

Are babies born with brains ready to understand the world?

Neuroscientists understand much about how the human brain is organized into systems specialized for recognizing faces or scenes or for other specific cognitive functions. The questions that remain relate to how such capabilities arise. Are these networks—and the regions comprising them—already specialized at birth? Or do they develop these sensitivities over time?

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[Daniel] Dilks and his colleagues addressed these questions in an [investigation](#) of neural connectivity in the youngest humans studied in this context to date: 30 infants ranging from six to 57 days old (with an average age of 27 days). Their findings suggest that circuit wiring precedes, and thus may guide, regional specialization, shedding light on how knowledge systems emerge in the brain. Further work along these lines may provide insight into neurodevelopmental disorders such as autism.

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The team used a technique called resting-state functional magnetic resonance imaging (rsfMRI), which measures the level of synchronization of activity in different [brain regions](#) to assess how connected they are.

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The researchers found that the face regions were highly connected to one another but not to the scene regions, and vice versa, at this young age. It would be months before they became selective for faces or scenes, suggesting connectivity precedes the development of function.

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