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> "The line that divides circus from zoo has been murky. From the proto-zoo days when royalty invited the public to enjoy their menageries, a tension has existed between education and entertainment."

Zoo Futures

By Jon Cohen

Caught between circuses, theme parks, museums, and menageries, zoos are struggling to be leaders in the conservation world. Getting there may mean letting some animals go.

SUMMARY QUESTIONS

worksheet available online

1. Name six of the first species at the San Diego zoo, three taken from captivity and three from the wild. (answers: CAPTIVITY: Bear from US Navy ship, hyena from local menagerie, alligator from local pool, chimpanzee "Snooky." WILD: Seals, orangutans and gibbons from Southeast Asia, jaguars from the Amazon, white pelicans from Salton Sea.)

2. What were three of the changes in the latter half of the 20th century that moved zoos away from circuses? (answers: Getting rid of performing animals and animal rides, hiring keepers with academic training, creating more humane and "natural" habitats, investing in captive breeding programs and conservation programs.)

3. What is the main shift occurring in the programming offered by zoos? (answer: From entertainment to education, science, and conservation)

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Pascal Gagneux, an evolutionary biologist at University of California, San Diego, studied chimpanzees in the wild, helps run a center on human origins, and played a central role in designing some of the most progressive exhibits at the San Diego Zoo today. Photo ©Jon Cohen

4. What major educational theme does Gagneux feel needs to be included in zoos? What are two examples he gives to do this? (answers: Evolution. His suggestions: phylogeny signs, and stories on co-evolution such as the fig and wasp.)

5. What is one of the major changes happening at zoos in terms of their collection size? (answer: Shrinking collections in terms of numbers of species. The International Crane Foundation has 15 species of cranes, Idaho's Zoo Boise has 83 species and 201 animals.)

6. What is a "species survival plan"? What is the biggest challenge facing implementing one? What does William Conway suggest zoos must do in order to do more for wildlife species? (answer: An 'ark'-like concept that zoos have diverse breeding populations in zoos that will buffer wildlife loss. Challenge: There isn't enough space for the breeding and raising of animals in zoos. Conway suggests zoos must do more to protect animals in the wild – in-country investment for in-country conservation)

7. What is unique about the Elephant Odyssey exhibit? (answer: It blends live animal exhibits with concepts of evolution and extinction by including sculptures of the animal's extinct ancestors.)

DISCUSSION QUESTIONS

worksheet available online

1. What is your reaction to David Hancocks' statement that zoos should have an educational goal "for people to understand and appreciate the natural world… but because they're focusing only on showing what animals look like, that's preventing them from reaching this future"? What about the author's challenge to Hanckocks, that too much of a museum/education angle will make them boring and hurt revenue? Do you agree with the author's argument that zoos will have to "face difficult trade-offs between the zoo as a theme park and the zoo as an education/research center"? What do you think the public reaction will be "to exhibits that increasingly place education over entertainment"?

2. Why would limited gene pools for many captive animals necessitate a shrinking number of species on display at zoos?

3. What is your reaction to the denial received by the author to talk with the zoo architect? Do you agree with his statement that "in the future, I suspect that the public increasingly will become sharply critical of zoos that avoid engaging with outside entities about their design, purpose, and goals"? Why do you think zoos throughout history have had to have such tight control over media and image? Consider not only problems or accidents that zoos can have, but also the

> "Shrinking collections do not mean the death of zoos: more is not necessarily more. In fact, some pioneers have built, or are planning to build, innovative, hybrid zoo-museum and zoo-wildlife refuges for only a handful of species."

underlying psyche that makes this industry different and our love-hate relationship with animals behind bars.

4. What is your opinion on the evolution "debate" in zoo educational features? Is it understandable from a business point of view? Do you believe there is a "rampant anti-intellectual attitude" in zoos? Go to a zoo—ask questions of guides and keepers to inform your opinion.

5. What is your reaction to the opinions of zoo-goer Bill Disher, that the increasing role of entertainment (movie attractions) and fewer animals takes away from the zoo experience? Have we found a way to make education more entertaining? Or is multi-media entertainment not truly educational?

6. Would you personally like to see pink flamingos at the entrance to a zoo or an exhibit about the beginning of life on Earth, complete with algae fossils? Does your reaction clash or agree with your feelings about the purpose/mission of zoos?

7. Do you agree with William Conway's assertion that zoos must work more assiduously for the preservation of animals in the wild? If they aren't breeding species to replacement, where are they getting them? Is it the job of zoos to protect wildlife? Or is it more about sticking entertainment and bringing nature to urban people?

8. What do you think about the scientific-theory cut-outs described toward the end of the article? Are they an effective way to engage zoogoers in "trying out" or thinking about different theories on extinction? How would you improve upon it?

ADVANCED ACTIVITIES

1. **Zoo Economics 101:** Where do zoos get their income? How different are income sources between zoos? Have each student choose a zoo, spread across the country, and try to find information on their business model (look for zoo financial information: online resources, academic journal articles, books). *(Hint: The St. Louis Zoo, for example, does not charge an entry fee, but many of the exhibits have separate fees.)* What are financially successful zoos doing to stay afloat? How will those business plans need to change if: 1. zoos have fewer species, 2. they shift to more education versus entertainment, or 3. they shift to more conservation as opposed to entertainment? How have costs for zoos increased? Have they simply scaled with inflation, or have they outpaced inflation? Do you agree with the author that the prices have elevated to "fiscal madness"? What role does local government play in zoo finances (e.g. leasing land at dramatically reduced rate – San Diego for $1 per year!?) How about academic training? There are "zoo and aquarium *science*" college degrees, but are there "zoo and aquarium *business*" degree programs (or concentrations for zoo management within the hospitality/entertainment management programs)?

