

# Ethical and Welfare Implications of the Acquisition and Transport of Non-human Primates for Use in Research and Testing

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**Summary** — Assessment of the ethical and welfare implications of any laboratory animal use should encompass the entire life-history of the animals concerned, including their acquisition and transport. This is particularly important in the case of non-human primates, because the acquisition of some species involves capture from the wild, inadequate husbandry, and/or lengthy, multistaged travel from the country of origin to the laboratory where they are used. Thus, non-human primates endure considerable harms even before they reach the laboratory. Despite this, the information necessary to increase awareness of, and to assess, the potential harms of acquisition and transport is not readily available. This paper highlights the ethical and welfare concerns associated with these processes and makes recommendations intended to reduce their impact on welfare. The information presented is collated from a recent report that analyses the UK trade in non-human primates for research and testing, but many of the concerns and recommendations are applicable in an international forum. The need to minimise suffering is emphasised, as is the need for critical review of the necessity and justification for all non-human primate use, a reduction in the numbers used, and the development of alternatives to replace their use.

**Key words:** acquisition, animal welfare, breeding, ethics, harms, husbandry, non-human primates, supply, trade, transport, weaning.

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## Introduction

When assessing the justification for the use of animals in experiments, it is essential to carry out a meaningful evaluation of the harm to animals, as well as the potential benefits. This must include consideration of all potential sources of suffering throughout the full life-time experience of the animals. In the case of non-human primates, particularly Old World species, significant suffering is associated with their acquisition and transport. This can result from a number of factors: capture from the wild; inadequate housing, husbandry and care at breeding centres; and/or lengthy, multistaged travel from the country of origin to the laboratory where they are used. It is important for this suffering to be recognised in order for it to be factored into the harm–benefit evaluation, and so that the adverse impact of supply and transport on primates; can be reduced.

However, if suffering is to be reduced, there has to be greater awareness of what the problems are and what needs to be done to address them. The Royal Society for the Prevention of Cruelty

to Animals (RSPCA) therefore undertook to produce a comprehensive report on the primate trade to stimulate international awareness of the issues and to make recommendations aimed at reducing animal suffering (1). This paper provides a brief summary of the main issues covered by the report. It focuses on the UK primate trade (around 57% of the 23,875 primates used in the UK between 1994 and 2000 were imported). However, the concerns and recommendations are applicable to any country using significant numbers of primates, including other European Union (EU) Member States and the USA. Import figures are not available for the EU, although it is estimated that around 10,000 primates are used per year (2). Of the 383,848 primates used in the USA between 1995 and 2001 (3), around 20% were imported (4). The principal exporters for all these destinations are the same — Mauritius, China, Indonesia, the Philippines and, more recently, Vietnam. The main species imported is the cynomolgus monkey or long-tailed macaque (*Macaca fascicularis*). The issues highlighted are: capture from the wild; standards of housing, husbandry and care at breeding centres; transport; and availability of information.

## Issues

### Capture from the wild

#### *Concerns*

Some macaques exported for use in other countries are wild-caught (in the UK, there is a ban on the use of wild-caught primates, save in exceptional circumstances). In addition, wild macaques are captured in significant numbers to supplement captive breeding colonies — a point that is much less widely recognised. Capture from the wild causes primates a great deal of distress. This is due to the trapping process, transport to the holding and/or breeding centre, quarantine, and adjustment to new social and environmental conditions. Furthermore, the use of wild-caught animals poses a threat to the survival, and ultimately the conservation status, of some species and local populations (5).

Trapping is a stressful procedure and results in the highest incidence of mortality and serious injury of all stages involved in primate acquisition. Trappers often have little knowledge or awareness of animal welfare. Trapping methods, which include netting and bait-traps, are indiscriminate, with no regard for the demographic status of the remaining wild population. This means that trapping can cause suffering even to those individuals that escape being trapped.

Holding facilities in the trapping area are often unsatisfactory, and there may be long delays before the animals are transferred to more permanent accommodation. Methods of transport to the base and holding facilities of the trappers are not controlled, so that animals may be deprived of water and food and held under unsanitary conditions prior to entering the breeding centre. They may also acquire human diseases such as tuberculosis, and thus, present a human health hazard.

