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Babies' musical memories formed in womb

By Nicola Jones

Babies can remember things from the womb for much longer than we thought, according to researchers at the University of Leicester.

Psychologist Alexandra Lamont found that year-old babies still recognised and had a preference for musical pieces that were played to them before being born. Previous studies have only shown babies being familiar with pre-birth experiences when they were a few days old.

Lamont had thought the children might develop a taste for the style of music played by their mothers, but this was not true. Instead, she was surprised to find that the babies could discriminate and remember individual songs.

“That’s really quite remarkable. I’m excited about that,” says Carolyn Rovee-Collier, a developmental psychologist from Rutgers University, New Jersey. She says the babies are probably sensing a vague familiarity to the music rather than really remembering it, rather like a feeling of *deja-vu*.

Look and learn

The study was done with 11 infants from families participating in a larger 20 year project coordinated by the BBC. Mothers were asked to listen to a song of their choice for half an hour every day during the last three months of their pregnancy.

The songs ranged from classical to reggae and pop, from the mother’s favourite to something she thought would do her child good. After birth, the mothers didn’t listen to their song choice again. “I suspect they got fed up with it,” says Lamont.

After one year, Lamont visited the families and played 30 second sections of the mother’s song, along with bits of other music matched for style, key, pace and volume. If the children kept looking at the speakers the music stayed on and this was taken to signify preference and recognition.

Lamont found that all the babies showed an over-riding preference for fast paced, more exciting music. But they also showed a statistical preference for their mother’s song, regardless of the style.

Other children who did not have music played to them in the womb showed no preference for either of the matched tunes.

Our tune

Mothers probably cannot change their children's musical tastes by playing them certain songs in the womb says Lamont, but it may help babies bond with their mothers. "A couple of the babies had a strong attachment between the mother and the music," she says. "I'm not going to know for a few years whether this has any long term implications."

Previous research has shown infants remembering things like music, stories or people they encounter after birth for only a few days to months. Lamont says most people assumed that pre-birth memories would last about the same amount of time, if not less.

Lamont thinks that the exposure over three months could explain the results. Most studies only give infants a few weeks to get used to something before being tested to see if they remember it.

Also, adds Lamont, the mothers were told to sit and relax during their musical exposure. That could affect the mother's hormonal or chemical balance, perhaps further enhancing the effect.