

Creating, Culling and Caring

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The Reoccurring Dream:

I call this the rabbit dream even though it always starts out as a nightmare. In it I discover that I have neglected to feed and water hundreds of caged rabbits. Some are dead, but most are still alive; just barely hanging on and somehow I know that they have been waiting for me to come care for them. I have not kept rabbits for over a decade, and even in my dream I am shocked to learn that I am responsible for these rabbits in this dire situation. I then realize that they are the progeny of the rabbits I had bred so many years ago. I don't know who their current owners are, but because I had a hand in bringing their ancestors into the world, I feel overwhelmingly guilty and responsible for them. I rush around to each cage, trying to revive them. But even in this guilty frenzy I am playing favorites. Realizing that I cannot save every single one before it dies I am looking at each of them, judging them, choosing to first feed and water the most promising-looking specimens; those with the proper coloring, ear carriage, body type, etc. I begin to fluctuate between feeling horribly guilty and feeling hopeful that I will save the "best" rabbits and be able to continue the breeding project that I had stopped when I was twenty years old. Usually the horror of the deaths falls away to the background as I become captivated with a promising litter of eight-week-old rabbits or a pair whom I believe could create the next grand champion if bred together.

Upon awakening from the dream I find myself wishing that I really did have the progeny of the line of show rabbits that I had a hand in creating. During the entirety of my teen-age years, my passion was rabbit breeding – I raised, showed and sold purebred, pedigreed, French Lops, Mini Lops and American Fuzzy Lops. With the cooperation of the rabbits I was able to produce exceptional creatures, many of them even earned the official status of Grand Champion bestowed by the American Rabbit Breeders Association. Still to this day, I find that a perfect rabbit is one of the most aesthetic experiences. Directing a selective breeding project that produced incredibly aesthetic beings was even more satisfying. The daily caring for the herd of thirty to one hundred rabbits I owned was part of the joy. The part that changes everything, however, is culling.

Culling is the secret:

Culling is the unsavory, unspoken secret of selective breeding because it often involves killing. A planned killing has different names, based on the species being referred to: putting-down, selective termination and euthanasia are some. It is also the secret formula to efficiently create new breeds or altered traits in a population of living things. It is true that not all culls are killed - they are also sold or given away as pets - but because it is not always possible or practical to find a home for the undesirable, unselected animals in a selective breeding project, breeders do kill.

As a breeder, and as someone who has known many other breeders, I can say that most breeders love and obsessively care for their population of animals. However, it is not an unconditional love for every individual in the population. For example, in the creation of a new breed, such as the American Fuzzy Lop, those who have the best woolly coats and lopped ears are the keepers. Those whose wool is too short or thin, or whose ears tend to stand up instead of down, are culled in the interest of the project. Limited time, energy and resources prevent the support of the failed experiments. In a breeding project, culling is a way to ensure that the population of living things under one's care does not exceed the available resources, as these will be needed to continue to care for the living things that have "made the cut". New varieties and breeds of animals and plants have been created this way for over ten thousand years. If culling could be eliminated from breeding, I would be whole-heartedly practicing the pursuit of new breeds of rabbits.

Perhaps bioengineering technologies provide a more humane way to create unique living beings? As a radical speeding up of selective breeding, it does not engage in the same trial and error process of selectively breeding and culling thousands of living things over hundreds of generations. Although bioengineering clearly has many ethical issues, it has been presented as a clean way to improve the economic efficiency, the disease-resistance and overall health of domestic plants and animals.

I began to imagine what I would create if I were a genetic engineer and in 1998 I made a series of sculptures that allowed me to explore the idea further. In *Hyperdomestic*



Cacti aesthetic ideals of nature are projected onto live and fictitious cacti. Taking existing examples of engineered cacti, such as grafted cacti and genetically-enhanced, spineless cacti, this body of work imagines the possible future permutations of these living forms. Perhaps the plants of the future will be engineered in ways that enable them to show us their emotions or reflect ours back to us. Indeed, it is possible that our new creations could affect us in ways that bring about a greater appreciation for, and conservation of, the non-human world.

Engineered for Empathy is a cactus I endowed with a green, pulsating heartbeat-like glow. Inspired by the creation of transgenic tobacco plants that glow with the genes of fireflies, it is a speculation as to what might be possible to engineer into future plant species. Beyond mere visual aesthetics or economic motivation, I imagined a plant that responds to humans and conveys emotions in ways understandable by us. This cactus is engineered to elicit empathy from humans, so that we will be compelled to care for it. Its signal to us is a glowing heartbeat that speeds up as a person comes near it. If the cactus is touched, its pulsing behavior changes to a frenetic flashing. Though visually and mentally satisfying at first, this project took an ironic turn when the live cacti I altered suffered an untimely death, most likely due to the operation of embedding forty-eight LEDs into it.

The Warm and Fuzzy Glowing Bunny

I was excited to learn about the transgenic rabbit transformed into an artwork by Eduardo Kac. He calls it *GFP Bunny*, as it has a Green Fluorescent Protein in its genes, which causes it to glow under a special kind of light. It was made in a lab in France that had been creating a strain of GFP rabbits since 1998. So, while the technology is not brand new and the creation of the rabbit was not the work of the artist, the transformation of a transgenic lab rabbit into an artwork (and into a bunny named Alba) is quite interesting. It instigates dialogue about human/animal relationships and challenges notions of purity and naturalness. Kac's desire to bring the rabbit into a social sphere - to treat it as a pet living among his family - certainly focuses attention on how the rabbit is objectified by the scientific community it came from. It would not be given any special care, love or even a name in the lab. Kac has been attempting to persuade the lab that created the rabbit to allow him to bring it to his home in Chicago. It gives me a warm and fuzzy feeling to think that Kac might rescue this object rabbit and turn it into a social subject rabbit.

