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CHIMPANZEE CHRONICLE

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WHAT ARE THEY THINKING?

Take a glimpse into the mind of chimpanzees. Among their advanced cognitive abilities, chimpanzees make tools, solve complex problems and even use deception and manipulation when it serves their interests. Just ask the Chimp Haven staff!



WE ASKED OUR BOARD MEMBER DR. STEVE ROSS, SUPERVISOR OF BEHAVIORAL AND COGNITIVE RESEARCH FOR THE LESTER E. FISHER CENTER FOR THE STUDY AND CONSERVATION OF APES AT LINCOLN PARK ZOO TO TALK ABOUT HIS WORK:

Using Computers to Understand Chimpanzee Cognition

BY STEVE ROSS, PH.D.

Almost every day at Lincoln Park Zoo in Chicago, some of the chimpanzees (and gorillas) take part in voluntary cognitive research activities, during which they interact with high-tech computer touch screens, figure out puzzles, and receive small food rewards for their efforts.

In one such task, the chimpanzees are asked to do serial ordering in which they must correctly select several symbols in a pre-determined order. When those symbols are Arabic numerals (1,2,3...) it looks a lot like the apes are counting. However, this task is not necessarily involving questions of quantity but of remembering the correct order of each symbol. Chimpanzees learn to first select one symbol ("O") before they select a second symbol ("X")... then move on to longer and longer sequences. Though the apes at Lincoln Park Zoo have learned to sequence up to 7 items reliably, research with chimpanzees in Japan has shown they are capable of even longer lists. The symbols appear randomly on the screen such that the apes can't use spatial cues to identify which one comes next. In some of the more advanced tasks, the symbols may even disappear from the screen when the first is selected... making it necessary for the chimpanzees to accurately memorize the location and order of the symbols within just a split-second.

While many will marvel at this amazing display of short-term memory demonstrated by a non-human primate, there will remain skeptics who question the broad purpose of these activities. First is the question of how these artificial computer tests relate to natural chimpanzee life? We all know that chimpanzees aren't hanging out in Africa with laptop computers, but there are several ways that these same skills possibly correlate with very natural things that chimpanzees do every day. Chimpanzees live in very large and complex social groups, and on a daily basis each individual might interact with dozens of different chimpanzees, each with distinct personalities, status and individual characteristics. In many ways, it's not unlike what we experience in the human world. You have your family members, co-workers, and assorted acquaintances with whom you have a variety of relationships. Knowing their respective personalities and how each of them is connected to each other is a very useful skill. For instance, knowing that the guy in the mailroom is the boss's nephew, might come in handy someday.

Another corollary is the idea of order. Knowing rules, such as particular words that precede others, are a fundamental aspect of language. Understanding more about how a common ancestor may have achieved the ability to order items might uncover some critical aspects linked with the evolution of language.

But what do the chimpanzees get out of it? The first thing to remember about this research is that it is voluntary in nature. That is, the chimpanzees themselves decide if they want to participate or not. On some days, for whatever reason, they don't want to partake in the activities. Most often (over 90% of the time) they eagerly join us at the touch screen port and participate in the challenges.

In a captive environment, it is critical that apes are able to flex the mental muscles with which they are endowed. Computer tasks give chimpanzees opportunities to make choices and face complex mental challenges and that - in itself - can be stimulating and rewarding. In terms of chimpanzee management, it's a new and interesting form of enrichment not unlike providing them with food puzzles and physical activities to keep them stimulated.

Although the chimpanzees at Chimp Haven don't use computers, they have a highly trained staff that understands the importance of a good mental workout and provides them with a wide range of challenges every day. The quick intellect of chimpanzees keeps the attentive animal care staff challenged in a whole other way... they're challenged to find ways to keep the chimpanzee challenged! This positive cycle of learning and cognitive challenge results in an exciting and positive environment for humans and chimpanzees alike. And though learning about how chimpanzees think and learn is interesting, providing those opportunities for the chimpanzees may be even more important.



Chimpanzee Intelligence Illustrated

If you want to hear stories about chimpanzee intelligence, talk to the Chimp Haven staff. Thanks to Amy Crespo, Erin Loeser, Amy Fultz, Sharon Roy, Brian Hall, Mark Lewis, Kimberly Burke, Raven Jackson and Christine Sumner for sharing these amazing stories of observational learning, problem solving and manipulation!

“Edna likes to groom and touch the bottom of caregivers’ boots. One day I guess I wasn’t giving her enough attention and she thought that I was just going to walk by; so she banged on the mesh barrier and gave me the visual cue for “foot” that we use in our training program. I was astonished by her request and complied! Edna had not been trained to use this cue – she must have learned it by watching the training sessions with two of her roommates, Denise and Farra.”

“One day after getting an empty banana carton to play with, Emma followed me around carrying the box and pointing to the picture of the banana on it. She pounded her chest as if to say “Bring me a banana”. I was amazed that she could recognize the symbol of a banana and communicate to me that she wanted one. Needless to say I gave her a banana.”

