introduce three innovations to address key limitations of prior work. First, we will use immersive Virtual Reality to create vivid, emotionally engaging fearful episodes that more closely approximate the autobiographical memories troubling PTSD patients. Previous studies relied mainly on simple words, pictures, or neutral personal events. Second, we will assess suppression not only by its impact on voluntary recall but also on the occurrence of involuntary intrusions. We extend previous findings that focused on within-task intrusions by examining effects on long-term memory. Building on our current research we will combine controlled laboratory procedures with ecological diary methods that capture intrusion frequency in daily life. By extending suppression research to richer, trauma-like memories and by targeting involuntary recollection, this project will provide critical insights into the potential of memory control training to reduce intrusive memories and inform the development of novel, mechanistically grounded treatments for PTSD.