Nouvelle Culling:

In his writing about the GFP bunny project, Kac assures that the process of creating this kind

of rabbit is safe and harmless. [1] The process used by the lab is called pronuclear microinjection and it starts with fertilized eggs from donor mother rabbits who have been injected with hormones to make them superovulate. Harvesting the embryos involves killing the donor mother rabbits. [2] The eggs are microinjected with the foreign DNA and, in an invasive surgical procedure, they are implanted into the surrogate mother rabbits. Of the fifteen to twenty embryos implanted in each mother, an average of three babies are born, and among the number of live births, only around 3% are actually transgenic.[3] The rest are the failed, culled animals in the experiment. Kac's GFP bunny was one of the very few lucky rabbits (and rabbit embryos) that did not get harmed or killed in her creation.

Learning about this process has changed my mind about creating my own transgenic rabbits. Even if I were provided access to biotech specialists and a lab, or given enough money to hire them to create rabbits for me, my past experiences with culling and responsibility prevent me from being able to create in this manner. My reoccurring rabbit dream/nightmare is a reoccurring reminder of the responsibility I felt - and still feel - for the animals I created, culled and cared for.

Alternative Collaborative Creating:

The process of breeding and raising animals feels like a collaborative artwork with nature. The process of culling requires shifting attention away from the individuals and objectifying the group so that tough decisions can be made that will advance the project. Some human mothers-to-be, mainly those who have undergone fertility treatments, face a similar situation when they learn that they are pregnant with multiple live fetuses. Since the project of having one healthy baby is decreased in cases of multiple births, doctors often encourage parents to consider "selective termination", the culling of some of the smaller or less healthy embryos in order to increase the chances of survival for the one or two embryos left in the womb; a place of limited resources.

If the project is not working toward the health of a human or animal, and is instead an art project, it can be difficult to justify. In other essays I have argued in favor of the kind of artwork that interacts with living things, as I believe it is an ideal way to explore important concepts of ecology and interconnectedness between humans and the non-human world. [4] One artist whose work exemplifies this concept is George Gessert, who has been breeding and hybridizing unique flowers as a genetic artform since 1982. His work with flowers highlights one way in which humans have interacted with the natural world for thousands of years. Gessert's breeding project however, stands out from other horticultural endeavors, as

he is not breeding for traits that are considered economically valuable in the marketplace. He believes that “Genetic art is not simply a matter of inscribing individual human ideas and fictions into the DNA of other beings.” And that, “On the deepest level, genetic art is about community, the community of living beings.” [5]

My own desire to create artwork that interacts with the community of living things without hurting them has led me to design a sculpture to protect a spineless cactus. *Rearming the Spineless Opuntia* is a machine that protects a Spineless Opuntia, an actual cactus that has



been altered by humans so that it lacks its spines. It is, therefore, easier to eat and to feed to cattle than its relative, commonly known as the Prickly Pear cactus. The metal armor built into the machine closes when people approach and opens up again when people move away from it. It signals a future in which humans will need to engineer increasingly elaborate remedies for ecological problems we are responsible for; much like the current creation of artificial reefs which are needed in populated coastal areas to replace the natural reefs damaged by humans.

In a current attempt to collaborate with living things, I am designing shells for hermit crabs. *Prototypes for Hermit Crab Shells* is a project that began with computer-designed, rapid-prototyped shells, which I gave to seven Land Hermit Crabs [6]. Since they cannot grow their own shells they rely upon marine snails to produce the shells they use to protect

themselves. When they grow out of the old shell, or find another they prefer, they will move into a new one. So far, the crabs have rejected all of my designs. They have all elected to either stay in their own shell or to move into a natural shell. The crabs have essentially culled my designs. I am incredibly humbled by this experience, but at the same time I have been challenged to learn from my mistakes, to learn more about the crabs' needs and to try new designs. After the experiments with rabbit breeding, research into genetic engineering and

the continued longing for other ways to engage and collaborate with non-human living creatures, I believe the feeling of humility is most appropriate.



REFERENCES AND NOTES:

1. Eduardo Kac, "GFP Bunny" Website: <http://www.ekac.org/gfpbunny.html> (2000).
 2. Honda & Watanabe, "Transgenic Rabbit Models for Biomedical Research: Current Status, Basic Methods and Future Perspectives" *Pathology International* 49, no. 7 (July 1999).
 3. A success rate of 1.5% was reported by Viglietta, Massoud and Houdebine, "The Generation of Transgenic Rabbits," in *Transgenic Animals*, ed. Houdebine (The Netherlands: Harwood Academic Publishers, 1997) p. 12. Another study reported a success rate of 3.6% Araki, Fan, Challah, Bensadoun, Yamada, Honda & Watanabe, "Transgenic rabbits expressing human lipoprotein lipase" *Cytotechnology* 33, (2000) p. 97.
 4. See Amy M. Youngs, "The Fine Art of Creating Life," *Leonardo* 33, No. 5 (2000) and Amy M. Youngs, "Commingleing the Techno with the Eco," *Nouvel Objet* 6 (2001).
 5. George Gessert, "Notes on Genetic Art," *Leonardo* 26, No. 3 (1993) pg. 210.
 6. *Prototypes for Hermit Crab Shells* began as a collaborative project with Matt Derksen, and was exhibited at *Archetype Gallery*, Dayton, OH. Nov 16, 2001 - Jan 31, 2002 as part of *Intersculpt:Ohio*.
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