



The Alex Foundation Newsletter

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www.alexfoundation.org

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Avian Adventures, www.avianadventures.com, is our Sponsor of the Month!
Check out the details in What's Happening in Fundraising!

What's Happening in the Lab

Play Styles of the Educated and Famous

Like most parrots, the birds of *The Alex Foundation* love to play—and with the exception of a few hours a day in school—that's what they do. They frolic with toys, they toy with the staff and they "create" their own toys out of mundane everyday objects.



Wart contemplates his treasury of toys

Wart, the youngest bird, is the frenzied "funster" in the lab—he plays hard and he plays whenever he's not in a session! Unlike many African Greys, Wart takes to toys immediately, showing no fear and an intense curiosity about any new plaything. He goes to wooden toys with gusto, and with so much enthusiasm that the students are constantly constructing

new creations for his pleasure. Wart has five toys inside his cage, several outside his cage, toys hanging from his T-stand, and toys in a stainless steel bucket—this guy is the absolute toy tycoon of the lab!

When it comes to playing, Griffin (affectionately known as Griff) is definitely from the “less is more” school. His preference in playthings runs to items of a more natural theme, although he does have a favorite acrylic toy. He loves to chew and nibble at sea grass ropes woven between the bars of his cage, as well as bits of cardboard and other beak teasers. Some of his favorite toys are the origami sculptures made by students in the lab. He adores carrying and nibbling on these multi-folded paper boats and hats.



Griff with a few of his favorite things

When the students aren't teaching the birds, they work at keeping the birds amused. One of the latest successes (at least in Griff's mind), was a collection of some of his favorite items. A student built an assembly of stacking cups, interspersed with newspaper scraps, and hidden bits of nut. Griff first tossed the whole structure over, but then noticed there was a nut if he separated the cups. As chief nut-aholic of the lab, Griff delighted in disassembling this construction, enjoying each bit of cashew he “discovered.”

Even though Wart holds the title of “Champion Player,” all the birds play the majority of each day. Each bird has a playstand on top of their individual cage. T-stands abound in lab—there is even one next to Arlene's computer, a place that is highly coveted by the birds. They all like to sit near Arlene and “help” her work.

It is hard to imagine Alex at play. When we see him on television, he's doing the most astounding



**Hmmm...which key is more fun?
Alex considers the options...**

things: counting objects, identifying items, and differentiating bigger, smaller, and “middle-ist” sizes. But he does play. He loves his cardboard “houses,” with “windows” and “doors” that he often creates himself. He adores chomping on corks, and is passionate about toys with keys. Alex also shows a very apparent taste for music and those tastes run a wide gamut. He loves the classical music appreciated by his favorite human, Dr. Pepperberg, but also enjoys the rock music played by the students. Bobbing his head up and down, Alex gets down with his flock, no matter what the tune.

Alex, Griffin and Wart are not so very different from the parrots in most homes. Yes, they're more educated, but they play, chatter and whistle just like other parrots. But this comparison can also work in reverse. While other birds can play, chatter and whistle just like *The Alex Foundation* birds, the majority of African Greys can't verbally ask for what they want—even though it has been proven that they have the ability to do so.

A world in which all African Greys could have some control over what happens to them each day seems like a utopian dream. But it's not. It could become a reality if we parrot owners took the time and the effort to teach our birds. It's something to think about, and not too difficult a dream to achieve. It's only difficult if we make it so, and it will remain a dream until we choose to make it a reality.

What's Happening in Research

Nothing is More Interesting than Something

by Elaine Hutchison

Alex...we know him as a brilliant bird, an agile speaker, and a personality beyond compare. But we didn't know that he could surpass some ancient mathematicians in concept or that he could spontaneously erupt with a cross-reference label that bamboozles the human brain...but he could and he did.

And he did it all just to make his lessons more interesting.

