Legal Loophole for Subminimal Floor Area for Caged Macaques

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Macaques are biologically adapted to an arboreal or semi-arboreal life style. They spend much or most of the day and all of the night in elevated locations well off the ground as a safeguard against predators including humans. When they are on the ground during an alarming situation, they will inevitably flee upward on trees, roofs and other elevated, safe places (Lindburg, 1971; Roonwal & Mohnot, 1977; Chopra, Seth, & Seth, 1992). Free access to an elevated refuge is an essential security factor for them, and hence a precondition for their emotional well-being. When they are kept in laboratories without proper access to the vertical dimension of their enclosure, macaques "might perceive the presence of humans above them as particularly threatening" (National Research Council, 1998, p. 118). Given the choice captive macaques will prefer high over low resting surfaces (O'Neill-Wagner, 1994) and dominant animals will be privileged to occupy high ones while subordinate individuals have to be content with low ones (Reinhardt, 1992).

Federal regulations of the United States Department of Agriculture (USDA) do not explicitly address the need of primates for access to the vertical dimension of their primary enclosures, however, they at least list perches as an example of mandatory environmental enrichment (USDA, 1991, p. 6500). Several studies have demonstrated that perches do provide effective environmental enrichment. Sitting on a perch with a good view of activities within the room is a favorite position of caged macaques (van Wagenen, 1950; Schmidt, Dold, & McIntosh, 1989; Watson, 1991; Woodbeck & Reinhardt, 1991; Bayne, Hurst, & Dexter, 1992; Shimoji, Bowers, & Crockett, 1993). "The ability to perch and to have adequate vertical space to keep the whole body above the cage floor can improve their well-being" (National Research Council, 1996, p. 27), probably by fostering a feeling of security (Reinhardt, 1989; cf. DeVore & Hall, 1965; Hamilton, 1982; Anderson, 2000).

A perch indirectly increases available cage space by making the vertical dimension accessible to the caged subject. However, this does not necessarily imply that the installation of a perch is a means of optimal space usage. The contrary can be the case: a perch that is not appropriately placed can reduce the available space beyond the minimum required by the caged subject to make "normal postural adjustments with freedom of movement" (USDA, 1991, p. 6499). The Animal Welfare Act's regulations aptly emphasize that "minimum space requirements must be met even if perches, ledges, swings or other suspended fixtures are placed in the enclosure" (p. 6499). Unfortunately, however, the regulations disqualify this stipulation in the next sentence which states that "low perches and ledges that do not (sic) allow the space underneath them to be comfortably occupied by the animal will be counted as part of the floor space" (p. 6499). This explicit self-contradiction implies that a primate cage with a built-in perch is in accordance with federal law even if the perch blocks part of the minimumfloor space. This legal loophole for subminimal floor area is echoed in the National Research Council's Guide for the Care and Use of Laboratory Animals which also points out that "low resting surfaces that do not (sic) allow the space under them to be comfortably occupied by the animal should be counted as part of the floor space" (National Research Council, 1996, p. 26).

Figure 1 demonstrates a standard macaque cage with the typical built-in perch (cf., Bryant, Rupniak, & Iversen, 1988, Figure 1A). The height of the cage meets the legal minimum requirements but is insufficient to allow the proper placement of a perch, ledge or any other raised structure. The perch shown in Figure 1 interferes with the animals' minimum spatial requirements. It does not allow the space underneath to be comfortably occupied by the [left] animal, let alone allow for normal postural adjustments with freedom of movement. To correct the problem, the floor space would have to be increased by the area under the perch, or the height of the cage would have to be increased so that the perch could be placed at a level that permits an animal to comfortably sit on it without touching the ceiling of the cage and use the space below it for free postural adjustments with freedom of movement. "Size of enclosure is only of significance in terms of usable space" (International Primatological Society, 1993, p. 8) and proper placement of perches, ledges and other raised structures (cf., National Research Council, 1998). The space beneath a too low perch is not usable, hence it should not be counted as part of the minimum floor area.

The placement of the perch does not allow the space underneath it to be comfortably occupied. It blocks part of the legal minimum floor area that is necessary for normal postural adjustments with freedom of movement (photo by Matt Rossell).