#### *Recommendations*

Ideally, wild-caught primates should not be used at all. Not only does capture from the wild cause additional suffering and distress, but also there are strong scientific reasons for choosing purpose-bred animals. Captive breeding results in “safer” more “homogeneous animals”, with a better health status and known genealogy, age and past clinical history (6, 7). Captive-bred primates are also likely to be less afraid of humans and less stressed by prolonged human proximity than are wild-caught individuals. They may also be more easily trained to cooperate with laboratory procedures. Captive breeding also represents a reduced conservation threat — but only a reduced one, because wild-

caught animals are still used to found, replenish and augment breeding centres. The RSPCA would like to see a worldwide ban on the use of wild-caught primates. In the short term, we believe primates should only be obtained from established breeding colonies that do not replenish with wild-caught animals and that retain a significant and increasing proportion of first-generation animals for breeding second-generation stock.

### Standards of housing, husbandry and care at breeding centres

#### *Concerns*

Few countries have detailed national legislation to control standards of housing, husbandry and care within breeding centres, and where this does exist, it is often not enforced (8). Some centres are much better than others and do provide their animals with good husbandry and adequate environmental enrichment. However, in some, there is very little consideration given to the animals' behavioural, social and physical needs. This is a particular concern, given that some of the breeding animals will spend their whole lives under such conditions. The problem is partly due to lack of knowledge about what the animals need. Staff members who are responsible for the care and management of primates require special knowledge, practical skills and the highest standard of training, and this may not be available in source countries (9). Nor may there be enough staff to adequately care for the animals. In some cases, the animal:staff ratio is over 150:1. This raises concerns about the quality of care that can be provided and the frequency of monitoring for signs of illness, injury, disease or group unrest.

One specific concern, and an example of how centres vary in standards, is the age at which young macaques are weaned. *Cynomolgus* monkeys at a centre in the Philippines are weaned at only 90 days, whereas infants of the same species bred at a Mauritian centre are not weaned until they are 8 to 12 months old. Early weaning can have profound effects on infants' well-being and serious implications for social and sexual dysfunction in adulthood. This compounds the suffering due to confinement in captivity, and it may also have repercussions for the validity of experimental data (10).

#### *Recommendations*

There needs to be far greater regulation of breeding facilities in source countries, taking the International Primatological Society (IPS) *International Guidelines for the Acquisition, Care and Breeding*

of *Nonhuman Primates* (11) as the minimum standard. Ideally, there needs to be an international accreditation scheme with a system of regular inspection, assessment and monitoring, preferably by regulatory authorities — and users for that matter — against these standards. Regulators and users in importing countries should be more proactive in helping to raise standards of husbandry and care and play a greater role in developing and promoting strategies for the Three Rs.

Immediate improvements should be implemented, wherever necessary, particularly with respect to environmental enrichment and weaning age. Given the strong scientific case against early weaning, regulatory authorities should insist that infants remain with their mothers until they are at least 12 months old, as specified in the IPS Guidelines. Infants destined for breeding should remain with their mothers until they are 18 months old.

Well-trained and highly-motivated personnel can make an enormous difference in reducing the stress on primates used in research and testing, and in improving their welfare, which ultimately leads to improved science. Specific training should be provided for the care-giving staff at overseas breeding centres, with the assistance of professional organisations. This could do much to help ease the primates' transition to research establishments. Care staff:animal ratios should be increased to appropriate levels.

## Transport

### Concerns

A third major concern is transport. It is widely acknowledged that a change in environment or social status is stressful for most species. Primates are highly reactive to unfamiliar stimuli and are intensely social animals, so the process of transport is likely to be extremely stressful for them both psychologically and physically (12).

During transport from one location to another, primates are subjected to major stressors that can have serious effects on both their psychological and physical well-being. The transported animals are forcibly removed from their familiar environment and social group, with no means of returning. They are then confined, usually singly, in small, unfamiliar containers from which there is no means of escape and subjected to a series of unpredictable environmental disturbances over which they have no control — control appears to promote well-being in primates and other animals in both psychological and physiological terms (13, 14). In transit, primates may be exposed to extreme temperatures, pressure, humidity and lighting, excessive noise and vibration from the vehicle or aircraft, severely

restricted movement inside the transport container, lack of food and water for long periods of time, motion sickness, exposure to unfamiliar and frightening stimuli, and unpredictable movement during changeovers from one form of transport to another (15). On release, the animals may have to undergo a period of quarantine and acclimatise physiologically and behaviourally to completely unfamiliar physical and social conditions.

The longer the journey time and the more links there are in the chain of events, the greater the risk that animals will suffer from neglect or improper handling. Following a campaign against airlines flying primates into the UK, animals are now flown from their country of origin to a European destination and then transported to the UK by road and ferry. This adds considerably to the duration and stress of transport — total journey times to the UK are typically around 30 hours and, in some cases, exceed 70 hours.

