

The neural basis of 'number sense' in young infants

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Behavioral experiments indicate that infants aged 4 ½ months or older possess an early “number sense” that allows them to detect changes in the number of objects. However, the neural basis of this ability was previously unknown.

This week in the online journal *PLoS Biology*, Véronique Izard, Ghislaine Dehaene-Lambertz, and Stanislas Dehaene provide brain imaging evidence showing that very young infants are sensitive to both the number and identity of objects, and these pieces of information are processed by distinct neural pathways.

The authors recorded the electrical activity evoked by the brain on the surface of the scalp as 3-months-old infants were watching images of objects. The number or identity of objects occasionally changed. The authors found that the infant brain responds to both changes, but in different brain regions, which map onto the same regions that activate in adults.

These results show that very young infants are sensitive to small changes in number, and the brain organization that underlies the perception of object number and identity are established early during development.

Citation: Izard V, Dehaene-Lambertz G, Dehaene S (2008) Distinct cerebral pathways for object identity and number in human infants. *PLoS Biol* 6(2): e11. doi:10.1371/journal.pbio.0060011 (www.plosbiology.org)

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