In May of 2005, the *Journal of Comparative Psychology* published Dr. Pepperberg's paper, "Number Comprehension by a Grey Parrot (*Psittacus erithacus*), Including a Zero-Like Concept." In this paper, Dr. Pepperberg proposes that Alex expressed an absence of quantity, translating to a "zero-like" concept.

Why is this so amazing? Well, humans haven't been using the concept of the "nothing" zero for all that long. The concept of zero as a placeholder (to denote quantities such as 50 or 500 or 5000) has an earlier origin, but it wasn't until around 200 A.D. that Hindus began using the figure of "0" to represent a concept of no quantity. Even works of the Greek mathematician Euclid contained no concept of zero, working only with numbers as lengths of lines. It would be left up to the Hindus of the future to recognize the "nothing" aspects of zero as they began to conceive of more abstract mathematical notions.

But apparently the concept wasn't too abstract for Alex. He came up with it when he was bored during a session involving number comprehension.

Prior to this series of training, Alex had already acquired the vocal labels of numbers "1" through "6" to identify sets of objects, such as 3 spools or 4 wood, etc. In young human children of a certain age, number comprehension is limited. For example, if a young child is shown 5 sticks and asked "how many," the child replies "five." But if the same child is asked to retrieve five sticks from a big pile, the youngster cannot comprehend the accurate amount.

During the sessions of number comprehension, Dr. Pepperberg was determining if Alex's label comprehension went beyond the one-way understanding of young human children. Things were going along swimmingly until Alex suddenly became disinterested in his schooling.

Dr. Pepperberg has some theories about the cause. Prior to his becoming bored, he had already completed 32 sessions, all addressing the same parameters and labels. He might have been bored with covering the same material, but the cause may also lie in his incentive for learning.

"Alex often responds negatively to the lack of novelty of the rewards," she says. This dilemma is sometimes unavoidable because he must use known labels to verify his responses. And because the reward for his correct responses are the objects he has labeled, he sometimes becomes disdainful of the reward, almost as if he is thinking, "that old thing again??"

In the past, Alex would cease to work, begin to preen, or interrupt the sessions with requests for other items or changes of location. But his attention span would improve if novel or new items were incorporated into the training.

This time, however, Alex decided to incorporate a little novelty on his own. After showing Alex a tray of two, three and six objects (each set having a different color), a trainer asked him, "What color 3?" Alex replied "five." The questioner asked Alex the same question twice more and each time he replied "five." The trainer finally said "OK, Alex, tell me, what color 5?" Alex immediately responded "none."

This was an astonishing response. In previous training, Alex had been taught to respond "none" in response to color, shape, matter or size. For instance, if Alex was shown keys of the same size, and was asked, "which bigger," "none" was the correct answer. But before his eruption of the "none" during his number comprehension trials, the term had applied only to a lack of information.

The amazing aspect is that Alex himself transferred the meaning of "none" to also indicate the absence of quantity. In other words, he recognized that five objects were not present. And after more "none" numerically-based questions were subsequently integrated into his training, he answered those questions correctly as well.

Why is this so compelling? One aspect is that his eruption was spontaneous. Just previous to his astounding answer, it was apparent that he was bored with his sessions. Given his obvious lack of interest, it's possible that he initiated the interaction to make his training more challenging. He not only provided the correct response but also set up the questions!

Dr. Pepperberg's Speaking Schedule

Invited speaker, January 21-23, 2006, The Bird & Exotic Animal Hospital, Greenacres, FL (an Alex Foundation Fundraiser!) For more details see <http://www.birdexoticvet.com/>

Invited speaker, March 3, 2006, Department of Zoology, University of New Hampshire

CHAI (Concern for Helping Animals in Israel), March 10-14, 2006, Tel Aviv, Israel*

Invited speaker, March 23-24, 2006, Hampden-Sydney College, VA

Bochner Lecture, April 10, 2006, Rice University, Houston, TX

Invited speaker, May 16, 2006 Cold Spring Harbor Cultural Series; Cold Spring Harbor Laboratory, Cold Spring Harbor, Long Island, New York **Free and open to the public**

Symposium, August, 2006, in honor of Dietmar Todt, Berlin, Germany*

Symposium, August, 2006, co-chair and speaker, IOC, Hamburg, Germany*

* Part of a conference with significant admission fees

Another fascinating aspect is that the concept of none, as Alex used it, can be considered an abstract concept. As Dr. Pepperberg says, this perception of none “relies on violation of an expectation of presence.”