“Gay got my two-way radio that was accidentally dropped into her play yard. I tried to trade different goodies to get it back with no success. Although I didn’t realize it, Gay knew the radio wouldn’t fit through the wire mesh that separated us. I brought her a pile of bananas that she really wanted, and Gay finally bit the radio into pieces. She gave it back to me one piece at a time through the mesh in exchange for the bananas.”



Gay

“Caregivers always double check the locks on doors by giving them an extra tug. Artica often comes over to the doors of her play yard after staff has finished cleaning and reaches through the mesh and pulls on the locks – just like caregivers do. Other chimpanzees use tools to try to open the locks. Sheena used a long stick to reach outside the window of her bedroom to manipulate the slider door lock. Ivy uses hay to try to pick the locks to the doors.”

“The chimpanzees use many of the behavioral enrichment devices in novel ways. Les takes bottles that are filled with sticky substances (like honey and seeds) and fills them with water to loosen the food inside. Gay runs water on her ice treats to get them to melt. After

sipping juice through a piece of plastic tubing, Tracy creates a hose by attaching it to the water spigot.”

“I have seen Xavier implement an interesting “cooling” technique on super hot days. He will fill his mouth with water and roll onto his back in the grass. Then in one swift movement he spits the water up into the air and uses his hands to spread it down his stomach.”

“The chimpanzees like to trade for things they want. Emma offered to trade a handful of grass for a flashy necklace that a staff member wore. If there is a blanket left in a doorway that a caregiver needs to close, Henry, Sheba, Keeli, Ivy, Gay and Pan will pull the blanket from the door way so that we can close the door- expecting a reward in return. Sheila is good at finding objects that don’t belong in her living area which she is eager to trade for a banana.”

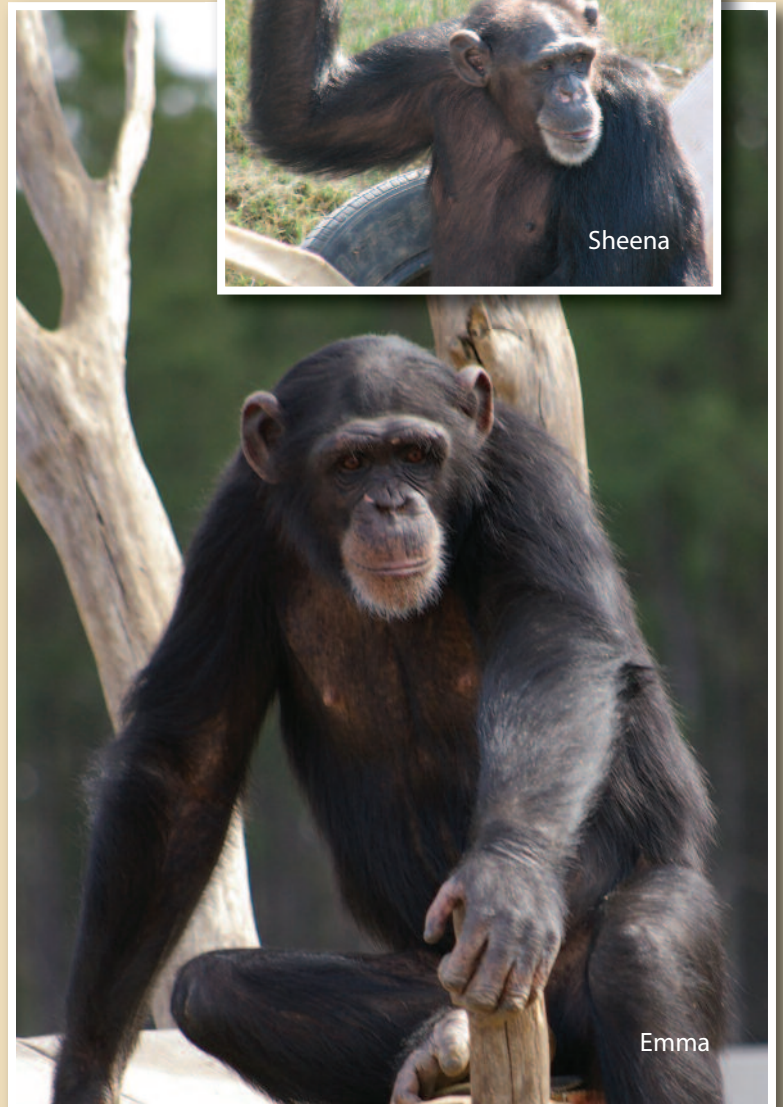
“Sheena tried to put on a glove before picking up a dead skunk found in the habitat and giving it to the staff for removal.”

“Lisa and Karin have figured out that if they whimper and cry after I hand out treats to their group that I will give them seconds. They only do this for foods that they really love.”

“Several male chimpanzees fake an injury or illness for attention. Ben limps and Brent coughs when they want to receive attention or extra food from staff.”



Sheena



Emma

Cognitive Stimulation for Chimpanzees at Chimp Haven

Keeping chimpanzees occupied in captivity is a challenge, especially considering the apes' intellectual capacity, natural curiosity and strength. The environment at Chimp Haven is highly varied and spacious, with expansive outdoor areas that change with the seasons. Large social groups probably offer the best form of stimulation to chimpanzees, who excel at understanding (and sometimes manipulating) their fellow roommates and staff. Our environmental enrichment program implemented by Erin Loeser also offers daily excitement, entertainment and intellectual challenge.



