“My day feels like one, undifferentiated whole”: Preparation for task episodes and segmentation of experience into activities and contexts – influence on memory, memory impairment and brain injury rehabilitation

Fionnuala Murphy, Polly Peers, Rik Henson, Tom Manly

When people prepare for a forthcoming task, they spontaneously ‘clear their mind’ of aspects of the previous task and assemble what is needed for the upcoming task (e.g. Farooqui and Manly, 2019). Such transitions also play a role in memory. For example, event boundaries are associated with spontaneous increases of activity in the hippocampus (Ben-Yakov and Henson, 2018) and may help account for why surprising events (that abruptly signal a new, unexpected episode) are so memorable (Ben-Yakov, Smith and Henson, in press). The reports of some people with acquired brain injuries (ABI) are consistent with a greater difficulty in segmenting experience into such discrete events. Behaviours like perseveration (in which actions relevant to a previous goal are produced without obvious purpose to a current goal) are also suggestive of greater permeability in episode boundaries. This project will examine relationships between cognitive preparation for upcoming tasks, segmentation (e.g. of films into discrete events), and its effect on memory in ABI. It will also consider people’s (with and without ABI) patterns of segmenting their own experience. Of particular interest is whether greater attention to task and context transitions, or training in more volitional segmentation, could lead to improved memory performance.