Hippocampal encoding of memories in human infants. Yates TS, Fel J, Choi D, Trach JE, Behm L, Ellis CT, Turk-Browne NB. Science. 2025 Mar 21;387(6740):1316-1320. Article.

Re-interpretation based on the IPL mechanism

Yates et al. found that even though infants are capable of encoding memories during infancy, deficits in retrieval mechanisms are likely responsible for infantile amnesia in humans (Yates et al., 2025). This indicates that the retrieval mechanism must have some deficiency related to experience (number of previous associative learning events). What is getting matured during the first three years to reach a fully functional level, whose full function is necessary for retrieval of memory as a first-person inner sensation? Based on the semblance hypothesis, each associative learning event generates IPLs whose persistence is important to contribute to the horizontal components of the oscillating extracellular potentials. Brain operates only in a narrow range of frequency of these oscillating potentials. During infancy, it is likely that the relatively smaller number of IPLs won't be sufficient to contribute fully to the oscillations to keep the system property robust for the generation and integration of semblions for specific memory formation.