Each stage of the journey imposes a stress on the primates being transported, yet indirect routes appear to have been accepted by primate users as an acceptable method of transport. This is a matter of serious concern, especially given that EU controls on live transport — particularly land and sea transport — are inadequate to safeguard primates' welfare during transit. There are no special provisions for primates, such as maximum journey times allowed or maximum intervals before food and water must be provided. Furthermore, enforcement of live animal transport legislation is notoriously poor in most EU Member States (16).

There are several compounding problems associated with transport. Animals may be “cage-conditioned” prior to export. This may be done by housing them singly or in pairs/groups for varying lengths of time (from 4 days to 3 months), depending on the policy of the facility concerned or on user requirements. Sometimes this time is spent in tiny cages. For example, the major supplier of rhesus macaques to the UK is situated in China, where animals destined for the UK are quarantined singly for 21–25 days in shipment cages measuring only 0.6m × 0.7m × 0.8m (0.336m<sup>3</sup>).

In some cases, the size of the transport crate may be too small for the individual animals. The onus is on the transporter to relate transport crate dimensions to the actual size of primates and they may not have the expertise to do this. The International Air Transport Association (IATA) *Live Animals Regulations* (17) allow macaques to be transported in crates that are too small for the long journeys currently endured, and animals have died as a result.

### Recommendations

There is an urgent need to tackle issues such as journey times, multistage routes, cage-conditioning

and transport crate sizes. Every possible action must be taken to minimise both the duration of transport and the stress and discomfort involved for the animals.

Special provisions for primates should be introduced into EU live animal transport legislation, as for livestock species, and enforced. Where possible, primates should be accompanied on all journeys by competent attendants who have the appropriate knowledge and ability to look after primates' health and welfare during transport. Ultimately, an end to the transport of primates from source countries should be achieved. In the meantime, primates should be transported by the most direct means possible, with the minimum number of stages between departure and arrival at the final destination.

Cage-conditioning should not be necessary, and users should exercise their power as customers, insisting upon pair/group-housing and proper consideration of the animals' needs before dispatch. Some users in the UK already do this.

Crate dimensions specified in the IATA *Live Animals Regulations* should be increased consistent with the size of the animal, and checks should be made to ensure that all transported primates have room to stand and turn in a natural manner.

## Availability of information

### Concerns

There is little easily accessible information on any of the aforementioned points, so people cannot make informed choices about how they acquire their animals, nor can the sources and nature of the suffering be assessed for inclusion in the harm-benefit evaluation. There are few regulations or codes of practice that concern primate welfare, and the various responsibilities in this respect are not well defined. This makes it even more difficult to assess and benchmark standards.

### Recommendations

As a matter of priority, there needs to be more information available on the full impact of acquisition and transport on primates. Regulators should define the standards they consider to be acceptable and make it clear to everyone what these are. This information should be made available to users and ethics committees (e.g. UK local Ethical Review Processes and US Institutional Animal Care and Use Committees), so that they can make informed decisions about supply and transport. If the information is not available, they should seek it out themselves, e.g. by visiting and auditing source

establishments, as some user establishments in the UK already do.

## Conclusion

The full (life-time) experience of primates, including the suffering (adverse effects) experienced during acquisition and transport, must be included in all decisions about whether their use is justified.

As long as primates continue to be used, they should be obtained from the source that causes the least suffering with respect to their acquisition and transport. They should be captive-bred as close as possible to their place of use under conditions consistent with all of their needs.

They should be transported by the most direct means possible, with the minimum number of stages between departure and arrival at the final destination. Every possible action should be taken to minimise both the duration of transport and the stress and discomfort involved. Ultimately, an end to the transport of primates from source countries should be achieved.

However, the most humane option is not to use primates at all. The measures above must, therefore, be seen in conjunction with an international effort to ensure much more critical assessment of the necessity and justification for their use, greater commitment to reducing the numbers used, and the development of humane alternatives to replace or avoid their use.

Finally, it is not just those who use primates who have responsibilities in these areas; it is also those who create the demand for primate experiments, fund them, assess the justification for them at a national and international level, and those who actually conduct them. The RSPCA report is aimed at all those involved in primate use at any level.

*Reprints of the RSPCA report are available free of charge from: Research Animals Department, Wilberforce Way, Southwater, Horsham, West Sussex RH13 9RS, UK. E-mail: research\_animals@rspca.org.uk*

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