Abstract? Number comprehension? These are terms that are used to describe the first use of “zero” as the Hindus applied it. Before the Hindu “0” came onto the scene, numbers were used as

words to describe collections of stuff.

Perhaps previous civilizations did not find it useful to have a number that described the absence of a quantity of things.



But now we have a bird who thinks that describing the absence of objects is one way to make his days more interesting. He deliberately and intentionally used the concept of “none” in a number comprehension task, another aspect that is especially intriguing...does Alex have a concept of the numerical meaning of zero that matches ours?

The jury is still out on that one, but the implications for future study are electrifying. Admittedly “none” is different than “zero.” But when one considers that Alex has a comprehension of numbers, it’s imperative to investigate the possibility that he may have a realization of zero as a number.

It’s a strong possibility. Although Alex has already accomplished much in his 29 years, there are still undreamed of and untold treasures inside that gray-feathered head. And Alex definitely has something over the great mathematician Euclid. Alex can make nothing more interesting than something.

What’s Happening in Fundraising

January’s Sponsor of the Month!

“Every bird wants one,” says Avian Adventures, our January Sponsor of the Month. “One what?” you might ask.

A fantastic cage...the best bird home...an exceptional avian house, created by designers whose sole intent is to “think” like a bird.

Alex and Griffin each have one. They spend their days playing on, in and around these marvelous cages, donated by Avian Adventures (www.avianadventures.com). In addition to donating their splendid cages, Avian Adventures has been a longtime financial supporter of *The Alex Foundation*, contributing a portion of every cage sale to help fund the birds’ education. Avian Adventures also promotes *The Alex Foundation* by hosting a page on their website that is devoted totally to Alex and the birds. Click [here](#) to view their charming photos and video of their visit with Alex!

Everyone--from vets to behaviorists to everyday parrot owners—sings the praises of Avian Adventures products. Their customers [rave](#) about both the powder-coated and stainless steel Avian Adventure cages, citing their safety, quality, and good looks as being beyond compare.

Carol Frank, founder of Avian Adventures, has a long history of working with birds. By the time she established the company in 1996, she had accrued more than 12 years of bird experience, owning businesses that distributed and sold bird products. She saw the need for improvement in bird cages, and Avian Adventures was born.

Although Carol currently serves on the board of the Dallas Audubon Society, perhaps her most telling testimonial is her daily life with her own two birds, Murphy Green—a male Eclectus, and Chuck—a Black-Headed Caique.

Adaptation and innovation are key concepts at Avian Adventures, concepts that are implemented in several ways. Customer feedback is an integral factor in updating products to satisfy the needs of birds. And Avian Adventures also has an advisory board of consultants, made up of five of the finest bird-minded humans in the U.S. But the most important reason for the company's commitment to excellence in their products is this—they absolutely LOVE parrots!



Carol Frank with Murphy, Chuck and

Please support this company that supports *The Alex Foundation*! If you're in the market for a cage, a playstand, or a recreation center, check out Avian Adventures at www.avianadventures.com. Remember...every bird wants an Avian Adventure...including yours!

Contributions to *The Alex Foundation* can be made on Alex's website, www.alexfoundation.org or by sending a check or money order to the address below:

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Some firms offer a corporate-matching program. If you are employed by a company that matches employee donations, your contribution to *The Alex Foundation* can do twice as much good! All contributions to *The Alex Foundation*, a non-profit 501c.(3) organization, are tax deductible.

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