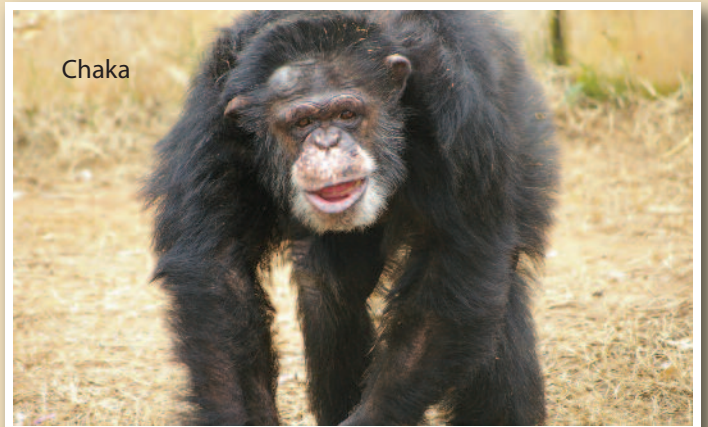
A Different Kind of Chimpanzee Intellect

BY REBEKAH SAUCIER, CHIMP HAVEN CAREGIVER



Chaka exhibits symptoms similar to humans diagnosed with autism. He often does not appear engaged in what is going on around him. However, when

he is interested in something, he enjoys it so whole-heartedly that it is endearing to watch him. For enrichment I often bring my parrots to Chimp Haven. When I brought my large Blue Front Amazon, Toulouse, Chaka showed a marked interest in Toulouse. He made some soft vocalizations and reached out to the birdcage, indicating he wanted the bird to be closer. Chaka's "play face" related his joy and wonder at this new creature! His group-mate and best friend Ruby wanted to see what was going on, and she nudged Chaka aside. Chaka shook his fist and cried when his view of the bird was blocked. When he was situated where he could see the parrot again, he was clearly contented. I was so glad I could bring this joy to Chaka, who is one of my favorites.



For more information on chimpanzee cognition:

Go to www.chimphaven.org for a companion article written by board member Dr. Frans de Waal, C. H. Candler Professor, Psychology Department and Director, Living Links Center, Yerkes National Primate Research Center, Emory University

Read the new book *The Mind of the Chimpanzee: Ecological and Experimental Perspectives*, edited by Elizabeth Lonsdorf and Steve Ross
<http://lpzoo.tamretail.net/SelectSKU.aspx?skuid=99020746>

Check out this YouTube video for amazing footage of computer tasks being performed by chimpanzees at the Primate Research Institute in Japan:
<http://www.youtube.com/watch?v=nTgeLEWr614&feature=related>

BOB BARKER BRINGS CHIMPANZEES TO CHIMP HAVEN

Television celebrity, Bob Barker, has come to the rescue of five chimpanzees in Texas who need a permanent home. Upon hearing about the plight of the chimpanzees left behind in a facility that has gone bankrupt, Barker made a contribution of \$230,000 to Chimp Haven to begin building their new living quarters. He is also underwriting the cost of their care for one year.

Barker's donation provides immediate relief for the Texas chimpanzees, and it launches Chimp Haven's plan to expand its accommodations for non-government supported chimpanzees who need homes. Chimp Haven President, Dr. Linda Brent, says, "I hope Mr. Barker's generous gesture will inspire others to follow his example so that we can bring more chimpanzees to Chimp Haven."

Matching Gift Challenge Update

It's not too late to contribute to our Matching Gift Challenge, which runs through August 31, 2011. Help Chimp Haven reach its goal of raising \$50,000. With a 1:1 match, that means the sanctuary will raise \$100,000. Funds are needed to build housing and provide care for research chimpanzees waiting to retire to the sanctuary.

Emmitt & Cody





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Chimp Haven is a non-profit 501 (c) (3) organization, and all donations are tax deductible to the fullest extent of the law.

OCTOBER EVENTS

Save the Dates!

A NUMBER OF EVENTS ARE PLANNED FOR OCTOBER. CONSIDER MAKING A TRIP TO SHREVEPORT TO ENJOY LOUISIANA HOSPITALITY AND SUPPORT THE SANCTUARY!

- October 15 Chimpanzee Discovery Day, sanctuary open to the public, 9 am - Noon
- October 16 Dr. Frans de Waal lecture - Centenary College, Shreveport
- October 21 "Freaks Come Out at Night" Chimp Haven Education Committee Party and Fundraiser - Randle T. Moore House, Shreveport
- October 23 2 Mile Fun Run & 6 Mile Trail Run - Chimp Haven 5K and Fun Run Eddie D. Jones Nature Park, Keithville

Chimpanzee Discovery Days

Chimp Chat & Chew

2011 SCHEDULE

September 17

October 15 (no CCC)

November 19

CDD Hours: 9:00 a.m. - Noon

PHOTOS BY STAFF MEMBERS

Amy Fultz & Lee Anna Naranjo



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