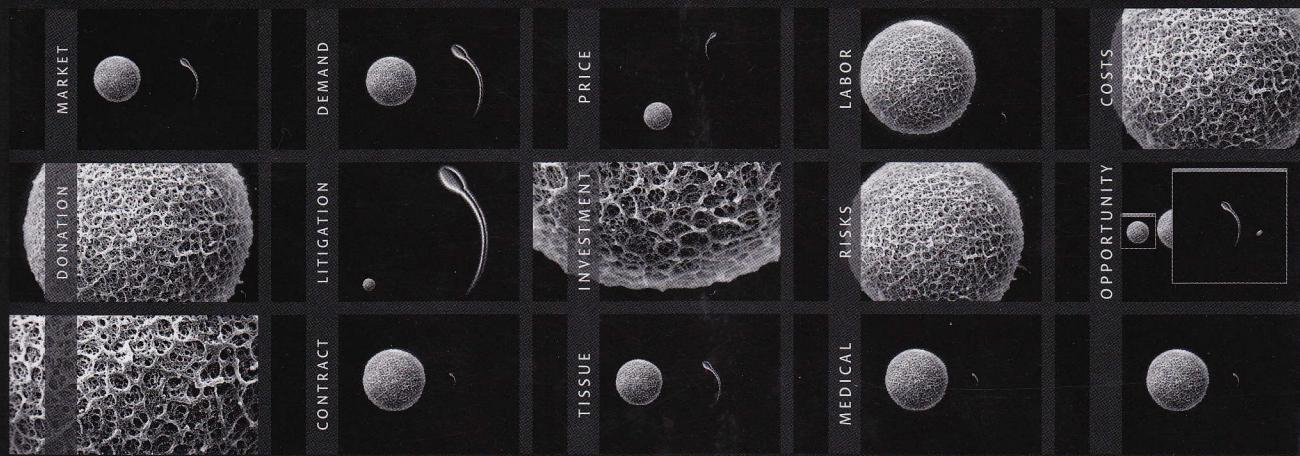


Tactical Biopolitics

Art, Activism, and Technoscience



edited by Beatrix da Costa and Kavita Philip

new media/biology/art

"Scientists and engineers, if they care for a better world, must more fully understand the consequences of their actions. Artists must learn more about science and take up the challenge of illuminating our technological world to those who are shaping it. Both communities, in making their work more accessible to the other, will benefit. Not everyone will agree with the politics argued here—but that is fine. The need for dialogue has now extended far beyond Snow's *The Two Cultures*, and so has its urgency. *Tactical Biopolitics* takes up that challenge; it is one of the most stimulating books I have read in a long time."

—Charles Taylor, Department of Ecology and Evolutionary Biology, UCLA

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Playing with Rats

Kathy High

Arrival

03.15.05: The rats arrived today. They were delivered from the lab. A truck with a giant rat painted on the side drove up to the university building. The driver carried them in a plastic tub that had holes in the top, a carrier designed for transporting rats. I signed for the carrier and took them to my office, where I had a cage to transfer them into.

Actually, I didn't sign for them, nor was I there to greet them. I arrived back from a meeting and the department secretary told me that a package had arrived. I went into my office and saw the plastic tub on my side table. The room was cold, and I was worried about the temperature.

I took the tub over to the table with the cage. Two other staff members came to meet the rats. We all worked to get them into the cage with the least amount of trouble—and also with the least amount of contact.

The plastic tub smelled bad. But it was not the rats that smelled, as I had suspected, but the food pellets.

The rats were scared and immediately hid under the hut areas I had provided in the cage. Their long tails were pink and scaly. I always thought their tails looked reptilian. I understand that the tail acts as a thermoregulator for their body. When it is cold, the tail shrinks, constricting blood flow to the tail and maintaining more blood flow for the rest of the body. The opposite happens when it is warm. Also, the tail is used for balance. The rats carry their tails extended slightly off the ground when walking or running. Their tails still creep me out.

