

Welfare improves research?

BY CLAIRE LAROSE

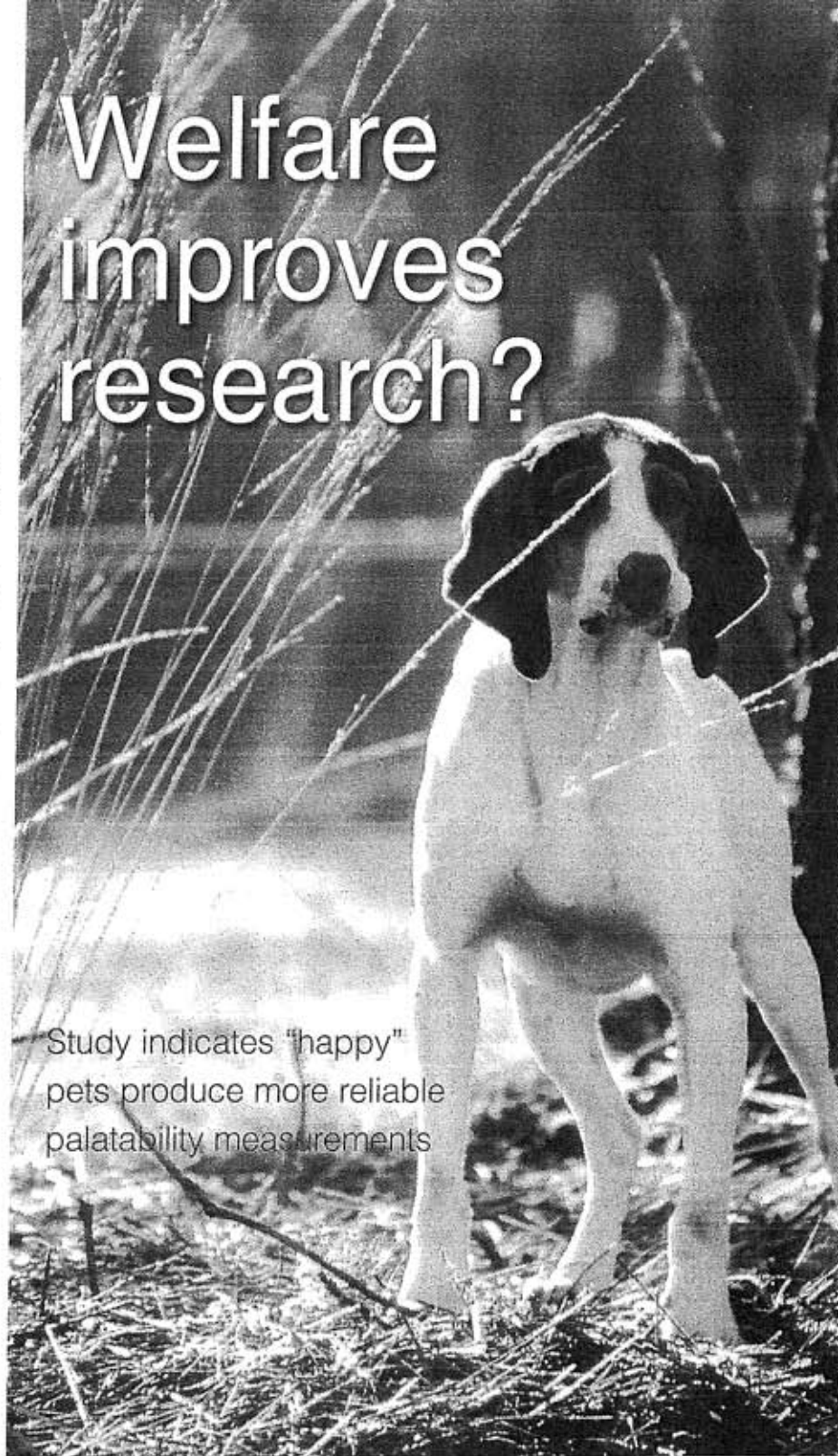
Well-being is generally defined as a physical and mental state of harmony with the environment (Fraser 1995; Veisser *et al.*, 1999). Several factors are involved:

- The absence of disturbing elements such as pain, fear, hunger, thirst, etc.;
- A normal state of health—no diseases, injuries or malnutrition, etc.; and
- The existence of positive experiences—comfort and behavior outlets proper to each species.

