

Women's, men's brains respond differently to hungry infant's cries

May 7 2013

(Medical Xpress)—Researchers at the National Institutes of Health have uncovered firm evidence for what many mothers have long suspected: women's brains appear to be hard-wired to respond to the cries of a hungry infant.

Researchers asked men and women to let their minds wander, then played a recording of white noise interspersed with the sounds of an infant crying. [Brain scans](#) showed that, in the women, patterns of [brain activity](#) abruptly switched to an attentive mode when they heard the infant cries, whereas the men's brains remained in the resting state.

"Previous studies have shown that, on an [emotional level](#), men and women respond differently to the sound of an infant crying," said study co-author Marc H. Bornstein, Ph.D., head of the Child and Family Research Section of the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), the institute that conducted the study. "Our findings indicate that men and women show marked differences in terms of attention as well."

The earlier studies showed that women are more likely than men to feel sympathy when they hear an infant cry, and are more likely to want to care for the infant.

Dr. Bornstein collaborated with Nicola De Pisapia, Ph.D., Paola Rigo, Simona DeFalco, Ph.D., and Paola Venuti, Ph.D., all of the Observation, Diagnosis and Education Lab at the University of Trento, Italy, and

Gianluca Esposito, Ph.D., of RIKEN Brain Science Institute, Japan.

Their findings appear in *NeuroReport*.

Previous studies have shown differences in patterns of brain activity between when an individual's attention is focused and when the mind wanders. The pattern of unfocused activity is referred to as default mode, Dr. Bornstein explained. When individuals focus on something in particular, their brains disengage from the default mode and activate other brain networks.

For about 15 minutes, participants listened to white noise interspersed with short periods of silence and with the sounds of a hungry infant crying. The patterns of their brain activity were recorded by a technique known as functional magnetic resonance imaging.

The researchers analyzed brain images from 18 adults, parents and nonparents. The researchers found that when participants listened to the typical infant cries, the brain activity of men and women differed. When hearing a hungry infant cry, women's brains were more likely to disengage from the default mode, indicating that they focused their attention on the crying. In contrast, the men's brains tended to remain in default mode during the infant crying sounds. The brain patterns did not vary between parents and nonparents.

Infants cry because they are distressed, hungry, or in need of physical closeness. To determine if adults respond differently to different types of cries, the researchers also played the cries of infants who were later diagnosed with autism. An earlier study of Dr. Bornstein and the same Italian group found that the cries of infants who develop ASD tend to be higher pitched than those of other infants and that the pauses between cries are shorter. In this other study, both men and women tended to interrupt their mind wandering when they heard these cries.

"Adults have many-layered responses to the things infants do," said Dr. Bornstein. "Determining whether these responses differ between men and women, by age, and by parental status, helps us understand instincts for caring for the very young."

In an [earlier study](#), Dr. Bornstein and his colleagues found that patterns of brain activity in men and [women](#) also changed when they viewed an image of an infant face and that the patterns were indicative of a predisposition to relate to and care for the infant.

Such studies documenting the brain activity patterns of adults represent first stages of research in neuroscience understanding how adults relate to and care for infants, Dr. Bornstein explained. It is possible that not all adults exhibit the brain patterns seen in these studies.

Provided by National Institutes of Health

Citation: Women's, men's brains respond differently to hungry infant's cries (2013, May 7) retrieved 11 May 2024 from <https://medicalxpress.com/news/2013-05-women-men-brains-differently-hungry.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--