
CURRENT DILEMMAS

Single Housing of Primates in US Laboratories: A Growing Problem with Shrinking Transparency

Alka Chandna, Michael Niebo, Stacy Lopresti-Goodman and Justin Goodman

Thirty years ago, the United States took steps to enhance the psychological well-being of primates in laboratories, including the introduction of social housing requirements.

Now, in an apparent response to questions about the effectiveness of these measures, federal authorities are completely shutting down public access to information on the implementation of social housing

Historical context

In 1985, in response to high-profile cases documenting the mistreatment of non-human primates used in experiments,¹ the US Congress amended the federal *Animal Welfare Act (AWA)* to mandate that institutions take steps to promote the psychological well-being of primates in laboratories.² As a result, the US Department of Agriculture (USDA) created regulations pertaining to environment enhancement for primates, including provisions aimed at addressing their social needs.³ In federal regulations and guidelines, social housing of primates is now deemed to be the ‘default’, with exemptions permitted only for veterinary or experimental reasons with appropriate documentation and approval.⁴ In cases in which an experiment-related exemption was granted, institutions have been required to submit these written and approved justifications to the USDA with their annual reports on animal use. These documents – which report the number of primates singly housed for experimental reasons, and why it was deemed necessary – were then made publicly available.

Animal welfare science

The USDA’s primate social housing requirements are evidence-based, as social housing is universally acknowledged to be a key factor in the welfare of primates in laboratories. Moreover, it is well documented that housing primates alone, or single housing, is detrimental to their development, physical health, and psychological well-being. In rhesus macaques, physical contact with conspecifics is

essential to normal development, and the amount of time spent caged alone is a significant predictor of stereotypic and self-injurious behaviour – including repeated pacing, circling, hyper-aggression, depression, hair plucking, or self-biting.^{5,6} Psychological distress stemming from being caged alone has also been documented in cynomolgus monkeys,⁷ pigtailed macaques,⁸ chimpanzees,^{9–11} and baboons.^{12,13} In one modified preference test involving capuchin monkeys, the value of social companionship was so high that the primates chose it in lieu of food.¹⁴ Singly housed primates have also been documented as having suffered from physiological abnormalities, including depressed immune function and higher incidence of coronary atherosclerosis.^{15,16}

Surveys on housing of non-human primates

Despite this evidence of the harms caused by single housing, as well as federal regulations and guidelines promoting social housing, the data indicate that many primates in US laboratories continue to be housed alone. A 2000–2001 USDA survey found that 34.7% of primates in US laboratories were housed individually – although the USDA admitted that this was likely a low estimate, as primates who had been housed only temporarily with other primates for breeding purposes were classified as being socially housed.¹⁷ A 2003 survey found that 54% of primates at 22 laboratories were singly housed – although this was also likely to have been a low estimate, as the study ill-advisedly included in its definition of “social housing” instances of

“grooming-contact” housing, in which singly housed primates have some limited tactile contact with one another through barred or mesh barriers.¹⁸ A survey of primate housing at the Washington National Primate Research Center from 2004 to 2006 found that at least 63% of the monkeys were singly caged.¹⁹

An ongoing concern is that laboratories sometimes permit single housing of primates for the sake of convenience rather than necessity. For example, many laboratories singly house primates who have had surgical implants, such as head posts or other equipment, even though it is possible to successfully house them socially.²⁰

Given the government mandate that social housing of primates in laboratories should be the default position, the aforementioned figures are cause for concern, particularly because they indicate that rates of single housing may be increasing.

Preliminary analysis of primate single-housing data

In the interest of conducting a current and more comprehensive evaluation of trends in primate single housing and the justifications provided, we attempted to undertake a new analysis of all single-housing exceptions submitted in annual reports by laboratories to the USDA from 2010 to 2013 – the years for which data are currently available online. While the total number of facilities that confined primates (191 in 2010, 188 in 2011, 192 in 2012, and 184 in 2013) stayed relatively flat over the four years, there was a steady increase in the number of facilities that reported single-housing exceptions, from 30 (16%) in 2010 to 53 (29%) in 2013.

However, when we attempted to look more closely at these exceptions, in order to determine trends in the numbers of singly housed primates and the explanations given, we found glaring inadequacies in the data available on the USDA site. This inadequacy stemmed mainly from the failure of laboratories in meeting reporting requirements. From 2010 to 2013, the percentage of laboratories reporting singly housed primates that failed to specify the number of primates singly housed for experimental reasons and the scientific justification for it – both required by law – increased from 36% to 47%. Worryingly, it also appeared that some, or all, of the required information was improperly redacted from many facilities’ reports. We also observed that several facilities that had provided very detailed exception letters in 2010 produced only very vague information in 2013 or, as noted above, redacted all the information, showing a growing trend toward secrecy.

