COMMENTARY

Legal Loophole for Subminimal Floor Area for Caged Macaques

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Macaques are biologically adapted to an arboreal or semiarboreal lifestyle. 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 inevitably flee upward on trees, roofs, and other elevated, safe places (Chopra, Seth, & Seth, 1992; Lindburg, 1971; Roonwal & Mohnot, 1977). 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 whereas subordinate individuals have to be content with low ones (Reinhardt, 1992).

Federal regulations of the U.S. 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 (Bayne, Hurst, & Dexter, 1992; Schmidt, Dold, &
McIntosh, 1989; Shimoji, Bowers, & Crockett, 1993; van Wagenen, 1950; Watson, 1991; Woodbeck & Reinhardt, 1991). “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 (Anderson, 2000; DeVore & Hall, 1965; Hamilton, 1982; Reinhardt, 1989).

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 minimum floor space. This legal loophole for subminimal floor area is echoed in the National Research Council’s (1996) 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” (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 normal 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 (National Research Council, 1998). The space beneath a perch that is too low is not usable; hence, it should not be counted as part of the minimum floor area.
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 (1999) published a Draft Policy on Environmental Enhancement for Nonhuman Primates, which stipulates that “elevated resting structures … should … not [sic]
interfere with normal locomotion” (p. 38148). Unfortunately, this policy failed to reach the stage of implementation (Anonymous, 2002).

REFERENCES