Why did I decide to work with these rats? I am afraid of them. And I don't know how to relate to them. They make me nauseous and queasy. They make my skin crawl. I have never touched a rat before except accidentally, when they crawled over me in bed at night

or when they ran by my foot in the alley or the subway. They terrify me. Plague-laden animals, low to the earth, crawlers, sneaky, creepy vermin. . . .

What was I thinking? These rats were *bred* with a small amount of human DNA to give them autoimmune diseases: inflammatory bowel disease for one (this most closely links to mine). My own autoimmune diseases are incredibly complicated. Why did I think the rats would be easy to treat to correct their autoimmune diseases? I have been treated with acupuncture and homeopathy and supplements for twenty years.

Autoimmune diseases are generally considered as the body attacking itself, exaggeratedly responding to intrusions and overreacting: military terminology is most often used to describe the scene (Sontag). But rather than thinking in aggressive terms of *invasion*, *defense*, and *attack*, think in terms of *process*. How does the subject respond to cause and effect? Question the process, examine it, and understand it from a position of alliance, relationship, exchange, rather than one of defense. Better to think of Humberto Maturana and Francisco Varela, and envision a living system, one of *autopoiesis* (self-making). “An autopoietic organization is an autonomous and self-maintaining unity which contains component-producing processes.”¹

I bought them to conduct research and to treat them holistically with alternative medicines, environmental enrichment, good food, and play. I want to relate to them because I, too, have autoimmune problems. I identify with the rats and feel as though we are mirroring each other. The rats and I are all retired breeders. I feel some kind of strange kinship with them. If they ache when being touched, I understand this is from my own fevers. I also know they do not know how to behave as pets. They are not pets. They are extensions, transformers, transitional combined beings that resonate with me in ways that other animals cannot—because of that small addition of human DNA. These rats and I are engaged in like systems and routines of health and sickness.

We will be a closed system—the rats and I—reading and reacting to each other, defining our conditions. We will collaborate and make up our own rules.

3.23.05: The rats adapt quite well to the cage and their new environment. I cover them every night to keep them warm. People stop coming to my office, as it is beginning to smell a bit musty, like straw, food, and shit. I find I am somewhat comforted by the smell and welcome it. We are isolated together.

3.28.05: The rats are eating quite well and starting to gain weight even in their first week. They are actually growing already. They are definitely getting larger.

Their shit stinks. But it is hardening up, at least—turning from the runny, putrid slime that they had at first to harder orbs. I count their shits the way I count my own visits to the toilet, monitoring waste and consistency.

4.15.05: Today we named them. The oldest one was named Star, after the Wistar Institute, one of the oldest rodent lab facilities in the country.² The other rats are named Matilda and Tara. (See figure 27.1.)



Figure 27.1 Rat tail, detail.

Transfer-Transplant

The rats were bred to be sick. Just as the psychospiritual state of our country is unwell, and “. . . the melodramatics of the disease metaphor in modern political discourse assume a punitive notion: of a disease not as a punishment but as a sign of evil, something to be punished . . .,”³ so these transanimals are a metaphor for a fabricated “alien.” In discussing OncoMouse™, a similar rodent creation, Donna Haraway says:

OncoMouse™ is my sibling, and more properly, male or female, s/he is my sister. Her essence is to be a mammal, a bearer by definition of mammary glands, and a site for the operation of a transplanted, human, tumor-producing gene—an oncogene—that reliably produces breast cancer.

