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# Compassion for Animals in the Laboratory: Impairment or Refinement of Research Methodology?

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There are now signs also in the USA that the importance of a positive human-animal relationship in research laboratories is appreciated more seriously, and that in addition to knowledge and skills, primary attributes of animal research personnel must be feelings of compassion and sensitivity toward animals to safeguard the reliability of scientific research data.

Kindness and concern for animals in the laboratory have often been stigmatized as subjective, emotional qualities that can undermine the 'objectivity' of biomedical and psychological research. As such, these qualities have traditionally not been encouraged and fostered in animal research personnel. Even the mere naming of study subjects has often been questioned as jeopardizing scientific objectivity (Arluke, 1988; Reinhardt, 1998; Wolfle, 2002). Typically a laboratory animal was labeled with an identification code (Arluke, 1988) and considered as a standardized biological research tool (Hummer, 1965; Bowd, 1980) that was referred to as "it" rather than "he" or "she" to guarantee scientific integrity (Reinhardt, 1996). The objectification of laboratory animals was often associated with a lack of interest in the welfare of the deindividualized research object (cf. Arluke, 1988).

A prestigious investigator acknowledged in a 1987-published article that "most investigators think only briefly about the care and handling of their animals and clearly have not made it an important consideration in their work" (Traystman, 1987, p. 108). Many researchers seemingly did not realize the influence of animal husbandry conditions on the animals they studied and the experimental results obtained from them (Davis et al., 1973; Reinhardt, 1991a; Claassen, 1994). "Many principal investigators do not handle animals at all, although a few occasionally may do surgery after the animal has been prepared fully by technicians" (Arluke, 1988, p. 104). The traditional lack of concern for animals is most clearly reflected in the federal animal welfare regulations of 1989 explicitly excluding the by far most common laboratory animals - rats and mice - in their definition of the term "animal" (United States Department of Agriculture, 1989) thereby making them quasi unworthy of compassion and ignoring the possibility that the quality of scientific data collected from these unprotected animals may well depend on their well-being.

It should be noted here that affection toward laboratory animals - without exceptions - has been advocated in European legislation already in the 80's. The European Council Directive points out that "the performance of an animal during an experiment depends very much on its confidence in man, something which has to be developed. ... It is therefore recommended that frequent contact should be maintained so that the animals become familiar with human presence and activity. Where appropriate, time should be set aside for talking, handling and grooming. The staff should be sympathetic, gentle and firm when associating with the animals" (European Economic Community, 1986, p. 13).

There are now signs also in the USA that the importance of a positive human-animal relationship in the research laboratory is appreciated more seriously, and that "in addition to knowledge and skills, primary attributes [of animal research personnel] must be feelings of compassion and sensitivity toward animals" (Halpern-Lewis, 1996, p. 60).

- The American Association for Laboratory Animals Science notes in its 2001-published pamphlet *Cost of Caring: Recognizing Human Emotions in the Care of Laboratory Animals* that "kindness and concern for animals are desirable characteristics of anyone involved in animal research [and that] the bond between people and animals in the laboratory, if understood and used consistently, can minimize certain variables related to stress in the animals" (American Association for Laboratory Animal Science, 2001, p. 2).
- The Institute for Laboratory Animal Research devoted the first 2002-issue of its journal to *Implications of Human-Animal Interactions and Bonds in the Laboratory*. The editor of this issue sets the tone with the observation that attachment relationships with the animals in one's charge "are the results of compassionate people doing their job right" (Wolfe, 2002, p. 2).
- The Associate Director of AAALAC [American Association for Accreditation of Laboratory Animal Care] emphasizes in a 2002-published article that "people who care about their animals are committed to promoting and ensuring the well-being of those animals" (Bayne, 2002, p. 4) and elaborates that positive relationships "between facility personnel and laboratory animals may result in an overall reduction in stress for the animals and may serve to buffer the potential stress of certain experimental situations resulting from the novelty of the procedure area, an intellectual challenge, disease conditions, or certain experimental procedures (e.g., gavaging, tail snips, blood sampling). .. Administrators of animal research, testing, and teaching programs should look for opportunities to encourage the development and maintenance of bonds between personnel and laboratory animals. .. The outcome will be more refined research, improved animal well-being, and personnel who gain more reward from their jobs" (Bayne, 2002, p. 8).
- During a recent Internet discussion on the relationship of laboratory personnel with the animals in their charge (Anonymous, 2003), most correspondents agreed that it is almost impossible to remain emotionally distant from the animals (cf., Davis, & Balfour, 1992; Herzog, 2002; Wolfe, 2002) and that empathy can even prevail in researchers who go to great length to try to ensure that their data are objective. There was a consensus that the emotional attachment provides an assurance that the animals receive optimal care, both physically and behaviorally (cf., Mroczek, 1994; Bayne, 2002; Herzog, 2002). This in turn was considered as safeguard that the animals are reliable research subjects yielding scientifically valid test results (cf., Anchel, 1976; Home Office, 1989; Donnelley, 1990; Warwick, 1990; National Research Council, 1996; Poole, 1997). Several participants of this discussion emphasized that they give names to their animals as a means to quickly remember and recognize individuals (cf., Reese, 1991; de Waal, 1992; Sokol, 1993) or/and as a reflection of their empathy. It was pointed out that taking the time to discover the uniqueness of individual animals and to get to know their species-typical needs well enough to develop empathy for them was a condition for the formation of close ties 'even' with the perhaps less charismatic species.