The USDA regulations pertaining to the minimum space requirements of nonhuman primates and the fitting of elevated resting surfaces are contradictory. They implicitly condone the prevailing perch design that allows maximal usage of animal room space by stacking the cages on top of each other but fails to address the animals' minimal spatial needs for normal postural adjustments with freedom of movement. An amendment to the regulations is needed to clarify that perches, ledges, swings, or other suspended fixtures have to be installed in such a way that they do not block part of the minimum floor space that is needed by an animal to make species-typical postural adjustments with freedom of movement.

Eight years after implementation of its animal welfare regulations the USDA published a Draft Policy on Environmental Enhancement for Nonhuman Primates which stipulates that "elevated resting structures ... should ... not (sic) interfere with normal locomotion" (United States Department of Agriculture, 1999, p. 38148). Unfortunately, this policy failed to reach the stage of implementation (Anonymous, 2002).

REFERENCES

Anderson, J. R. (2000). Sleep-related behavioural adaptations in free-ranging anthropoid primates. Sleep Medicine Reviews, 4, 355-373.

Anonymous. (2002). USDA's Primate Policy is scuttled by research industry. AWI Quarterly, 51 (4), 20.

Bayne, K., Hurst, J. K., & Dexter, S. L. (1992). Evaluation of the preference to and behavioral effects of an enriched environment on male rhesus monkeys. Laboratory Animal Science, 42, 38-45.

Bryant, C. E., Rupniak, N. M. J., & Iversen, S. D. (1988). Effects of different environmental enrichment devices on cage stereotypies and autoaggression in captive cynomolgus monkeys. Journal of Medical Primatology, 17, 257-269.

Chopra, P. K., Seth, P. K., & Seth, S. (1992). Behavioural profile of free-ranging rhesus monkeys. Primate Report, 32, 75-105.

DeVore, I. , & Hall, K. R. L. (1965). Baboon ecology. In I. DeVore (ed), Primate Behavior - Field Studies of Monkeys and Apes (pp. 20-52) New York, NY: Holt, Rinehart and Winston.

Hamilton, W. J. (1982). Baboon sleeping site preferences and relationships to primate grouping patterns. American Journal of Primatology, 3, 41-53.

International Primatological Society. (1993). International guidelines for the acquisition, care and breeding of nonhuman primates, Codes of Practice 1-3. Primate Report, 35, 3-29.

Lindburg, D. G. (1971). The rhesus monkey in North India: an ecological and behavioral study. In L. A. Rosenblum (ed), Primate Behavior: Developments in Field and Laboratory Research, Volume 2 (pp. 1-106) New York, NY: Academic Press.

National Research Council (1996). Guide for the Care and Use of Laboratory Animals, 7th Edition. Washington, DC: National Academy Press.

National Research Council (1998). The Psychological Well-Being of Nonhuman Primates . Washington, DC: National Academy Press.

O'Neill-Wagner, P. L. (1994). When trying to get your monkeys to behave, try perches. In Touch, 1 (2), 6-8.

Reinhardt, V. (1989). Evaluation of the long-term effectiveness of two environmental enrichment objects for singly caged rhesus macaques. Lab Animal, 18 (6), 31-33.

Reinhardt, V. (1992). Space utilization by captive rhesus macaques. Animal Technology, 43, 11-17.

Roonwal, M. L., & Mohnot, S. M. (1977). Primates of South Asia - Ecology, Sociobiology, and Behavior. Cambridge, MA: Harvard University Press.

Schmidt, E. M., Dold, G. M., & McIntosh, J. S. (1989). A perch for primate squeeze cages. Laboratory Animal Science, 39, 166-167.

Shimoji, M., Bowers, C. L., & Crockett, C. M. (1993). Initial response to introduction of a PVC perch by singly caged Macaca fascicularis.Laboratory Primate Newsletter, 32 (4), 8-11.

United States Department of Agriculture (1991). Title 9, CFR (Code of Federal Register), Part 3. Animal Welfare; Standards; Final Rule. Federal Register, 56 (32), 6426-6505.

United States Department of Agriculture (1999). Animal welfare; draft policy on environmental enhancement for nonhuman primates. Federal Register, 64, 38145-38150.

van Wagenen, G. (1950). The monkeys. In E. J. Farris (ed), The Care and Breeding of Laboratory Animals (pp. 1-42) New York, NY: John Wiley.

Watson, D. S. B. (1991). A built-in perch for primate squeeze cages. Laboratory Animal Science, 41, 378-379.

Woodbeck, T., & Reinhardt, V. (1991). Perch use by Macaca mulatta in relation to cage location. Laboratory Primate Newsletter, 30 (4), 11-12.