The Revision of European Housing Guidelines for Laboratory Animals: Expectations from the Point of View of Animal Welfare

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Summary — The housing guidelines for laboratory animals laid down in Appendix A of the European Convention for the protection of laboratory animals ETS 123 have been taken over in an Annex of *Council Directive 86/609/EEC*. Article 5 of the Convention and Articles 5a and 5b in the Directive state that housing conditions for laboratory animals must be appropriate to their health and well-being and that any restriction on the extent to which an experimental animal can satisfy its physiological and ethological needs shall be limited to the absolute minimum. However, the concrete housing guidelines depicted in the Annexes are inadequate to meet these principles. In addition, for many commonly used species, such as fish and amphibians, there are no housing guidelines at all. In recognition of these deficiencies, the Council of Europe is currently revising Appendix A of the Convention. Efforts are aimed at providing animals with housing conditions that enable them to live in harmonious, stable groups, fulfil their species-specific locomotory needs and engage in meaningful activity. The European Commission intends to revise the Directive accordingly. However, legal problems remain to be overcome, before the new guidelines can actually be voted upon for inclusion in either document.

Key words: *environmental enrichment, ethological needs, housing guidelines, physiological needs.*

Existing European Housing Guidelines

At the European level, there are two legal documents in which provisions are made for the housing of laboratory animals. The first is *Convention ETS 123 of the Council of Europe for the Protection of Vertebrate Animals Used for Experimental and other Scientific Purposes*, which came into effect in 1986 (1). The second European legal document is *Council Directive 86/609/EEC of 24 November 1986 on the approximation of laws, regulations and administrative provisions of the Member States regarding the protection of animals used for experimental and other scientific purposes* (2).

Whereas the Directive is binding for all 15 Member States of the European Union, the Convention does not have a binding status for the 43 Member States of the Council of Europe unless they have signed it and ratified it, in which latter case they become the so-called "Parties". Currently, the Parties to *Convention ETS 123* are: Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, The Netherlands, Norway, Spain, Sweden, Switzerland, the United Kingdom and the EU. Signatory States are: the Czech Republic, Ireland, Portugal and Turkey.

Article 5 of *Convention ETS 123* states:

Any animal used or intended for use in a procedure shall be provided with accommodation, an environment, at least a minimum degree of freedom of movement, food, water and care, appropriate to its health and wellbeing. Any restriction on the extent to which an animal can satisfy its physiological and ethological needs shall be limited as far as practicable.

Concerning housing requirements, the wordings of the Convention and the Directive are similar but not identical. The respective Articles 5a and 5b of the Directive states:

All experimental animals shall be provided with housing, an environment, at least some freedom of movement, food, water and care which are appropriate to their health and well-being; any restriction on the extent to which an experimental animal can satisfy its physiological and ethological needs shall be limited to the absolute minimum.

Guidelines for the accommodation and care of laboratory animals are laid down in Appendix A to *Convention ETS 123*. In this Appendix, a General Part gives provisions on:

— the physical facilities;

— the environment in the holding rooms and its control; and

— the care of the animals.

In addition, there are a number of tables and figures giving guidelines for ambient room temperature, for local quarantine periods and, last but not least, for the caging of different animal species. In the current Appendix A, data are laid down for the cage sizes for small rodents and rabbits, cats, dogs, non-human primates, pigs, farm animals used for experimental purposes, and birds. For some of these animals, different numbers are provided, depending upon whether they are being housed in stock, during procedures or for breeding purposes.

In the Directive, guidelines for accommodation and care of animals are provided in Annex II. These guidelines are identical to those of the Convention.

Basic Ethological Needs of the Animals

In accordance with Articles 5 of both the Convention and the Directive, the basic physiological and ethological needs of the most commonly used laboratory animals must be considered when determining their respective housing requirements. The most important basic needs are the needs for social behaviour, locomotion and meaningful activity. Naturally, the precise form of these basic needs varies from animal species to animal species. It would exceed the scope of this presentation to mention all the relevant species-specific physiological and ethological needs.

Enabling the animals to have contact with compatible companions is regarded as the most important prerequisite for a satisfactory housing situation by most ethologists. All of the major animal species used for scientific purposes are social animals. If they are forced to spend significant time in isolation, they suffer great distress and are prone to develop severe types of abnormal behaviour. Enclosures should be sufficiently large to permit the establishing of stable harmonious groups: the animals must be provided with the possibility to have contact with conspecifics and also with the possibility to retreat.

Due to their different life forms in their natural habitats, the different species of laboratory animals have developed different locomotory habits. Therefore, they require different forms of accommodation in order to be able to fulfil these individual needs. Examples will illustrate this point. Whereas climbing is essential for cats and non-human primates such as macaques, rabbits move forward by hopping, and dogs need extensive daily exercise. However, there are also other species-specific habits, such as the bipedal posture of rats that serves these animals as an orienting stance. It is also true that if the animals are deprived of the opportunity to perform such behaviours, they are prone to suffer distress and to develop psychological and even physiological and anatomical abnormalities, such as bone deformations.

Last but not least, the animals ought to be provided with opportunities for meaningful activity. Animal enclosures should include adequate enrichment, as barren environments are another factor causing distress and inducing stereotypies. All of the vertebrates used for scientific purposes are intelligent, active animals that require adequate occupation. Foraging devices, food puzzles, toys, sticks to gnaw on, nesting material and straw are examples of environmental enrichment devices. From case to case, it must be decided which items best suit the respective species, and there must be constant evaluation of which items are appropriate to the respective individual animals.