Above all, OncoMouse™ is the first patented animal in the world. By definition, then, in the practices of materialized refiguration, s/he is an invention. Her natural habitat, her scene of bodily/genetic evolution, is the techno-scientific laboratory and the regulatory institutions of a powerful nation-state. Crafted through the ordinary practices that make metaphor into material fact, her status as an invention, who/which remains a living animal, is what makes her a vampire, subsisting in the realms of the undead.⁴

These rats—Matilda, Tara, and Star—are also known as the Barbies (to salute their origins as a kind of manufactured production). They are all transgenic (microinjected gene transfer) rats—HLA B27 transgenic rats, to be precise—exhibiting a phenotype similar to humans suffering B27-related rheumatic disorders. They have been microinjected with human DNA that sets them up for a predisposition to be autoimmune challenged. The human genetic material is injected into the pronucleus of the rat embryo, and it is passed from generation to generation ever after. These rats are prone to develop diseases such as reactive arthritis, psoriasis, inflammatory bowel disease, and other things. They are developed for pharmaceutical research studies in systemic inflammation.

Matilda, Tara, and Star are also retired breeders, meaning they were used to give birth to baby rats that carried their added gene (one to two litters each). They came from a laboratory that breeds such rats (and mice, too) and sells them to researchers. Some of their ears have holes, and they have yellow markings on their fur as a kind of numbering system. These marks denoted their identification until they came to live with me.

The rats that were ordered were all about eleven months old. When researching them I looked for a few things: proximity of rodent facility (this place was only a one-hour drive away); they had to be transgenic rats (I had decided to work with rats, as opposed to mice, because they were a more powerful image for me and I reacted to them more strongly than to mice—in other words, I loathed them); and rodents that were developed for work with autoimmune diseases close to my own. (I may not have selected the best “models” of diseased rats. The NIH Autoimmune Rat Repository and Development Center has an entire bank of cryopreserved pedigreed embryos from sixty-three strains of rats.) The rats cost over three hundred dollars each. They were the closest product I could find to conduct treatment like my own. They are bred ill and are not expected to live longer than six months to a year and a half. Generally they were created for research in rheumatoid arthritis.

Rat Histories

Rats are traditionally seen as vermin, pests, gnawing, repugnant, destructive, and disposable. They are also easy to breed, cheap, small, and easy to contain.

Mythic and dark and laden with negative energy—and add to it the fact that these rats are now mutants, transhuman/transgenic, which makes them even scarier. The skeletons of the Black Plague haunt these rats (. . . dirty, disease-carrying rats) and follows them everywhere—even if they are now albino, pure white, brought to us from “clean rooms.”

So they now are carriers of my diseases. They have been dealt my condition, my illness. And since they are already “diseased” and “dirty,” this contact goes unnoticed and unobjectioned. And the animal that caused disease is now injected/polluted with disease.

Rats originally came from India and China, where they were honored for their wit and agility and written into mythology, accompanying Ganesh as a companion and heading

up the Chinese astrological signs. They came to Europe, probably via trading boats, sometime in the 1500s, and to the Americas in the 1700s. First to arrive was the black rat. Then the “fancy” rat or Norwegian rat, which is larger and brown in the wild. The “fancy” rat is used in laboratories now. The black rat is the rat that carried the fleas of the Black Plague—now harder to find in the wild.

They are dispensable. They breed quickly. They are pharmed. They are not on the endangered species list.

There are over fifty breeders and vendors of laboratory animals in the United States. The total number of rodents and birds is uncounted, but millions are used in research each year. Over 95 percent of all laboratory research animals used in biomedical research are rodents (mice and rats) or birds.⁵

Interview between artist Kathy High and Joel Taurog, professor of internal medicine and immunology at the University of Texas Southwest in Dallas, who worked with Robert Hammer to invent the HLA B27 rat line.

Joel Taurog: My interest in B27 and its role began in 1973. In the 1980s we were looking at conventional animal models that had arthritis. In the early 1980s technologies were developed for transgenic animals. At the time we had cloned the B27 gene. And everyone was making transgenic mice at the time. But it wasn’t so clear what to do. I was actually looking at a conventional animal model in the early and mid-eighties.

Kathy: When you say “conventional model,” what, exactly, do you mean?

