Fall 10-27-2003

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Illinois Wesleyan University NEWS RELEASE

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October 27, 2003

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BLOOMINGTON, Ill. — Enrichment activities can alter the behavior of zoo animals who develop abnormal habits in captivity, according to ongoing research by James Dougan, a professor of psychology at Illinois Wesleyan University.

"Some animals in captivity seem to do bizarre things," says Dougan. "For instance, animals may pace in circles, creating a rut in the ground. A polar bear in a zoo in Indianapolis was known to swim in circles constantly. These are clearly not natural behaviors but are almost certainly in response to the constrained area in which the animals are kept.'

Bears in the wild forage over miles, Dougan notes, so being limited to a small area will often result in these pathological behaviors. His research supports the findings of a study published in *Nature* magazine this month by Oxford University researchers.

In his own research, Dougan has observed the abnormal behavior among two Malaysian Sun Bears held in captivity at Bloomington's Miller Park Zoo. One of the Miller Park bears had developed the unhealthy habit of banging its head against a door that she would enter at feeding time.

To counter this behavior, Dougan, working with Valeri Farmer-Dougan, associate professor in psychology and biological sciences at Illinois State University, developed an enrichment activity that modeled the bear's foraging activity. Tubes were fashioned out of PVC pipe, and a mixture of peanut butter and popcorn was placed in one end of the tubes, which were then hidden in the bears' enclosure.

"The bears have to find the tubes and then they can reach in and get the mixture out of the end of the tube the way they might get honey from a bee hive," said Dougan. "When we first began, it might have taken the bears 20 minutes to find the tubes. Now they can find them in only a few seconds."

Once the enrichment activity was introduced, the unwanted head-banging behavior began to disappear, adds Dougan, who reported preliminary findings at a meeting of the Association for Behavior Analysis in San Francisco earlier this year.

"Under ideal circumstances, everyone benefits [from behavioral enrichment]," Dougan wrote. "Animals have more avenues for the display of species-appropriate behavior, zookeepers have an easier time managing animals, and the zoo-going public is able to view healthier and more active animals. Well-managed programs of behavioral enrichment, which are more in evidence at zoos throughout the country, may even reduce zoo expense."

Dougan's work with the bears is one of several projects that he has been conducting with Farmer-Dougan and students from both Illinois Wesleyan and Illinois State.

Another project involves an enrichment activity for tigers that simulates attacking and capturing prey.

To discuss the research with Professor Dougan, contact Jeffery G. Hanna or Ann Aubry at 309/556-3181.