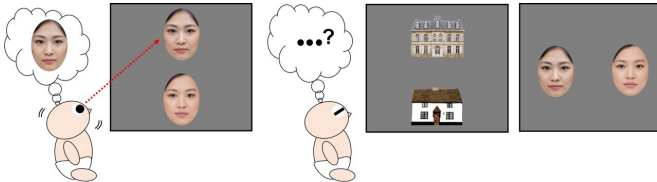


Infants preferentially perceive faces in the upper visual field

25 April 2022



Infants showed the strong visual bias to the top face, but not in horizontal line. Credit: Chuo University, LAIMAN

It has previously been reported that the human visual system has an asymmetry in the visual field. For example, humans are better at finding faces in the upper visual field than lower visual field (the so-called "upper visual field bias for faces"). The underlying mechanisms of this visual field bias are subject to much debate, but a recent infant study suggests that the visual experience in daily life contribute to the emergence of upper visual field bias for faces.

In this study from Chuo University, Japan Women's University, and Hokkaido University, [infants](#) aged five to eight months were presented with two [face images](#) vertically or horizontally. Researchers tested which face they first looked at, and found that infants aged over seven months first looked at the top face more frequently while infants aged under six months equally looked at both faces. There was no difference in horizontal meridian regardless of ages.

This result suggests that the upper [visual field](#) bias for faces emerges around seven months. This bias is specific to faces: the infants were also presented with images of houses, but no bias was observed. This indicates that is the face is important factor inducing the visual field bias. Furthermore, infants aged over seven months preferentially memorized the top face even when they spent an equal amount of time viewing two face images. These

results suggest that there is a developmental change in the upper visual field bias for faces between the ages of six and seven months, implying that experience with faces in daily life is related to the emergence of upper visual field bias for faces.

"Throughout the development, what infants see in daily life changes. The experience with the spatial relationship between the face and body (that the face is attached to the body) is accumulated during the development. We assume that the proportion of viewing face and body relationship leads to the upper visual field bias for faces," said Shuma Tsurumi from Chuo University.

"Interestingly, we also found that infants prioritize to remember the top face," said Jun Kawahara from Hokkaido University. "This [bias](#) could be a basis for our indispensable drive to find people to communicate and interact with others."

The research was published in *Developmental Science*.

More information: Shuma Tsurumi et al, Development of upper visual field bias for faces in infants, *Developmental Science* (2022). [DOI: 10.1111/desc.13262](https://doi.org/10.1111/desc.13262)

Provided by Chuo University

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