Joel Taurog: It is a model that has arthritis . . . a model where you give rats a certain concoction of things and they get arthritis, which seemed like it might be a model for reactive arthritis, which was another B27-associated phenomenon. Meanwhile, the technology to make transgenic animals was developed in the early eighties, and Bob Hammer trained in a lab where that was developed—in Ralph Brinster’s lab at the University of Pennsylvania. Really, the seminal work that made transgenic animals a reality was due to a collaboration between Ralph Brinster and Richard Palmiter, who was at that time at the University of Washington (I think he still is). So, Bob came from that lab and then I came to Dallas in 1986. What had happened is in 1983 Carl Simmons, who is a very wealthy Dallas businessman, gave a large endowment to the rheumatology division here. Mr. Simmons himself was, I think, suffering from reactive arthritis, so he, I guess, had some interest in having somebody here working on that condition, and there wasn’t anybody here at the time . . . so they recruited me—I was at the University of Minnesota at the time. When I came here, it seemed like we had just cloned the B27 gene and it seemed like the making of a transgenic model would be a reasonable thing to do. It seemed like everybody would be making transgenic mice and we knew from a lot of other work that rats are much more susceptible to arthritis than mice. There was a number of experimental models, so it was easy to produce arthritis in rats and much more difficult in mice—or not at all.⁶

Rodents' Rights

Under the U.S. Animal Welfare Act (AWA), rats, mice, and birds do not receive the same protection that other “animals” currently do, even though they make up the bulk of all research animals. Since the 1960s, a battle has been ongoing to exclude these small animals bred for research in the definition of “animals.” The addition of rodents and birds under the Act would require further oversight and inspections that would conceivably increase research costs and therefore cut into the profits of the pharmaceutical industry. In 2002, an amendment to the Farm Bill instituting a permanent exclusion of rats, mice, and birds from the AWA was promoted by both the National Association for Biomedical Research and by Jesse Helms prior to his resignation from his position in the Senate. Helms retired due to illness. Perhaps he selfishly supported the amendment to keep his own drug costs down. More likely, as the Senator from North Carolina, Helms was using his senatorial position to champion a burgeoning pharmaceutical industry for his state, similar to what he had done for the textile and tobacco industries.⁷

[May 13, 2002] President Bush signed the farm bill, which included an amendment authored by Sen. Jesse Helms, R-N.C., to exclude rats, mice and birds from the Animal Welfare Act. Lab rodents and birds are already protected to some degree under other laboratory guidelines and researchers claim that more regulations—and more lawsuits—would only hinder research.

“It would mean more paperwork and more cost,” says Frankie Trull of the Foundation for Biomedical Research. “And that will ultimately only drive up costs for consumers.”⁸

The added costs of routine care and assessment would have cut down on the ways that the pharmacology *machine* profits. However, the costs need not be passed onto the consumer, as the by-line of this newspaper article reports. The real concern here is the hidden costs to the industry itself if regulations concerning animal care and pain management, etc. were enforced. Like many other similar issues currently in play in our corporatism, maintaining the low costs of these animal products are imperative for modest labor overhead and high product yield. Consequently, the smaller animals are left to fend for themselves.

Habitat +Play

We need to play—to cuddle up, to bare our fangs, to playfully threaten, to develop our relationship and also the rules of the game.

05:20:06: I drive the rats in my car and in their cage to my exhibition at the Massachusetts Museum of Contemporary Art (MASS MoCA). They are part of the “Becoming Animal” show. They have a towering and rambling housing situation/habitat. There are upper

small huts high along the wall, attached by tubing that loops around and back to the main huts. These upper areas are for hiding and have tunnels running to them for scaling. There is a typical cage with three levels for climbing as well. There are Quonset huts with grass, dirt, rocks, and even a plastic toy barn for sleeping and playing. Metal piping or vacuum cleaner hosing connects all the different housing units. All in all, it is like living in a small village.