Government response

In December 2014, we informed the USDA of the problematic reports and requested the agency’s assis-

tance in securing the missing data. In February 2015, we received correspondence from the USDA (a personal communication), which stated, “We have had discussions and are finalising our position.” We heard nothing further, but in March, the USDA sent an e-mail to all its stakeholders announcing changes to its *Inspection Guide* – used by its inspectors to identify violations of the AWA at the facilities they inspect. The announcement noted that the revisions included a “more consistent procedure for reporting exceptions and exemptions on the Annual Report.”²¹ Upon closer examination, it became clear that the revised inspection guide now specified that exemption of a primate from “some or all of the environmental enhancement plan” – which would include social housing – “should not be reported on the Annual Report” [*emphasis in the original*].²² Prior to the recent revision to the inspection guide, it was standard operating procedure for laboratories to report single housing of primates.

Rather than ensuring that laboratories were properly reporting single housing of primates, the USDA instead – we suspect in consultation with the laboratory community – took the backward step of simply exempting facilities from having to submit this information at all.

Discussion

A 2011 study seeking to assess the effectiveness of the 1985 AWA primate psychological health amendments determined that “the current system of laboratory animal care and record keeping is inadequate to properly assess AWA impacts on primate psychological well-being and that more is required to ensure the psychological well-being of primates.”¹⁷ It was already difficult to ascertain this information, and now the USDA has made this task virtually impossible.

Even with the reporting requirement in place, laboratories were often failing to approve, document, and report the single housing of primates. For instance, a 2011 USDA inspection report for a US contract laboratory cited the company for singly housing 83% of the more than 6,000 primates at the facility without securing the necessary justifications or reporting the matter to the USDA.^{23,24} This number amounts to more than 4% of all primates housed in US laboratories.

Any previously reported figures are also underestimations, because institutions have only been required to report the numbers of primates who are singly housed for ‘experimental’, but not veterinary, reasons; this could account for a third more singly housed primates.²⁵

Conclusions

On the 30th anniversary of the amendments to promote the psychological well-being of primates, the

evidence that singly housed primates suffer is overwhelming, as is the proof that the US government and laboratories are failing to confront this rapidly growing problem effectively. The USDA's recent revisions to reporting requirements will limit the availability of data, and consequently will stifle informed debate on the suffering of primates in laboratories and failures of the existing regulatory system. To address this issue meaningfully, we need *more* transparency and accountability, not less.

Author for correspondence:

Dr Alka Chandna
People for the Ethical Treatment of Animals
501 Front Street
Norfolk, VA 23510
USA
E-mail: AlkaC@peta.org

Michael Niebo
People for the Ethical Treatment of Animals
501 Front Street
Norfolk, VA 23510
USA

Dr Stacy Lopresti-Goodman
Department of Psychology
Marymount University
2807 N. Glebe Road
Arlington, VA 22207
USA

Justin Goodman
People for the Ethical Treatment of Animals
501 Front Street
Norfolk, VA 23510
USA
and
Department of Sociology
Marymount University
2807 N. Glebe Road
Arlington, VA 22207
USA

