

To scientists, laughter is no joke -- it's serious

March 31 2010, By SETH BORENSTEIN , AP Science Writer

(AP) -- So a scientist walks into a shopping mall to watch people laugh.

There's no punchline. [Laughter](#) is a serious scientific subject, one that researchers are still trying to figure out.

Laughing is primal, our first way of communicating. Apes laugh. So do dogs and rats. Babies laugh long before they speak. No one teaches you how to laugh. You just do. And often you laugh involuntarily, in a specific rhythm and in certain spots in conversation.

You may laugh at a prank on April Fools' Day. But surprisingly, only 10 to 15 percent of laughter is the result of someone making a joke, said Baltimore neuroscientist Robert Provine, who has studied laughter for decades. Laughter is mostly about social responses rather than reaction to a joke.

"Laughter above all else is a social thing," Provine said. "The requirement for laughter is another person."

Over the years, Provine, a professor with the University of Maryland Baltimore County, has boiled laughter down to its basics.

"All language groups laugh 'ha-ha-ha' basically the same way," he said. "Whether you speak Mandarin, French or English, everyone will understand laughter. ... There's a pattern generator in our brain that produces this sound."

Each "ha" is about one-15th of a second, repeated every fifth of a second, he said. Laugh faster or slower than that and it sounds more like panting or something else.

Deaf people laugh without hearing, and people on cell phones laugh without seeing, illustrating that laughter isn't dependent on a single sense but on social interactions, said Provine, author of the book "[Laughter: A Scientific Investigation](#)."

"It's joy, it's positive engagement with life," said Jaak Panksepp, a Bowling Green University psychology professor. "It's deeply social."

And it's not just a people thing either. Chimps tickle each other and even laugh when another [chimp](#) pretends to tickle them.

"That's my candidate for the most ancient joke," Provine said. "It's a feigned tickle. That's primal humor."

Panksepp studies rats that laugh when he tickles them. Sound silly? It's on YouTube and in scientific journals, a funny pairing of proofs when you think about.

It turns out rats love to be tickled. They return again and again to the hands of researchers tickling them, Panksepp's video shows.

By studying rats, Panksepp and other scientists can figure out what's going on in the brain during laughter. And it holds promise for human ills.

Northwestern University biomedical engineering professor Jeffrey Burgdorf has found that laughter in rats produces an insulin-like growth factor chemical that acts as an antidepressant and anxiety-reducer. He thinks the same thing probably happens in humans, too. This would give

doctors a new chemical target in the brain in their effort to develop drugs that fight depression and anxiety in people.

Even so, laughter itself hasn't been proven to be the best medicine, experts said.

Dr. Margaret Stuber, a psychiatry professor at University of California Los Angeles Medical School, studied whether laughter helped patients. She found that distraction and mood improvement helped, but she could not find a benefit for laughter alone.

"No study has shown that laughter produces a direct health benefit," Provine said, largely because it's hard to separate laughter from just good feelings. But he thinks it doesn't really matter: "Isn't the fact that laughter feels good when you do it, isn't that enough?"

While studying laughter is serious work to researchers, it apparently sounds like a silly topic when they're seeking research grants. For that reason, Northwestern's Burgdorf avoids the word "laughter." He calls it "positive emotional response."

Panksepp understands, saying: "There's no funding in fun research."

More information: Robert Provine's site:
<http://www.umbc.edu/psyc/faculty/provine/index.html>

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