This notion might seem subjective as it is directly linked to the individual perception of the environment. To avoid any anthropomorphic drift (interpretation of the animal feelings as identical to human feelings) and to make this state of well-being objective, different means do exist today (Dawkins, 1983a).

First, the infrastructure should be ergonomic, adapted to the animal's size, postures and movements. This will limit injuries and improve the animals' comfort. Conditioning selective tests, which associate a task with a reward, are used. These tests evaluate the way the animal perceives its environment and helps the understanding of the animals' preferences (kennel covering, type and quantity of food-stuff, meal duration, lighting, etc.).

This type of evaluation may be limited—sometimes, the animal does not understand the link between an exercise defined by the experimenter and the reward. Or, the animal may react according to short-term choices. In short term, an event may be judged positive, while it becomes noxious in longer term. It is important to evaluate the long-term consequences of the conditions imposed by humans by esti-



Study indicates "happy" pets produce more reliable palatability measurements

imating the degree to which the animal is "ill-at-ease." An animal's sanitary state, physical reactions and behavior are indicators of the animal's stress (heart rate, blood cortisol, activity towards an unusual item, stereotypy, modified reactivity, etc.).

Through the infrastructure, the way

of life and the food intake follow-up, most of the above parameters are taken into consideration at our palatability testing center (Panelis—"testing center one").

The infrastructure

There are two panels of dogs.

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Dogs spend all day in vast wooded parks (more than 500 square meters). Each panel has eight enclosures in which groups never exceed 10 dogs that get along well. These parks are closed to avoid any escape or attack, and offer shady areas and a drinking trough. Dogs return to their kennels at dinner time to spend their night.

Two dogs of the same litter always live together and are assigned the same kennel in order to avoid daily disruptions as much as possible. The kennel size is proportional to the animal's size. Each kennel has a constant access to a small enclosed outdoor yard equipped with an automatic drinking trough. Inside the kennels, an infrared lamp, suspended over the sleeping area, keeps the temperature comfortable during wintertime. In order to comply with strict sanitary specifications, these infrastructures are cleaned daily and disinfected.

Cats are separated into two panels and live in mixed groups of eight, in spacious rooms of more than 30 square meters. Each room is ventilated with large bay windows and an outdoor wire meshed enclosure—with constant access through cat flaps. The improved system of air renewal not only allows maintenance of a regular temperature, it also allows the smells to dissipate. The efficiency of the system is improved by locating litter boxes close to the ventilation and far enough from the feeding bowls.

Both areas are made more enjoyable with toys, cat trees and resting planks. Kennels and cat litter boxes are cleaned and disinfected daily.

The resin floors in the kennels and catteries are perfectly adapted to keep pets from sliding or getting hurt. Buildings are situated to provide optimal lighting and protection against bad weather.

Living conditions

In addition to daily outings in the parks, dogs have other daily activities such as grooming and care, group walks in the woods, educational sessions (reinforced training with toys or treats), socialization and agility. They all contribute to the well-being of pets by allowing scrutiny of the animals'

health and behavior. They also establish and develop a harmonious human-pet relationship. Pets can express all of their natural behaviors in these living conditions.

Cats' days are mainly cadenced by resting periods, games, observation and contact with the animal technician (physical and vocal interactions), grooming and various other types of care. Diffusion of varied music also makes life more enjoyable in the cattery. Life in medium-sized groups, in an enriched and roomy place, allows the natural expression

steps, such as veterinary check-ups and rationing, to be taken. The distributed food is carefully analyzed. No invasive, medical or aversive tests are performed.