The rats will be on exhibit at the museum. Their house will become my artwork. They will no longer be lab products, but art products, again on display, again used as research. Does this shift or change their status in the world? They are still workers and products for sale. In fact, while they may be now considered "art objects" instead of "lab products," the fragility and unpredictability of working with these small creatures makes me aware of my own fragile situation. It does that for all of us as we constantly monitor and check, discuss illnesses, and compare our own bodies to theirs. (See figure 27.2.)

Through a process of empathy, and identification, and in a gesture of revolt, our act of caring for transgenic rats honors our confused relationship. Our exchange with rats was obsessive care. We should make them live forever, cure their diseases in a real transgression, in an exchange unmeasured in power. Their immortality will celebrate our kinship with transgenic animals and the work they do, using their body parts and ours. I will replace their body parts with mine as they continue this passage, this exchange, perpetually.

Play Exercise One: Place treat pellets in mouth and have rat take from you in a small kiss.

Play Exercise Two: Call rats from one end of housing and see if they come to you. Award treat. Then call from other end of housing, and repeat.

Play Exercise Three: Sit in Healing Dome and allow rats to crawl over you. Touch excessively.

07.10.06. Playtime comes at night. The rats chew their teeth and make grinding, gnawing sounds constantly. The sound echoes in their tunnels. They roam and wander, passing back and forth in the space, their little nails hitting the hard surfaces and clicking as they run through the vents and crawl spaces: click click click. They smell musky, like hay and sweat. The smell becomes more pronounced at night—the scents stirred up. (see figure 27.3.)

Imaging: Intimacy and Distances

Modern medical imaging accomplishes what began in the eighteenth century as a desire and a search for illuminating every dark corner, especially for seeing the insides of the human body. Modern man has since been rendered somatically transparent, in gestures that extend into putting into full view not only the hidden but the ultimate microscopical, the DNA fingerprinting, the biochemical profiles, the immune cellular probes and markers. Our times have renewed the visible

