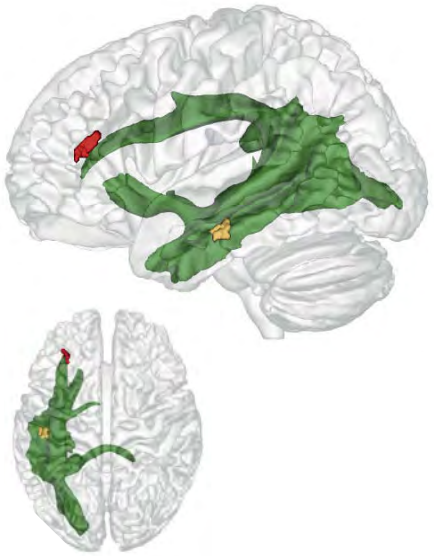
A Connection to Others' Thoughts

Researchers discover brain structure that helps us understand others

At about the age of four, a child's brain undergoes an important change: it begins to understand that others have different thoughts than its own. It can now do what a three-year-old can't: put itself in someone else's shoes. According to scientists at the Max Planck Institute for Human Cognitive and Brain Sciences in Leipzig, this milestone in brain development is tied to the formation of a neural connection, the arcuate fasciculus. This bundle of nerve cell processes forms a link between two brain regions: one is located at the back of the temporal lobe of the cerebrum and helps the adult brain think about other people and their thoughts. The second region is an area in the frontal lobe of the cerebrum that is involved in keeping things at different levels of abstraction, thus helping us distinguish between reality and someone else's thoughts. Only when these two brain regions are connected by the arcuate fasciculus can children start to understand what others think. (www.mpg.de/11182982)



Beginning at age four, the arcuate fasciculus (green) forms a link between a region at the back of the temporal lobe (yellow) and a region in the frontal lobe of the cerebrum (red).

Growth despite Fasting

A new diet developed for fruit flies improves development and fecundity without decreasing lifespan

There are many recommendations for living a long and healthy life, one of which is to eat less. But that can have unpleasant consequences: flies and mice that were put on a diet, for example, displayed slower development and lower fecundity. So a nutrition plan was sought that would provide the positive effects of a diet but without its negative side effects. A research group at the Max Planck Institute for Biology of Ageing has now developed a diet for fruit flies and mice based on the organisms' own amino acid profiles. Flies fed this diet had a lower calorie intake than flies fed a standard diet, and they lived just as long. Despite being on a diet, they develop faster, grow bigger in size and lay more eggs. The researchers therefore suspect that a diet precisely tailored to our amino acid profile would have a positive effect on human health. (www.mpg.de/11160115)

In nature, the fruit fly *Drosophila melanogaster* feeds on ripe fruit. When fed a diet that precisely reflects the composition of amino acids in their bodies, the flies became sated more quickly, but still grew faster.

Older but Bolder

A study conducted at the Max Planck Institute for Human Development has shown that, contrary to popular belief, older people take greater risks in certain situations than younger people. In the study, participants had to choose between two options, each of which offered a different probability of winning or losing a larger or smaller sum of money. In each case, they knew their chances of success. Ultimately, the older participants were more likely than the younger ones to choose the riskier option – because they were more optimistic in their assessments of the possibility of winning and were thus more daring in their choices. The findings suggest that age differences in risk-taking behavior are strongly influenced by situation. Previous studies generally investigated the choice between a safe and a risky option and thus reached a different conclusion. The current study also showed that older participants made worse decisions than younger ones: they were less likely to choose the option with the higher expected monetary return, presumably because of their decreasing ability to process information and solve problems as quickly as younger people. (www.mpg.de/11155381)

Photos: MPI for Human Cognitive and Brain Sciences (top), MPI for Biology of Ageing/Grönke (bottom)