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A Project to Clone Companion Animals

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Genetic Savings & Clone (GSC) has its roots in the Missyplicity Project, a $3.7 million scientific research project aimed at cloning a specific mixed breed dog named Missy, owned by an anonymous—although obviously very wealthy—in-dividual. As Project Coordinator of Missyplicity, my first task was to recruit a world-class scientific team, a process that began in August 1997 and culminated several months later with the selection of a team based at Texas A&M University, which has a strong animal science program.

The Missyplicity sponsor, though an educated man, is not an ethicist; the sum of our initial ethical discussions was an agreement that it would not be right for other dogs to suffer simply to replicate his aging spayed mutt. Knowing that, historically, academic animal researchers haven’t exactly been a dog’s best friend, I decided that we would need a Code of Bioethics to safeguard the welfare of animals associated with the Missyplicity Project. This code would have to be a binding exhibit to our funding agreements, which was, and still is, the case (see Table 1).

Not long after the research began, the British Broadcasting Company did a story about Missyplicity—the first of many to come. At that time, we discovered the paradox that forms the core of GSC’s business model: Millions of people believe they have a one-in-a-million pet. Swamped with thousands of phone calls and e-mails, we quickly realized that we were dealing with something much bigger than cloning a single pet: the commodification of cloning, with profound ethical, social, and, of course, commercial implications.
On February 16, 2000, we launched GSC. The stated mission was the development/refinement of cloning technology for what we termed the Big Four: cats and dogs in our Pet Division and horses and cattle in our Livestock Division. We also made a public commitment to transfer this species-specific cloning knowledge to organizations working to repopulate endangered relatives of the Big Four and to groups engaged in breeding of exceptional assistance dogs—whether for people with disabilities or for search and rescue work.

We also gave GSC a Code of Ethics—actually two codes reflecting the highly divergent value systems our culture embraces for pets on one hand and livestock on the other. For example, GSC’s Pet Code of Ethics, like the Missyplicity Code, requires playtime and enrichment for surrogates while under our care, followed by adoption into a loving home after a reasonable service period. Such guidelines simply make no sense within an agricultural setting. Thus, we decided that the GSC Codes for each division would reflect the highest values within the relative contexts of pet and livestock breeding. For instance, although we at GSC do not adopt out our bovine surrogates, we do guarantee that their quality of life is measured against the standards of traditional farming versus the far lower standards of modern factory farming.

Although we are often asked abstract ethical questions such as “Aren’t you playing God?” and “Isn’t this cheating Death?” it should be clear that our primary ethical concerns are more pragmatic: Are we increasing or decreasing the suffer-
ing of animals? Maintaining the physical and psychological well-being of our sur-
rogates is only part of our challenge: We must consider both the implications of
replicating pets when so many are homeless, and the risk of creating nonhuman an-
imals with genetic abnormalities.

Cloning companion animals has far more symbolic than actual significance in
terms of pet overpopulation. It will likely be decades—if ever—before pet cloning
is inexpensive enough to affect the population of unwanted pets to any measurable
degree. Regardless, GSC has made a public commitment to “reduce the population
of unwanted pets to a greater degree than our cloning activities add to the prob-
lem.” The cloning process itself obviates this commitment: For every individual
animal we clone, we need thousands of eggs of that species for the cloning process.
For pet species, we purchase these eggs from spay clinics—hundreds of thousands
of dollars worth each year for research alone. These funds underwrite the spaying
of far more dogs and cats than we ever could hope to create by cloning.

The ethical issue of greatest concern in moving forward is the risk of creating
animals with genetic abnormalities. Roughly 20% of cattle clones who survive
long enough to be detectable in utero go on to exhibit some sort of health problem.
Some miscarry, some die shortly after birth, others develop later stage health prob-
lems, whereas still others outgrow neonatal problems and develop normally. A
leading theory holds that the vast majority of these problems trace back to some
sort of genetic “misexpression”—that is, incomplete or inaccurate reprogramming
of the donor cell by the egg resulting in certain embryonic genes being “on” when
they should be “off” or vice versa.

There are three factors to consider with regard to genetic abnormalities in
clones:

1. Considerable evidence shows that such problems may be species specific;
Louisiana State University has cloned numerous goats yet has seen none of the ab-
normalities commonly observed in cattle clones. At this time, we do not know
whether cloned pet species will exhibit such health problems.

2. Different cloning techniques seem to yield better results than others, which
is why we are building sophisticated software for tracking and analyzing the hun-
dreds of variables involved in the cloning process.

3. Genetic abnormalities may be detectable in the early embryo stage prior to
transfer into a surrogate; thus, we are investing millions of dollars into new technol-
gies for assessing gene expression and other key parameters of embryo viability.

Our ethical bottom line is this: Cloning, like many activities, can have either positive
or negative impact based on the level of awareness we bring to the process and the
amount of responsibility we take for the consequences of our actions.