The promotion of affection towards laboratory animals has scientific and empirical underpinning. It has been shown in rabbits that frequent, gentle handling lessens the animals' fear response during stressful situations (Anderson, Denenberg, & Zarrow, 1972; Kertsen, Meijsser, & Metz, 1989). Rabbits who receive special positive attention from personnel show a markedly increased resistance to the development of atherosclerosis compared to subjects who receive no extra attention (Nerem, Levensque, & Cornhill, 1980). Regular gentle handling has a protective effect on the experimental induction of stomach ulcers in rats (Weininger, 1954). Obviously, the gentle touch provided by the investigator, technician or careperson

is as important as the physical environment in giving the animal "a sense of security in the presence of humans who, in other circumstances may subject them to uncomfortable, perhaps even painful procedures" (Boers et al., 2002, p. 47). Regular gentle handling buffers excitability in chickens, rats, sheep, cats, snakes, pigs, rabbits, calves, hamsters (Hughes & Black, 1976; Hirsjärvi & Junnila, 1988; Hargreaves, & Hutson, 1990; Carlstead, Brown, & Strawn, 1993; Kiel, 1995; Rochlitz, 2000; Tanida, Miura, Tanaka, & Yoshimoto, 1995; Jezierski & Konecka, 1996; Lensink, Boivin, Pradel, Le Neindre, & Veissier, 2000; Kuhnen, 2002) and probably in most other laboratory animals as well, while decreasing the corticosterone response to handling (Barnett, Hemsworth, Hennessy, McCallum, & Newman, 1994). It has been noted in several nonhuman primate species that individuals show a reduction in the expression of behavioral pathologies when they receive more attention from friendly personnel (Bayne, Dexter, & Strange, 1993; Choi, 1993; Baker, 1997). Studies with macaques have demonstrated that individuals can readily be trained to cooperate during handling procedures, thus minimizing stress responses resulting from anxiety and fear, if the handling personnel has a positive relationship based on kindness and trust with the subjects (see Figure 1; Reinhardt, 1991b; Reinhardt, Cowley, Eisele, & Scheffler, 1991; Reinhardt & Cowley, 1992). Empirical evidence suggests that the affectionate bond "conveys to the animal a quiet sense of assurance on which coping strategies can be developed for dealing with other stressful aspects of the laboratory" (Wolfe, 1987, p. 1221). Scientific data are still missing to substantiate the logical assumption that the presence of personnel with whom an animal has developed a bond based on trust mitigates extraneous, data-influencing reactions associated with stressful experimental procedures (cf., Anchel, 1976). Data on chimpanzees suggest that the presence of an attachment figure [human caretaker] attenuates the distress exhibited by young individuals in a novel situation (Miller, Bard, Juno, & Nadler, 1986).



*Figure 1. Primary attributes of animal research personnel must be feelings of compassion toward animals to guarantee their optimal care and to minimize stress-related variability of research data collected from them.*

Compassion implies an acute awareness of an individual animal's state of emotional, behavioral and physical well-being and the urge to provide the animal with the conditions necessary for optimal well-being. "There is every reason to believe that individuals who care about their wards on a personal level actually treat the animals better" (Herzog, 2002, p. 30). Compassion for animals used in research, testing and teaching should not be regarded as subjective but as a sound methodological base for scientifically valid animal research (cf., Mahoney, 1992). "Researchers must continue to question

the barriers that have traditionally been erected against forming HABs [human-animal bonds] in the name of objectivity and to investigate seriously the ways in which fostering the formation of HABs can promote animal welfare without compromising the scientific respectability of research" (Russow, 2002, p. 36-37). Rather than compromising research, these human-animal bonds should be considered the very foundation of scientifically sound research methodology. After all, would it not be naïve to expect scientifically reliable research data from an animal who is

- emotionally disturbed (e.g., anxiety and fear prior to and during a research-related handling procedure),
- shows behavioral pathologies triggered by species-inappropriate housing conditions (e.g., self-mutilation of individually caged social animals), or
- suffers an unnoticed clinical problem (e.g., reduced feeding as a result of a decaying tooth)?

A compassionate attitude towards laboratory animals is a safeguard that these extraneous, potentially data-influencing variables are controlled as best as possible.

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