Babies Learn while Snoozing

Sleep improves the ability to remember, and structures the child's memory

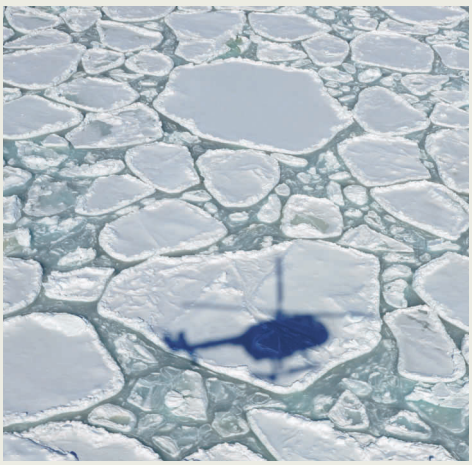
Not really inactive: While sleeping, a baby's brain consolidates and generalizes what it has just learned.

For our brains, sleep is more than just a chance to recuperate. Most brain researchers today believe that, while we are asleep, our brains review what we have previously experienced and consolidate new content, which is integrated into our existing memories. This is evidently the case for babies, too. Scientists at the Max Planck Institute for Human Cognitive and Brain Sciences in Leipzig showed babies aged between 9 and 16 months a series of pictures of objects and taught them what the objects were called. An analysis of brain activity using an electroencephalogram (EEG) showed that the babies were better able to remember the names of the objects if they slept after learning them. In addition, they were able to associate the names with new but similar objects only after a brief nap. In other words, their brains formed generalized categories while they were asleep – translating experience into knowledge. (Nature Communications, January 29, 2015)

Poison Sprays Return to Haunt Us

Climate change will intensify the concentration of DDT in the Arctic

Some poisons are persistent, popping up even in unexpected places. In the last century, the long-lasting insecticide DDT, for example, as well as the polychlorinated biphenyls (PCBs) used until the 1980s as plasticizers were carried mainly by air currents as far as the Arctic, where they became concentrated in the atmosphere, then making their way through precipitation into water, soil and ice. Ever since they were largely banned, they have been gradually disappearing at the North Pole and elsewhere on Earth. Climate change, however, could lead to a renewed increase at least in DDT in the Arctic, starting from around 2075 – even though in our latitudes, the subtropics and most tropical parts of the world, it is likely to be present in only minimal amounts. According to calculations by an international team headed by Gerhard Lammel at the Max Planck Institute for Chemistry in Mainz, it is to be expected that global warming in the northern hemisphere will lead to an increase in the constellations of juxtaposed areas of high and low pressure that favor the transport of DDT to the North Pole. The resulting volumes of air flowing into the Arctic contain a relatively high proportion of the poison that is otherwise distributed across the world in varying concentrations. For people in countries where fish from the northern polar seas is consumed, there will then in turn be an increase in the health risk posed by DDT. (Environmental Science & Technology, February 16, 2015)



Gathering point for long-lasting organic pollutants: DDT and PCBs degrade particularly slowly in the Arctic chill.