For a WEB EXTRA with a link to audio laugh clips from Hudenko's study, see dartmed.dartmouth.edu/w11/we05.

Autism study is no laughing matter (or is it?)

There are many kinds of laughter, from hearty guffaws to polite chuckles. The distinction that interests William Hudenko, Ph.D., a DMS assistant professor of psychiatry, is between "voiced" and "unvoiced" laughter. A natural tendency of children with autism to produce voiced laughter could help them build stronger social connections, he says.

Voiced laughter, Hudenko explains, has a song-like quality. It's "what comes to mind when you think about laughter," he says. Snorts and chuckles, on the other hand, are examples of unvoiced laughter, which is usually atonal and does not involve the vocal chords.

Voiced laughter, Hudenko explains, has a song-like quality.

Joke: "Unvoiced laughter is related to low-arousal, frequently social situations," Hudenko says. "For example, if I cracked a lame joke and you chuckled, it wouldn't be because you're really amused. You'd be doing so because you've learned that it's the appropriate social response."

As children grow, they typically use more unvoiced sounds. By adulthood, up to half of laughter is unvoiced. But much is still unknown about laughter in children, and less in children with autism.

In research he conducted before arriving at DMS this summer, Hudenko and colleagues at Ithaca College recorded laugh samples of 30 children aged 8 to 10. Half were typically developing children, and the other half had a confirmed autistic disorder—mostly on the mild end of the autism spectrum.

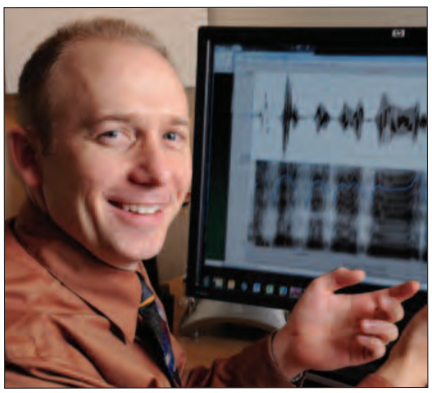
Block: The researchers made the children laugh with time-tested strategies such as knocking over block towers and popping bubbles. Their findings, published in the *Journal of Autism and Developmental Disorders*, show that the children with autism laughed in a sing-song, voiced fashion 98% of the time, while only 60% of the laughs in the typically developing group were voiced.

Hudenko and a colleague then recruited Ithaca undergraduates to rate how much they liked various laugh samples. These results, published in the journal *Autism*, reveal that subjects found the unguarded, voiced laughter of children with autism much more enjoyable. This was true even when subjects heard only voiced laughs from each group.

Genuine: "There's something about the laughter of children with autism that goes beyond voicing," Hudenko says. He thinks it may reflect a preference for what is genuine over what is forced. "Research has shown that we don't like it when people produce disingenuous expressions, because they're essentially trying to cheat us," he says. "I think as children with autism develop, they don't learn social laughter the way typical kids do. When they laugh, they're genuinely happy, and that's probably why we like hearing it."

Hudenko is excited by the idea that the work could aid children with autism. "Laughter helps build bonds between people," he says. "I'd like to help these kids find appropriate social contexts to express this laughter people enjoy hearing and connect more meaningfully with their families and peers."

ALISSA POH



JON GILBERT FOX

Laughter is all in a day's work for Hudenko.

DMS's quantitative biology institute, its director Jason Moore, Ph.D., told *Nature*, is "training computational-biology students to speak multiple languages beyond bioinformatics."

A hole in "lifesaver" argument

It is conventional wisdom "that every screen-detected breast cancer survivor has had her 'life saved' because of screening," wrote DMS's H. Gilbert Welch, M.D., and Dartmouth senior Brittney Frankel in *Archives of Internal Medicine*. But they concluded that of the 230,000 women a year diagnosed with breast cancer after mammography, only about 4,000 to 18,000 actually benefit from the test. Many who survive would have been treated successfully even without mammography, while thousands of others are treated unnecessarily.

Booze cues

Drinking references in song lyrics are nothing new—think Willie Nelson's "Whiskey River"—but they may be more frequent and influential for today's teens. "The average U.S. adolescent is exposed to 34 references to alcohol in popular music daily," said a paper coauthored by DMS pediatrician James Sargent, M.D. Sargent and researchers at the University of Pittsburgh found that one in five songs that U.S. adolescents listen to contains explicit references to alcohol, often a specific brand. "These alcohol brand appearances are associated commonly with a luxury life-style characterized by wealth, sex, partying, and other drugs," they wrote in the journal *Addiction*.