

Temporal Gradients in Retrograde Amnesia

Fast and slow learning in memory consolidation

There is a network that an only store a limited number of patterns, too many patterns means interference occur, spurious memories form. For episodic memory, fast learning is indeed because events only happen once. In order of the hippocampus to do this, you need very plastic synapses 2 a voly fast learning rate-rapid 'one-shot' associative learning. The problem with this network is that it gets corrupted quickly as more memories are formed- catastrophic interference. This take the presence to pay for fast learning rate. Therefore the brain would be better to have two memory withins- one that learns and one that learns slowly. The slow system has no problem with interference, can look at events and one that learns slowly extract underlie structures, look at complex afters between events and make them stronger. This also explains the retrograde amnesia, a me notices are slowly transferred from hippocampus to cortex. This idea is based on Marr (1971)



Marr (1971); Willshaw and Buckingham (1990); Alvarez and Squire (1994); McClelland et al. (1995)

Model:

- Hippocampal recurrent collaterals for rapid ('one-shot') associative learning
- Slow learning in neocortex, trained by hippocampus

Issues:

• The hippocampus gets input from neocortex, quickly learns association from all the different senses input. People argue that during sleep, the hippocampus replays the event and trains the neocortex