Supplementary Discussion

This mechanism may be instantiated by an interaction between the striatum and hippocampus. The striatum has been associated with off-line learning and has substantial anatomical and functional connectivity with a circuit of brain areas known to make a critical contribution to off-line learning. While the hippocampus, implicated in representing declarative knowledge, can inhibit activity within the striatum, and so could potentially block off-line improvements. There may be a direct interaction between the striatum and hippocampus, or any interaction between these structures may be mediated through other brain areas. Alternatively, mechanisms within the hippocampus may provide an explanation for our observations. The hippocampus supports declarative learning and recent work suggests that it may make an important contribution to both procedural learning and consolidation. Thus, procedural consolidation supported by the hippocampus may be inhibited by the declarative component of the SRTT also represented within the hippocampus.

References