An indication of the fulfilment of these basic physiological and ethological needs is if the animal shows a daily behavioural pattern that matches the one it would have under natural conditions and if it does not show abnormal behaviour.

Evaluation of Housing Guidelines

The provision made in Article 5 of the Convention that "the extent to which an animal can satisfy its physiological and ethological needs shall be limited as far as practicable" (and more so made in the Directive that such restrictions shall be limited to an "absolute minimum") are not met by the provisions laid down in Appendix A of the Convention, nor in Annex II of the Directive.

In the following, some examples are given to indicate the extent to which the current housing guidelines are inadequate. Whereas an average-sized rat would require a cage height of at least 18cm to perform the above mentioned bipedal position, the current standard cage has a height of only 14cm (3). For rabbits, current cage size recommendations set forth 2000cm^2 for a 2kg rabbit, whereas a rabbit would require approximately double those cage dimensions to perform one hop (4). And a 9kg macaque could never sit upright on a perch in a 90cm-high cage with its long tail hanging freely, let alone climb or jump (5). Thus, the cage dimensions currently recommended are insufficient to enable the animals to engage in normal locomotory behaviour. They are also much too small to keep animals in social groups. Additionally, there are no statements encouraging environmental enrichment or social housing in larger enclosures to be found in the Appendix.

Thus, there is an inconsistency between the wordings of Article 5 of the Convention and the accompanying Appendix. The housing requirements set more than 15 years ago no longer represent good current practice — if they ever did. They cause distress to the animals, to the extent that some animals develop physical and psychological abnormalities. Other deficiencies in Appendix A are that a number of animal species used for experi-

mental purposes are not covered at all, for example, fish, amphibians and reptiles. Other animal species are combined together in one table even though their housing needs vary. For example, there is only one table for all non-human primates, covering species as diverse as small squirrel monkeys and large macaques and baboons.

Another deficiency is that the guidelines are not mandatory; they are only recommendations. Legal reasons have been put forward for this.

Current Developments to Revise Housing Guidelines for Laboratory Animals

Article 30 of *Convention ETS 123* states that "The Parties shall . . . every three years . . . hold Multilateral Consultations within the Council of Europe to examine the application of this Convention and the advisability of revising it or extending any of its provisions". At the last (and third) Multilateral Consultation of the Parties to the Convention in May 1997, the Parties decided that the housing guidelines in Appendix A of the Convention were to be revised, as they no longer represented the state-of-the-art. Issues addressed are similar to the ones mentioned above.

In fulfilment of this decision, expert groups for all relevant laboratory animal species were established in the winter of 1997/1998. All interest groups who are observers at the Multilateral Consultations were entitled to nominate experts into these groups. Eurogroup for Animal Welfare has nominated experts for all groups and has played an active role in the ongoing revision of Appendix A. In June 1998 a *Protocol of Amendment (ETS 170)* providing for a simplified procedure for the amendment of the technical appendices to the Convention was opened for signature.

In January 1999, May 2000, May 2001, January 2002 and October 2002, the Council of Europe held Working Parties, during which the Parties to the Convention and the observers discussed the progress of the work done by the expert groups. The work on the general part and on the species-specific sections on rodents and rabbits, cats, dogs and ferrets has been finalised. Discussions are continuing on the sections on non-human primates, amphibians, reptiles and birds. The work on the sections on ruminants, pigs and fish has also begun.

It is envisaged that the most advanced documents will be adopted in 2003. However, a number of legal problems continue to prevent the voting on the revised housing guidelines. One of the main problems is that the *Protocol of Amendment ETS 170* has yet to be signed and ratified by all of the 14 Parties to the Convention. Another legal problem arises from the fact that the European Union is Party to the Convention, meaning that EU Member States are both Parties to the Convention as individual nations but also as Member States of the European Union. The competences of the European Commission and of the EU Member States in regard to the protection of laboratory animals are mixed. For example, areas such as animal use in basic research and for educational purposes are not covered by *Council Directive 86/609/EEC*, whereas they are by *Convention ETS 123*. The concrete legal implications deriving from this mixing of competences — mainly the question of who will be entitled to negotiate and who to vote on the revised housing guidelines — remain to be clarified.

Perspectives from the Animal Welfare Point of View

The housing requirements for laboratory animals should be designed in a way to enable the animals to fulfil all of their basic ethological and physiological needs. From the point of view of animal welfare, restrictions for "scientific" reasons are not considered ethically acceptable. Instead, procedural protocols should be designed to avoid the restriction of basic needs.

It is deplorable that the documents outlining guidelines for the housing of laboratory animals are not yet mandatory. Legal ways should be found to enable them to receive a mandatory status.

In addressing the Council of Europe and the Parties to the Convention, all efforts should be made to speed up the revision of the current housing guidelines. It is intolerable that more than five years have passed since the last Multilateral Consultation and the above-mentioned legal problems have not yet been resolved. As soon as the revision of Appendix A of the Convention is completed, the European Commission should introduce the new housing requirements into Annex II of *Council Directive 86/609/EEC*. It then is the duty of the Parties to implement the requirements in their respective national legislations without delay and to make sure that all scientific institutions in their territory adjust the housing conditions of their laboratory animals to the new requirements.

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