Spatial Awareness and mood disorder

Unilateral spatial neglect, in which individuals have difficulty in attending to/respond to one side of space, is a very common consequence of stroke. This high frequency, in combination with the very wide variety of brain structures where damage has apparently led to neglect, suggests that it may be better thought of as a 'state' into which the brain is prone to fall rather than an impairment to an encapsulated module. In line with this, healthy adults appear to show neglect-like phenomena in states of drowsy sleep onset (Bareham et al., 2014) and after sleep deprivation (Manly et al., 2005), and the degree of bias shown by patients with neglect can be significantly modulated by changes in alertness levels (e.g. Robertson et al., 1997; George et al., 2008). Reductions in neglect have also been reported in the context of pleasant stimuli (Soto et al., 2009) and reward (Malhotra et al., 2012), suggesting that current mood also plays a role. This is potentially important in understanding post-stroke recovery patterns because low arousal, reduced activity and mood disorder are common and complex interactive factors following acquired brain injury (low alertness <-> low activity levels <-> low reinforcement <-> low mood). On this basis, we might predict that other clinical groups, primarily defined by low mood, may also be vulnerable to showing spatial biases. A first step in this project would be to follow up on preliminary data, investigating performance on sensitive spatial measures in individuals with low mood. Further questions concern whether mood and alertness components are separable, underlying neural dynamics, and the efficacy of interventions.