References

- ¹ Carbone, L. (2004). *What Animals Want: Expertise and Advocacy in Laboratory Animal Welfare Policy*, 304pp. Oxford, UK: Oxford University Press.
- ² US Congress (1985). *Public Law 99-198, Food Security Act of 1985, Subtitle F – Animal Welfare. Title XVII*. Available at: <https://awic.nal.usda.gov/public-law-99-198-food-security-act-1985-subtitle-f-animal-welfare> (Accessed 31.05.15).
- ³ US Department of Agriculture (1991). Final Rules: Animal Welfare; Title 9, CFR (Code of Federal Register) Part 3. Standards. *Federal Register* 55 (No. 32), 6426-6505. Available at: <https://awic.nal.usda.gov/final-rules-animal-welfare-9-cfr-part-3> (Accessed 31.05.15).
- ⁴ National Research Council (2011). *Guide for the Care and Use of Laboratory Animals: Eighth Edition*, 248pp. Washington, DC, USA: The National Academies Press.
- ⁵ Baker, K.C., Bloomsmith, M.A., Oettinger, B., Neu, K., Griffis, C., Schoof, V. & Maloney, M. (2012). Benefits of pair housing are consistent across a diverse population of rhesus macaques. *Applied Animal Behaviour Science* 137, 148-156.
- ⁶ Bayne, K. (2005). Macaques. From the booklet series *Enrichment for Nonhuman Primates*. Washington, DC, USA: Department of Health and Human Services. Available at: http://grants.nih.gov/grants/olaw/Enrichment_for_Nonhuman_Primates.pdf (Accessed 05.04.15).
- ⁷ Shively, C.A., Clarkson, T.B. & Kaplan, J.R. (1989). Social deprivation and coronary artery atherosclerosis in female cynomolgus monkeys. *Atherosclerosis* 77, 69-76.
- ⁸ Bellanca, R.U. & Crockett, C.M. (2002). Factors predicting increased incidence of abnormal behavior in male pigtailed macaques. *American Journal of Primatology* 58, 57-69.
- ⁹ Brent, L., Lee, D.R. & Eichberg, J.W. (1989). The effects of single caging on chimpanzee behavior. *Laboratory Animal Science* 39, 345-346.
- ¹⁰ Kalcher, E., Franz, C., Crailsheim, K. & Preuschoft, S. (2008). Differential onset of infantile deprivation produces distinctive long-term effects in adult ex-laboratory chimpanzees (*Pan troglodytes*). *Developmental Psychobiology* 50, 777-788.
- ¹¹ Nash, L.T., Fritz, J., Alford, P.A. & Brent, L. (1999). Variables influencing the origins of diverse abnormal behaviors in a large sample of captive chimpanzees (*Pan troglodytes*). *American Journal of Primatology* 48, 15-29.
- ¹² Coelho, A.M., Carey, K.D., & Shade, R.E. (1991). Assessing the effects of social environment on blood pressure and heart rates of baboons. *American Journal of Primatology* 23, 257-267.
- ¹³ Kessel, A. & Brent, L. (2001). The rehabilitation of captive baboons. *Journal of Medical Primatology* 30, 71-80.
- ¹⁴ Dettmer, E. & Fragaszy, D. (2000). Determining the value of social companionship to captive tufted capuchin monkeys (*Cebus apella*). *Journal of Applied Animal Welfare Science* 3, 293-304.
- ¹⁵ Lilly, A.A., Mehlman, P.T. & Higley, J.D. (1999). Trait-like immunological and hematological measures in female rhesus across varied environmental conditions. *American Journal of Primatology* 48, 197-223.
- ¹⁶ Doyle, L.A., Baker, K.C. & Cox, L.D. (2008). Physiological and behavioral effects of social introduction on adult male rhesus macaques. *American Journal of Primatology* 70, 542-550.
- ¹⁷ Balcombe, J., Ferdowsian, H. & Durham, D. (2011). Self-harm in laboratory-housed primates: Where is the evidence that the Animal Welfare Act amendment has worked? *Journal of Applied Animal Welfare Science* 14, 361-370.
- ¹⁸ Baker, K.C., Weed, J.L., Crockett, C.M. & Bloomsmith, M.A. (2007). Survey of environmental enhancement programs for laboratory primates. *American Journal of Primatology* 69, 377-394.
- ¹⁹ Thom, J.P. & Crockett, C.M. (2008). Managing environmental enhancement plans for individual research projects at a national primate research center. *Journal of the American Association for Laboratory Animal Science* 47, 51.

- ²⁰ DiVincenti, L., Jr & Wyatt, J.D. (2011). Pair housing of macaques in research facilities: A science-based review of benefits and risks. *Journal of the American Association for Laboratory Animal Science* 50, 856.
- ²¹ USDA (2015). *USDA Revises Its Inspection Guide to Improve Oversight of Research Facilities*. Washington, DC, USA: United States Department of Agriculture. Available at: <http://content.govdelivery.com/accounts/USDAAPHIS/bulletins/f4e94e> (Accessed 31.05.15).
- ²² USDA (2015). *Animal Welfare Inspection Guide*, 424pp. Washington, DC, USA: United States Department of Agriculture. Available at: http://www.aphis.usda.gov/animal_welfare/downloads/Animal%20Care%20Inspection%20Guide.pdf (Accessed 31.05.15).
- ²³ USDA (2011). *Inspection Report for SNBL USA, Ltd*. Washington, DC, USA: United States Department of Agriculture. Available at: <http://www.mediapeta.com/peta/PDF/July132011-78percentsinglyhoused.pdf> (Accessed 25.06.15).
- ²⁴ USDA (2011). *Annual Report for SNBL USA, Ltd*. Washington, DC, USA: United States Department of Agriculture. Available at: <http://www.mediapeta.com/peta/PDF/SNBL-AnnualReportfor2011.pdf> (Accessed 25.06.15).
- ²⁵ Lee, D.R. (2013). *Social housing strategies for nonhuman primates* [PowerPoint slides]. Available at: http://www.aclam.org/content/files/files/forum2013/aclam_forum_2013_lee_social.pdf (Accessed 05.04.15).