

What's Behind A Temper Tantrum? Scientists Deconstruct The Screams

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Anatomy Of A Tantrum

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Children's temper tantrums are widely seen as many things: the cause of profound helplessness among parents; a source of dread for airline passengers stuck next to a young family; a nightmare for teachers. But until recently, they had not been considered a legitimate subject for science.

Now research suggests that, beneath all the screams and kicking and shouting, lies a phenomenon that is entirely amenable to scientific dissection. Tantrums turn out to have a pattern and rhythm to them. Once understood, researchers say, this pattern can help parents, teachers and even hapless bystanders respond more effectively to temper tantrums — and help clinicians tell the difference between ordinary tantrums, which are a normal part of a child's development, and those that may be warning signals of an underlying disorder.

The key to a new theory of tantrums lies in a detailed analysis of the sounds that toddlers make during tantrums. In a [new paper](#) published in the journal *Emotion*, scientists found that different toddler sounds — or "vocalizations" — emerge and fade in a definite rhythm in the course of a tantrum.

"We have the most quantitative theory of tantrums that has ever been developed in the history of humankind," said study co-author [Michael Potegal](#) of the University of Minnesota, half in jest and half seriously.

The first challenge was to collect tantrum sounds, says co-author [James A. Green](#) of

the University of Connecticut.

"We developed a onesie that toddlers can wear that has a high-quality wireless microphone sewn into it," Green said. "Parents put this onesie on the child and press a go button."

The wireless microphone fed into a recorder that ran for several hours. If the toddler had a meltdown during that period, the researchers obtained a high-quality audio recording. Over time, Green and Potegal said they collected more than a hundred tantrums in high-fidelity audio.

The scientists then analyzed the audio. They found that different tantrum sounds had very distinct audio signatures. When the sounds were laid down on a graph, the researchers found that different sounds emerged and faded in a definite pattern. Unsurprisingly, sounds like yelling and screaming usually came together.

"Screaming and yelling and kicking often go together," Potegal said. "Throwing things and pulling and pushing things tend to go together. Combinations of crying, whining, falling to the floor and seeking comfort — and these also hang together."

But where one age-old theory of tantrums might suggest that meltdowns begin in anger (yells and screams) and end in sadness (cries and whimpers), Potegal found that the two emotions were more deeply intertwined.

"The impression that tantrums have two stages is incorrect," Potegal said. "In fact, the anger and the sadness are more or less simultaneous."

Green and Potegal found that sad sounds tended to occur throughout tantrums.

Superimposed on them were sharp peaks of yelling and screaming: anger.

The trick in getting a tantrum to end as soon as possible, Potegal said, was to get the child past the peaks of anger. Once the child was past being angry, what was left was sadness, and sad children reach out for comfort. The quickest way past the anger, the scientists said, was to do nothing. Of course, that isn't easy for parents or caregivers to do.

Understanding that tantrums have a rhythm can not only help parents know when to intervene, but also give them a sense of control.

"When I'm advising people about anger, I say, 'There's an anger trap,'" Potegal said.

Even asking questions can prolong the anger — and the tantrum.

That's what parents Noemi and David Doudna of Sunnyvale, Calif., found. Their daughter Katrina once had a meltdown at dinnertime because she wanted to sit at one corner of the dining table. Problem was, the table didn't have any corners — it was round. When David Doudna asked Katrina where she wanted to sit, the tantrum only intensified.

"You know, when children are at the peak of anger and they're screaming and they're kicking, probably asking questions might prolong that period of anger," said Green. "It's difficult for them to process information. And to respond to a question that the parent is asking them may be just adding more information into the system than they can really cope with."

In a video of the tantrum that Noemi Doudna [posted](#) on YouTube, Katrina's tantrum intensified to screaming, followed by the child throwing herself to the floor and pushing a chair against a wall.

"Tantrums tend to often have this flow where the buildup is often quite quick to a

peak of anger," Green said.

Understanding that tantrums have a rhythm can not only help parents know when to intervene, but also give them a sense of control, Green said.

That's because, when looked at scientifically, tantrums are no different than thunderstorms or other natural phenomena. Studying them as scientific subjects rather than experiencing them like parents can cause the tantrums to stop feeling traumatic and even become interesting.

"When we're walking down the street or see a child having a tantrum, I comment on the child's technique," Potegal said. "[I] mutter to my family, 'Good data,' and they all laugh."

Noemi Doudna said she now looks back on Katrina's tantrums and sees the humor in them.

Katrina often demanded things that made no sense in the course of tantrums, Noemi Doudna said. She once said, "'I don't want my feet. Take my feet off. I don't want my feet. I don't want my feet!'"

When nothing calmed the child down, Noemi Doudna added, "I once teased her — which turned out to be a big mistake — I once said, 'Well, OK, let's go get some scissors and take care of your feet.'"

Her daughter's response, Noemi Doudna recalled, was a shriek: "Nooooo!!!"

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