

That new baby isn't imitating you

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Infants are interested in other people's gestures but do not have the capacity to imitate from birth. Credit: Early Cognitive Development Centre, University of Queensland, Australia

For decades, there have been studies suggesting that human babies are capable of imitating facial gestures, hand gestures, facial expressions, or vocal sounds right from their first weeks of life after birth. But, based on new evidence, researchers reporting in the Cell Press journal *Current Biology* on May 5, 2016 now say that just isn't so.

After testing young infants repeatedly over their first couple of months, they found no evidence at all that very young infants are capable of [imitation](#).

"Numerous studies from the 1980s and 90s indicated no imitation by newborns, while others claimed it was there," says Virginia Slaughter of the University of Queensland in Australia. "We wanted to clear up the confusion because the 'fact' that newborns imitate is widely cited, not just in the fields of psychology, neuroscience, and pediatrics, but also in popular sources for parents."

If the youngest [babies](#) can't imitate, then how did so many studies suggest that they could? Slaughter says the main limitation of earlier work is that researchers presented infants with a limited number of gestures. For example, she says, in most studies, researchers only tested infants' responses to an adult poking out her tongue and opening her mouth.

To do that, they measured infants' levels of tongue protrusion and mouth opening before the adult did anything and then assessed changes in the infants' behaviors after the adult showed one of those two gestures. In many cases, the babies did poke their tongues out more after they saw an adult's tongue poking compared to mouth opening. However, the researchers didn't have [adults](#) make any additional gestures or expressions, to see whether infants were truly imitating the adult's behavior.

"If infants also increase their tongue protrusions when an adult models a happy face or finger pointing, then it's not a case of imitation, but probably excitement at seeing an adult do something interesting," Slaughter says. "We eliminated this problem by assessing infants' responses to a wide range of different models."

In the new study, Slaughter and her colleagues presented 106 infants with nine social and two non-social models and scored their responses at 1, 2, 6, and 9 weeks of age. The results were quite clear: the infants did not imitate any of the behaviors that they observed. In response to the grownups they saw, they were just as likely to produce a different gesture as they were to produce a matching one.

Slaughter says that this result is not what they'd anticipated. In fact, they set out initially with the goal to examine whether differences in imitation amongst young infants would predict later imitation and other aspects of social development.

The findings now suggest that imitation isn't an innate behavior, but one that is learned in babies' first months. In fact, babies might learn to imitate other people based on watching other people imitate them.

"Infants aren't born with the ability to copy what other people do, but they acquire that skill during the first months of life," Slaughter says. "One possibility is that being imitated plays a role in this acquisition. In another study from our lab, we found that parents imitate their babies once every two minutes on average; this is a powerful means by which infants can learn to link their [gestures](#) with those of another person."

The findings should come as encouraging news for anyone who has noticed that their newborns don't imitate them. That's perfectly normal, and they almost certainly will over time.

The researchers are now analyzing additional data from their longitudinal study, extending into the second year of life. They say they want to know when [infants](#) really do begin to imitate and what factors may contribute to the emergence of this skill.

More information: *Current Biology*, Oostenbroek et al:

"Comprehensive Longitudinal Study Challenges the Existence of Neonatal Imitation in Humans" [www.cell.com/current-biology/f ...](http://www.cell.com/current-biology/fulltext/S0960-9822(16)30257-3)
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