



Buster II, the Sequel

A Look at Some of the Legal & Ethical Issues in Pet Cloning

By Emily A. Gardner, Esq.

an ear-skin cell from an adult Afghan Hound and transferring it into an emptied egg cell of a yellow Labrador Retriever. Snuppy is genetically identical to the Afghan hound cell donor.

Dogs have proven much more challenging to clone than cats because of differences in their reproductive cycles. Dogs come into estrus and produce ripe eggs only about twice a year. The ripe eggs must be surgically removed from the donor dog's reproductive tract within hours of their release. This requires extensive (and costly) monitoring of the dog's blood hormone levels. Once the eggs have been harvested, their genetic material must then be extracted, and they are fused with the donor cell. Not surprisingly, many eggs are destroyed in the process of creating an embryo. A second surgery is then necessary to implant embryos into the surrogate. Very few cloned embryos survive their time in the womb, and even fewer embryos result in full-term pregnancies. Snuppy was the lone survivor of approximately 1,100 embryos implanted in a few hundred surrogates, resulting in 123 pregnancies. Of the 123 pregnant surrogates, only two delivered puppies after full-term pregnancies. The only other puppy born along with Snuppy, died from pneumonia after 22 days.

Because animal cloning—to date—is plagued by high death rates and can cause serious medical conditions in both the surrogates and the clones, the American Anti-Vivisection Society (AAVS) worked with California legislators earlier this year to introduce a bill to ban the transport and sale of cloned and genetically modified pets in California. The AAVS believes that commercial pet-cloning companies, like Genetic Savings & Clone, operate behind a veil of secrecy. They want the U.S. Department of Agriculture to regulate cloning companies like it does research laboratories, requiring compliance with the Animal Welfare Act, which sets minimum standards of animal care and use. If the bill passes, it will be the first of its kind in the United States.

In addition to the lack of government regulation, the fledgling pet-cloning industry has drawn criticism from other animal-rights organizations who claim it is irresponsible to devote so much time and money into producing a single pet animal clone when there are so many homeless animals in need of care. This argument, while having merit, fails to address

the concerns and desires of pet owners who are seeking to replace a beloved pet with one possessing the same DNA, and hopefully, the same traits and behaviors. However, because only a small number of cloned cats have been born and sold in recent years, it is too soon to tell if they will live average, healthy life spans. Pet owners electing to clone a beloved pet could just be setting themselves up for a very expensive heart ache. Moreover, not all of the cloned cats appear identical to their genetic predecessors, nor do all display the same behaviors. Perhaps an alternative for pet owners seeking to have a pet with similar DNA would be to purchase a subsequent pet from the same breeder as the predecessor pet, or to bank the semen or eggs of their beloved pet.

Anyone considering cloning as a way to preserve their bond with a beloved pet should become well-informed about the procedures and costs associated with cloning and the likelihood of a successful outcome. Pet owners should carefully review any agreements for the retrieval of tissue samples by a veterinarian, and consider using only veterinarians familiar with proper tissue harvesting procedures. The same goes for transport and cryogenic storage of the tissue. Fees for tissue harvesting may vary depending upon the health of the donor animal and fees for storage at Pet Bank, a subsidiary of Genetic Savings and Clone, accrue annually. Finally, you should carefully review any and all provisions concerning ownership of tissue samples, embryos and clones, as well as warranties or guarantees provided in any contract for cloning services and be sure that they meet your expectations. For example, Genetic Savings & Clone's Cat Cloning Service Agreement includes both an "appearance guarantee" and a health and wellness guarantee for a period of one year from the clone's birth, excluding any "pre-existing" conditions the pre-clone may have suffered. Given the costs associated with the use of this new technology, it may be wise to review any sales or service contracts with an attorney to best protect your interests.

Emily Gardner is an attorney specializing in animal law. In addition to her law degree, Emily holds an M.S. in zoology. For help with animal-related legal issues, contact her office at 735 Bishop Street, Suite 402, Honolulu, HI 96813. Tel: (808) 540-0200 or at www.animallawhawaii.com

This past April the world's first and only cloned dog celebrated its first birthday. The dog, dubbed Snuppy, which is short for Seoul National University puppy, in honor of the laboratory where he was created, is a uniquely patterned black, tan and white male Afghan Hound who bears a striking resemblance to his father. Time magazine hailed Snuppy as one of the most amazing "inventions" for 2005.

Snuppy also drew congratulations from Genetics Savings & Clone, a California-based company that offers cat-cloning services and hopes to soon clone dogs as well. Those thinking about cloning a pet, however, should be forewarned: the procedure is far from fool-proof and comes with a hefty price tag. In February of 2005, Genetic Savings & Clone began cloning cats for owners willing to pay \$50,000. The price has recently dropped to about \$32,000. So far, two kittens have been delivered to paying clients, and three more are expected within the next few months.

A cloned pet is a unique, newborn animal that shares genes and possibly some behavioral tendencies with its genetic predecessor. The clones are created by taking the nucleus of a single somatic cell (typically a skin cell) and fusing it to an egg cell whose DNA has been removed. Fluids in the egg cell "reprogram" the skin cell's genes and prompt it to grow into an embryo. The embryos are then surgically implanted into the reproductive tract of a surrogate mother. The breed of the egg donor and the surrogate mother are irrelevant because neither the egg donor nor the surrogate contribute any DNA to the clones. Snuppy, for instance, was produced by taking the nucleus of