Well-being and feeding behavior

Lifestyle does have a direct influence on the animals' appetite. The daily physical activity for dogs encourages them to eat to compensate for the energy expended. For cats, life in groups, with all the stimulants linked to the enriched environ-

Better repeatability

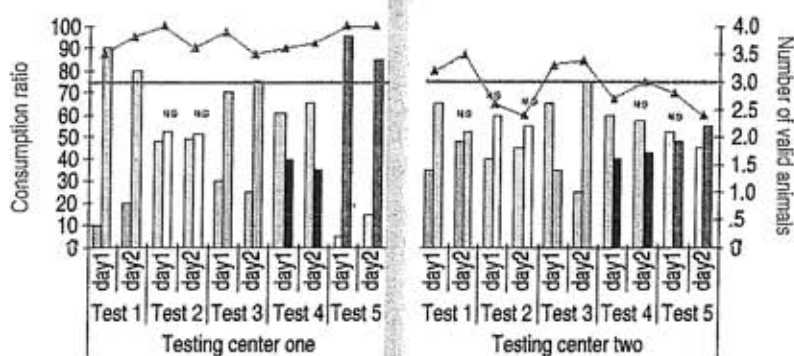


Figure 1. Differences between two different palatability measurement centers. For the same tests, testing center one had more valid animals than testing center two. When animals have abnormal consumption or when they are sick, they are excluded from the statistical treatment of the test. The fact that the number of valid animals is often less than 30 at testing center two could induce bias in the statistical treatment. So, the results could be less reliable. The consumption ratio analysis revealed that testing center one results are more repeatable than these of testing center two. Horizontal red line = 30 (minimum number of individuals required by testing center one), NS = not statistically significant. These results are the tendencies of a compilation of versus tests made in duplicate at testing center one and at other palatability measurement centers.

of social, territorial, cognitive and locomotive behaviors.

Feeding quality

Pets are fed so that they are never hungry or overweight. The intakes are precisely calculated according to each individual. Cats may drink *ad libitum*. The quality of stools is monitored every day. The behavior of each pet is observed during lunch to detect any abnormal reactions, such as refusal to eat and unusual increases or decreases in consumption. Observation also enables immediate

ment, also increases their appetite. Thus, there are only very few under-consumption cases. If under-consumption occurs, it is usually due to pathology or to the food quality rather than stress. We do not see cases of pica, bulimia anorexia, etc. Nor do we see atypical activities like excessive licking, automutilation, excessive barking, etc. We see only a few abnormal social behaviors like aggressiveness or isolation. Individuals who cannot adapt to life in a kennel or a cattery are given to a family for adoption.

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Well-being and reliability of measurement

The relationship with each animal's technician improves daily and is orientated in such a way that their perceptions are pleasant. This avoids fear reactions during testing that could inhibit food intake. Meals are always taken individually. During testing, dogs

are in kennels where they cannot see each other. This way they are not influenced in their choice by observing other dogs or by social inhibition (Bouissou, 1980).


A system of electromagnetic cat-flaps allows the cats to reach only their own bowl. Each cat has a collar with a chip giving him or her access to an indi-

vidual, specific eating area. This system optimizes results by avoiding unwanted influences on choice. These types of testing conditions are a major advantage in achieving repeatability.

We have studied repeatability of other palatability testing centers by sending the same samples, at the same time, to different testing facilities. Consumption ratio analyses revealed that testing center one results are very repeatable (Figure 1).

Well-being definitely affects the reliability and repeatability of palatability testing.

Another parameter for testing reliability is the number of valid animals—sick animals or those with subnormal consumption cannot be taken into account. Frequent observations allow technicians to isolate any sick individuals, thus decreasing the spread of disease. This helps guarantee reliable results by avoiding bias due to the animal. The number of valid animals was during the comparison of different palatability testing centers (Figure 1, number of valid animals). The number of valid animal varies but should remain higher than 30 to avoid any statistical bias (testing center one criteria).

Well-being is not only an ethical consideration. Well-being definitely affects the reliability and repeatability of palatability testing. Thus, any improvement of animal well-being in a palatability testing center should increase the accuracy of palatability measurements. 

References

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