5-year-old chimp beats college kids in computer game

December 5, 2007

Story Highlights

- The chimps were faster than humans in some tests
- The chimps and humans both had an 80 percent success rate on one test
- One chimp kept this score while humans dropped to 40 percent in a new test

NEW YORK (AP) -- Think you're smarter than a fifth-grader? How about a 5-year-old chimp? Japanese researchers pitted young chimps against human adults in tests of short-term memory, and overall, the chimps won.

A chimpanzee named Ayumu performs a memory test.

That challenges the belief of many people, including many scientists, that "humans are superior to chimpanzees in all cognitive functions," said researcher Tetsuro Matsuzawa of Kyoto University.

"No one can imagine that chimpanzees -- young chimpanzees at the age of 5 -- have a better performance in a memory task than humans," he said in a statement.

Matsuzawa, a pioneer in studying the mental abilities of chimps, said even he was surprised. He and colleague Sana Inoue report the results in Tuesday's issue of the journal Current Biology.

One memory test included three 5-year-old chimps who'd been taught the order of Arabic numerals 1 through 9, and a dozen human volunteers.

They saw nine numbers displayed on a computer screen. When they touched the first number, the other eight turned into white squares. The test was to touch all these squares in the order of the numbers that used to be there.

Results showed that the chimps, while no more accurate than the people, could do this faster.

One chimp, Ayumu, did the best. Researchers included him and nine college students in a second test.

This time, five numbers flashed on the screen only briefly before they were replaced by white squares. The challenge, again, was to touch these squares in the proper sequence.

When the numbers were displayed for about seven-tenths of a second, Ayumu and the college students were both able to do this correctly about 80 percent of the time.

Tetsuro Matsuzawa of Kyoto University is a pioneer in studying the mental abilities of chimps.

But when the numbers were displayed for just four-tenths or two-tenths of a second, the chimp was the champ. The briefer of those times is too short to allow a look around the screen, and in those tests Ayumu still scored about 80 percent, while humans plunged to 40 percent. That indicates Ayumu was better at taking in the whole pattern of numbers at a glance, the researchers wrote.

"It's amazing what this chimpanzee is able to do," said Elizabeth Lonsdorf, director of the Lester E. Fisher Center for the Study and Conservation of Apes at the Lincoln Park Zoo in Chicago. The center studies the mental abilities of apes, but Lonsdorf didn't participate in the new study.

She admired Ayumu's performance when the numbers flashed only briefly on the screen.

"I just watched the video of that and I can tell you right now, there's no way I can do it," she said. "It's unbelievable. I can't even get the first two (squares)."

What's going on here? Even with six months of training, three students failed to catch up to the three young chimps, Matsuzawa said in an e-mail.

He thinks two factors gave his chimps the edge. For one thing, he believes human ancestors gave up much of this skill over evolutionary time to make room in the brain for gaining language abilities.

The other factor is the youth of Ayumu and his peers. The memory for images that's needed for the tests resembles a skill found in children, but which dissipates with age. In fact, the young chimps performed better than older chimps in the new study. (Ayumu's mom did even worse than the college students).

So the next logical step, Lonsdorf said, is to fix up Ayumu with some real competition on these tests: little kids.