

Banging an important development milestone, Tulane study says

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Babies have a natural proclivity for banging, but what may seem like haphazard movements (and a lot of noise) are actually providing researchers at Tulane University with important data on how humans learn to use tools.

A study led by Bjorn Kahrs, a post-doctoral research scientist in Tulane's Department of Psychology, suggests that tool use develops gradually, beginning in infancy when banging is uncoordinated through early toddlerhood when it is more precise and efficient.

"The movements are all over the place at 6 months old," Kahrs said. "But through the second half year the moves become more consistent. It's almost a straight up and down movement, which is what you do when you hammer at something."

The study, which was published in the journal *Child Development*, examined the developmental trajectory of banging movements and its implications for tool use development. Kahrs, along with psychology professor Jeffrey Lockman and student Wendy Jung, studied the movements of 20 babies ranging in age from 6 to 15 months at the Tulane Infant and Toddlers Development Project laboratory.

Using digital motion-capture technology, the researchers covered the arms and chests of the babies with reflective markers that could be detected by the high-speed motion-tracking cameras. The babies were handed toy hammers, then allowed to bang to their hearts' content. As they banged, software transformed the images from the cameras into moving three-dimensional images of the activity.

"The way in which they used their hands went from one that was random to one that was consistent with aiming for a target," Kahrs said.

The project is part of a more extensive child development study being funded by a

\$1.6 million award from the National Institutes of Health. The study is also analyzing how infants develop hand-to-mouth coordination during the first year and how they develop early writing skills.