BUILD YOUR OWN GLOSSARY

- evolutionary biology
- cognitive research
- natural history
- species survival plans
- captive breeding
- wildlife conservation

2. **Green Spaces and Gardens in Zoos:** How many resources (space, money, personnel) do zoos put toward attracting "humans who want to spend time with other humans in a beautiful space" such as gardens or views? What are the costs and benefits of having gardens and green-spaces for humans at zoos?

   TRUE STORY: A mother and daughter had a day to spend touring Los Angeles. They had little interest in going to see the zoo, but both were into gardening, so they decided to pay the fee for the zoo to see the included "LA Botanical Garden." When they entered, they realized that the "botanical garden" was made up of the landscaped plants between the exhibits, with a few of them labeled. Disappointed, they left without visiting the rest of the zoo. Does this story describe a success or failure for the zoo?

3. **Shifting Attitudes toward Nature and Changing Zoos:** How has public perception of zoos changed over the past century? Why do you think that is? What accompanying social changes may have had an influence? (Think human rights, women's rights, decline of expansionism, rise of environmentalism, us-versus-nature extraction focus versus the enlightened us-with-nature preservationist romanticism.) When were animal rights and animal cruelty laws enacted? Who were the major characters in this shift (*hint: Emerson, Thoreau, Muir, Pinchot)*? Check out this article on "Nature and the American Identity" from the University of Virginia (http://xroads.virginia.edu/~cap/nature/cap2.html).

4. **What Is a Progressive Zoo Exhibit?:** The author mentions that Dr. Pascal Gagneux of UC San Diego has "played a central role in designing some of the most progressive exhibits at the zoo today." Find out which exhibits he's referring to. Check out Tucson's Sonora Desert Museum mentioned in the article. Find a local real-life example of a "progressive zoo exhibit" such as the Elephant Odyssey. Observe if people are engaging in the educational material. What aspects make an educational experience successful (e.g. an outgoing interp person? a face cut-out? something to climb on or touch? graphics, text, etc.)? At what

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The National Chimpanzee Observatory envisioned by psychologist Daniel Povinelli is an example of a hybrid zoo-research facility. The center would invite the public to view up to 200 chimpanzees living in a natural setting and to watch researchers conducting cognitive studies with the chimps.

***Seattle-based Activity:** David Hancocks is "an architect and former director of acclaimed zoos in Seattle and Tuscon," including our local Woodland Park Zoo. Research which exhibits he helped design within the WPZ. What were the educational goals of his designs? Are the exhibits still in place today? If so, go visit and observe how people interact with the exhibit. Report your observations back to your group.

Further Reading: *The Paradoxical World of Zoos and Their Uncertain Future* by David Hancocks

point do you think that education and information leads to a 'boring' exhibit? Work in groups and talk about the different exhibits, why they were designed (e.g. were they designed for maximum interaction with zoogoers? maximum care for the animals? evolution education?), what elements are included, failures/successes of the exhibit. Come up with a plan for a new exhibit.

5. **Design a 'Layer-Cake' Sign:** Gagneux suggests that information delivery at zoos should take the form of a layer cake, "where you can just walk through for entertainment and not read a single thing; you can walk through and get the minimum information about what animals are there and what they do, but then if you want, you can read a lot of stuff." Choose an exhibit at your local zoo and design a sign that allows visitors to gain as much or as little info as they desire. How can you make it the most interesting and deliver the most information without reaching information overload (e.g. graphics, maps, flowcharts, graphs, phylogenies)? Does your sign meet David Hancocks' goal of going beyond "focusing only on showing what animals look like" and getting "people to understand and appreciate the natural world"? *(Alternative activity: Design a 25 min "Progressive" Bus Tour. What exhibits would you visit? What topics would you cover? Think carefully about your audience – why are they on the tour opposed to walking self-guided. Research by going on a tour at your local zoo.)*

6. **Fact Finding – Captive Breeding:** The paper by Lees and Wilcken (*International Zoo Yearbook*, 2009, doi:10.1111/j.1748–1090.2008.00066.x) assessed 87 zoos, and reached the conclusion that zoos are failing to maintain their own collections (48% were "breeding to replacement" and 55% met recommended threshold levels of genetic diversity"). What type of publication is the International Zoo Yearbook? Research other data sources for levels of captive breeding capacity of zoos. *(Starting point: the Association of Zoos and Aquariums, or the* Seattle Times *series on captive elephants - http://seattletimes.com/elephants/)* Can you find an official description of a "species survival plan"? William Conway from The Wildlife Conservation Society writes regarding SSPs, "It's harder than we thought – very much harder" – what makes a SSP so hard? Is it purely because there isn't enough space at zoos to breed and raise animals?

7. **Zoos' Role in Conservation:** David Hancocks, author and former zoo director, says zoos have had few conservation successes and that they oversell them. "Zoos have been dressing themselves up as champions of conservation, but they're not matching it with what they do," he says. "If you strip away the rhetoric of what zoos claim they do and what they actually do, it's still 99.99% putting animals on show." Find examples of advertized conservation efforts by zoos. What part of the zoo budget goes towards conservation versus "putting animals on display"? Find out how much your local zoo spends on 'other' activities. How do you define "effort" toward conservation? How do you define conservation "success" (e.g. number of animals saved, amount of land put under protection)? Find out what your local zoo claims as a conservation success. Do some research to find out what actually happened on the ground. Compare these results to other entities involved with "wildlife conservation" (NGOs: Conservation International, The Wildlife Conservation Society, Defenders of Wildlife. Government: EPA, NPS. Academic: Society for Conservation Biology, universities!)