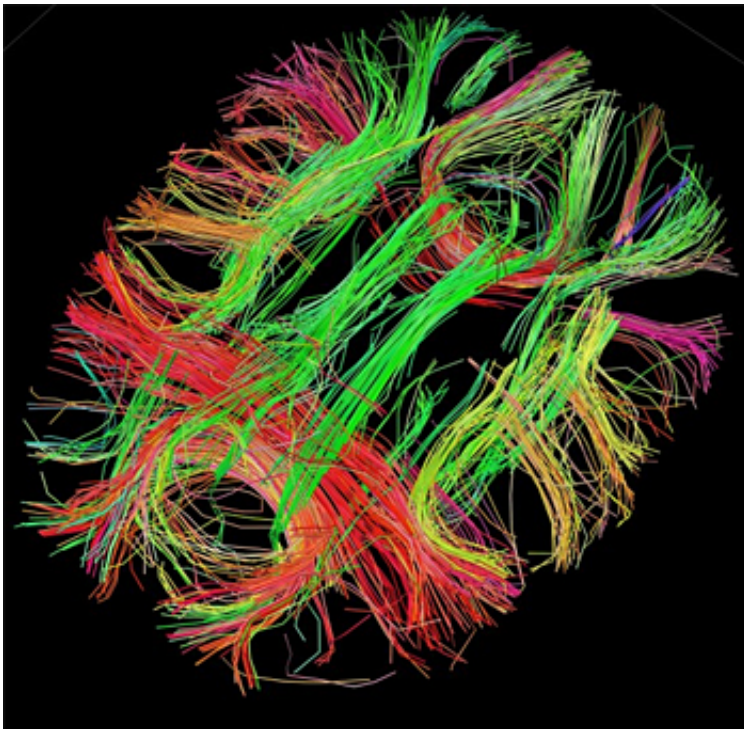


Infant brains develop years faster than we thought

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White matter fiber architecture of the brain. Credit: Human Connectome Project.

Scientists from the University of Louvain have discovered that a key element of infant brain development occurs years earlier than previously thought.

The way we perceive faces—using the right hemisphere of the brain—is

unique and sets us apart from [non-human primates](#). It was thought that this ability develops as we learn to read, but a new study published in the journal *eLife* shows that in babies as young as four months it is already highly evolved.

"Just as language is impaired following damage to the brain's left hemisphere, damage to the right hemisphere can impair our ability to distinguish faces so it is critical to understand how it develops," says co-author Bruno Rossion, Principal Investigator at the University of Louvain.

Researchers used a cap fitted with electrodes to monitor the [brain activity](#) of 15 babies as they sat on their mothers' laps and watched a rapid succession of images over 20 seconds. They were shown 48 images of faces that differed in viewpoint, colour, lighting, and background, interspersed with 200 images of animals, plants, and man-made objects.

Each image was shown for only 166 milliseconds, the same rate used for adult studies. Compared to other images, the appearance of a face was shown to coincide with a specific spike in stimulation of the [right hemisphere](#) of the brain. The difference between the right and the left hemisphere was even more pronounced than in the same study with adults, confounding previous assumptions.

"Given the enormous resources devoted to digital [face recognition](#), the babies' brain accomplishment is not trivial," says Rossion. "The success of this research method in babies demonstrates that it can be used in all ages to improve our understanding of how we develop the ability to perceive complex images."

Humans far outperform computer algorithms in categorizing natural visual [images](#). The face is such a frequent and socially important stimulus in human development that it is ideal for studying how we

develop the ability to visually categorise objects.

A fundamental element of face perception is our ability to tell individuals apart. The authors can now use the same methods to define when this emerges and how it develops with age.

"Parents and carers are already aware of how quickly [babies'](#) brains develop but, until now, gathering evidence has been hard due to the limitations of the methods used," says Rossion.

More information: Rapid categorization of natural face images in the infant right hemisphere, [dx.doi.org/10.7554/eLife.06564](https://doi.org/10.7554/eLife.06564)

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