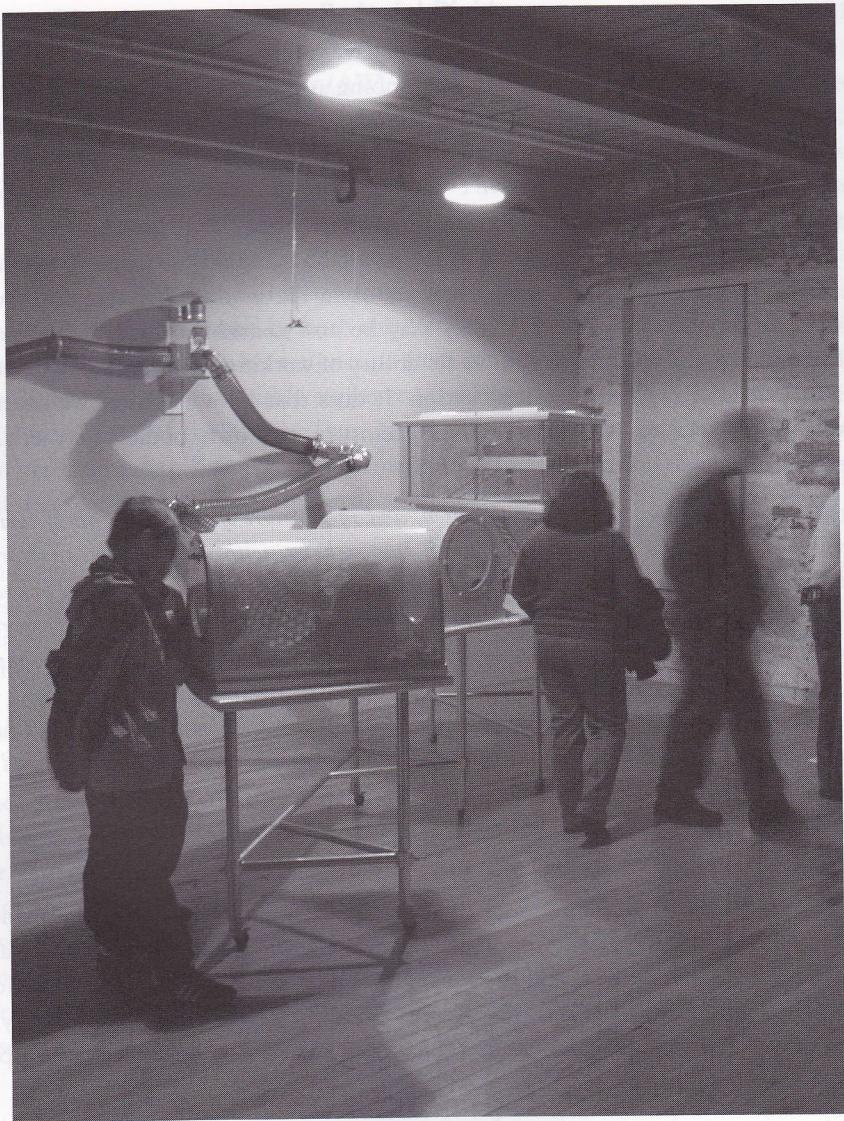


Figure 27.2 Rat habitat in *Embracing Animal* installation at MASS MoCA.



Figure 27.3 Overview of *Embracing Animal* installation. Photograph by Adrian Garcia Gomez.

and the explicit as a preeminent presence, compared with times in which only the rarefied world of pure ideas and Logos was supreme and the image mere appearance. . . .⁹

This installation was a lab environment for observation with large, glowing “tubescopes”—tall glass tubes with mini LCD monitors at the bottom of the glass—and the extended animal cage housing the three transgenic lab rats. It was an experimental playground to feel the tension of exchanges, transitions, and transplay. It was built for surveillance, to make the unseen, seen. The rats observed us and we observed them.

The staff at the museum gave tours and explained transgenics. They introduced the concepts to the public and also introduced the public to these creatures, whose labor otherwise would have been unseen. The installation honored our relationship and our kinship with transgenic animals (housing our DNA) and made them visible. The staff learned to love the rats. The night watchman, Mike Wilber, and his wife, Peg, enacted the exercises, noted their every ailment, nursed their wounds, and finally adopted the rats. Their love was infectious.

Dirty Room: Autoimmune Metaphor

In an industry/research laboratory setting, these rats are not tested in what I would consider nourishing environments: their cages are small, offering little stimulation; their autonomy is limited. They are not nurtured to develop skills and strength. Thus they are being tested for drug research and development while they are getting increasingly sick. In other words, the starting point for the research is not a good one.

In my lab, the rats grew stronger under what would be considered “improper” conditions for them. They were exposed: they came from clean rooms and were then in a dirty environment. But this only proved to make them stronger. Contrary to common belief that they should be “clean” and quiet and contained, they were “under observation” and under “stressful conditions,” with the public nagging and challenging them every day. They were asked to perform for the public, and thus live with constant distractions. To break from the obsessing nature of immunological disorders, and to break the innate immunological tolerance cycle, one must develop the ability to distinguish “self” from “non-self.” Extending beyond our mirroring, the rats engaged with distractions, learned new relationships, and developed changing reactions that established a separation of self from non-self, which encouraged tolerance for external aggravations, and perhaps encouraged a similar immune response.

My basic research premises:

1. Lab rats will become ill when confined and not excited or stimulated.
2. Food must be varied and plentiful.
3. Diversions will create new ways of thinking that will increase immunity and strengthen.
4. Movement is good for blood circulation and for immune building.
5. Treat with homeopathic or natural medicines as much as possible.
6. Work closely with a vet who reviews often.
7. Public will not be noticed by rats, as they cannot see very well, but they will sense the warmth of bodies around them.
8. They will be great teachers.

