



The Uncertain Future of Research Chimpanzees

Ajit Varki, *et al.*

Science **315**, 1493b (2007);

DOI: 10.1126/science.315.5818.1493b

The following resources related to this article are available online at www.sciencemag.org (this information is current as of April 2, 2007):

Updated information and services, including high-resolution figures, can be found in the online version of this article at:

<http://www.sciencemag.org/cgi/content/full/315/5818/1493b>

A list of selected additional articles on the Science Web sites **related to this article** can be found at:

<http://www.sciencemag.org/cgi/content/full/315/5818/1493b#related-content>

Information about obtaining **reprints** of this article or about obtaining **permission to reproduce this article** in whole or in part can be found at:

<http://www.sciencemag.org/about/permissions.dtl>

From far
southern seas

1500



Impacts of ignoring
population growth

1501



Whither the
ice sheets?

1508



LETTERS | BOOKS | POLICY FORUM | EDUCATION FORUM | PERSPECTIVES

LETTERS

edited by Etta Kavanagh

The Uncertain Future of Research Chimpanzees

THE OTHERWISE EXCELLENT NEWS FOCUS ARTICLE BY JON COHEN ON THE FUTURE OF “THE endangered lab chimp” (26 Jan., p. 450) does not emphasize one compelling reason why studies of captive chimpanzees should continue—the significant differences in their disease patterns, incidence, and severity from those of humans (1). As human and chimpanzee proteins are >99% identical (2), it should be possible to explain some of these surprising disease differences at the molecular level. Thus, more studies are needed not because chimpanzees are good models for human diseases, but rather because they are surprisingly bad models in many instances, for example, HIV infection progressing to AIDS and *P. falciparum* malaria. Such investigations could adopt approaches similar to those currently used for studying human diseases, and the results would benefit the care of both humans and chimpanzees. The NIH spent many dollars to sequence the chimpanzee genome (2). If the existing captive chimpanzee population is allowed to die out in sanctuaries without adequate funding or facilities for such research, some of the most biomedically valuable benefits of the chimpanzee genome sequencing will never be realized.

AJIT VARKI

Distinguished Professor of Medicine and Cellular and Molecular Medicine, Co-Director, Glycobiology Research and Training Center, University of California, San Diego, La Jolla, CA 92093, USA.

References

1. A. Varki, T. K. Altheide, *Genome Res.* **15**, 1746 (2005).
2. The Chimpanzee Sequencing and Analysis Consortium, *Nature* **437**, 69 (2005).

E-Letters

Please see our online letters section, E-Letters, for further discussion of chimpanzee research >>
www.sciencemag.org/cgi/letters/315/5811/450

MORE THAN 25 YEARS AGO, *SCIENCE* PUBLISHED a letter from me (1) criticizing a NIH report on future U.S. needs for chimpanzees in research, which called for 300 to 350 chimpanzees a year and a major expansion of captive breeding. We now know that those figures were exaggerated. In 1994, NIH reported a chimpanzee surplus and requested advice from the National Research Council; this led to a breeding moratorium that began in 1995.

Jon Cohen's article, “The endangered lab chimp” (News Focus, 26 Jan., p. 450) reports that scientists are projecting a shortage and calling for renewed breeding. However, when various countries are ending chimpanzee research, it is time for the United States to follow suit.

We base this on ethical, financial, and scientific arguments. Chimpanzees have very

complex mental and social needs that simply cannot be met in laboratory housing. Ethically, we should not use them merely as a utilitarian means to an end (collecting data) no matter how useful we think they might be. Chimpanzee research has produced far less value to human health than scientific rhetoric commonly claims.

Each chimpanzee bred will cost up to \$500,000 or more for lifetime care. High costs stack the odds against chimpanzee research producing significant human health benefits, partially due to small study group sizes (usually two to four individuals).

Scientist support for invasive chimpanzee research has declined greatly. We challenge those few who advocate renewed chimpanzee breeding to justify their arguments on the basis of appropriately sophisticated ethical and sci-

entific analyses. Vague allusions to the need for chimpanzees to combat some future Ebola-like disease do not meet the standard required.

This is the ideal moment to phase out the use of this endangered species in invasive research and send the remaining laboratory chimpanzees to permanent sanctuary.

ANDREW N. ROWAN

The Humane Society of the United States, 2100 L Street NW, Washington, DC 20037, USA.

Reference

1. A. N. Rowan, *Science* **203**, 1069 (1979).

IN HIS ARTICLE “THE ENDANGERED LAB CHIMP” (News Focus, 26 Jan., p. 450), Jon Cohen describes the unwinnable dilemma presented by the intersection of our need to conduct scientific research on chimpanzees to better understand both them and ourselves with our strong ethical obligation to do chimpanzees no harm. There is a way to recast the problem that will make a resolution possible.

Much of the argument for breeding comes from the realization that if the moratorium is not lifted, the captive research population will become extinct; John Vandenberg calculates that by 2037 only postreproductive individuals will remain. Will that mark the beginning of the end of captive chimpanzee research? Only if there are no other chimpanzees. However, the goal of conservationists is to ensure large, stable wild populations on an indefinite basis, and capture of wild chimpanzees will always be possible (one assumes that by 2030, available methods would not be as brutal and wasteful as those of today).

There is no need to end the moratorium any time soon, and with efficient, humane, and noninvasive use of existing individuals, most of the truly important biological questions about our kin are likely to be answered well before 2030. As for the possible epidemic mentioned in the article's last paragraph: If it happens sooner, we have sufficient numbers, and if it happens later, surely the compelling need generated by a (hypothetical) devastating threat that cannot be addressed in any other way will justify carefully implemented exemptions to bans on captures from the wild. Transfer of maintenance funds from