12.05.05 Rat report e-mail from the assistant curator, MASS MoCA

Hi, Kathy,

Sorry for the delay . . . things have been nuts around here. Without further *ado*, here's the rat girl update:

Matilda: Had a seizure while Hilary {the vet who comes every few weeks} was examining her. Her right eye has a mild infection and red tears. We are going to start using eyebright tea daily

Kathy High

for 10 days and will call Hillary with an update. No tumors, chest is great. Overall in good health. Wanted to be touched, and seemed very affectionate.

Tara: She is severely overweight. Her skin condition is probably due to the fact that she is unable to clean herself properly. It's not an infection; that area on her back is just dirty. She said in the meantime we can clean that little spot for her. Need to watch treat intake. Eyebright tea to soothe eyes (no infection, but look a little swollen.) No tumors, chest is great. Overall in good health.

Star: Perfect weight. No tumors and chest is great. Eyebright tea to soothe eyes (no infection, but look a little swollen.) Overall in good health. [See figure 27.4.]

So everyone's doing well, but we need to work on Tara's diet, and Matilda could stand to lay off the treats a bit too. She said that Star is the ideal weight. We are going to start administering eyebright tea on all of them, to see if it helps with the slight swelling of their eyes, but will continue to give them the eye salve if they have infection.

Take care,

Molly O'Rourke

Sentient Life

. . . all becoming is a becoming-minoritarian. . . . Becoming-minoritarian is a political affair and necessitates a labour of power (*puissance*), an active micropolitics.

GILLES DELEUZE AND FÉLIX GUATTARI, *a thousand plateaus*

02.20.06. After the exhibition the rats came to live with me. Then Mike and Peg Wilber begged to take them to their home. They took them, and loved them madly until they died. They had been their real caretakers and would report on their every tick.

They died within two months of each other. They slowly slipped away. Matilda died with me, and the other two, Star and Tara, with Peg and Mike. Each rat was held as she passed. They lived over two years, beyond what was expected of them. They were cremated all together.

09.03.06. Excerpt of e-mail from Dawn Hayman, animal communicator, Spring Farm Cares: postmortem telepathic conversation with the rats.

Here is what I do get from the rats—and I get them as a group:

"The work that we did with people was what was important to us. Being a part of a living exhibit was ok, sometimes stressful, but mostly ok. But the highlight of it all was introducing people to rats in general and us in particular. . . .

Usually, humans do not see rats in a favorable light. . . . so they do not reap the benefit of our genius, heart, love, and observations. We live close to the planet and are aware of many things that



Figure 27.4 Star, HLA B27 albino transgenic lab rat. Photograph by Olivia Robison.

Kathy High

humans are not aware of. In the laboratory setting, of course, we are . . . separated from our natural connection to the Earth and her vibrations. Therefore, as rats, we were also trying to reconnect to our spiritual heritage and truth. . . . much like the humans who came to see us in our exhibit. We are not certain what humans learned from us, but we know that they did learn something. We learned that humans are very closed off from the communications of nature and the Earth. Anything we could do to help them was very good. We were glad for the time we had with you."

Transmission

The lab technician looks down at her hand. She is shaking. She starts sucking her middle finger, which is bleeding.

The rat looks at her with a smirk. The transfer had occurred. She had succeeded. She'd bit the hand that fed her, through the latex gloves. Punctured the skin ever so slightly and then tongued the wound. Transferring genetic material. They would then be blood sisters. Bonded. Twins.

Acknowledgments

Embracing Animal (www.embracinganimal.com) was an installation that was part of the "Becoming Animal" exhibition at MASS MoCA, North Adams, Massachusetts, May 2005–February 2006, curated by Nato Thompson. I would like to extend my thanks to the staff of the museum who worked so hard to keep the rats healthy and happy: Molly O'Rourke, Bridget Hanson, Richard Criddle and crew, vet Hilary Cook, and especially Mike and Peg Wilber. Special thanks to Adam Zaretsky, who is a constant inspiration.

Notes

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