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Biotech Patronage and the Making of Homo DNA

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Timeline

On August 6 and 9, 1945, two bombs developed by the Manhattan Project were dropped on major cities in Japan. Immediately after the explosions, the military sent in researchers to measure the impact of the radiation by collecting epidemiological data on the health status of survivors, and several other waves of research teams continued in their wake, most notably the Atomic Bomb Casualty Commission.¹ In 1984 the U.S. Department of Energy (DOE) announced it would begin a new endeavor to represent DNA for the purpose of understanding heritable mutations caused by radiation, so that the DOE could more clearly track the effects of the bombings of Hiroshima and Nagasaki by studying the genetic mutations in descendants of survivors.² From the Manhattan Project was born the Human Genome Project. In the late 1980s and early 1990s, pharmaceutical companies were successfully hyping the potential of recombinant DNA research to potential stockholders and venture capitalists,³ and by 1997, Richard Klausner, director of the National Cancer Institute, announced that almost all the Institute's funding would be spent on genetic research.⁴ During this period, gene research began to yield results that lent themselves to new forms of molecular representation, and genetic iconography exploded.⁵ Alas, the result was neither a utopian nor a Frankensteinian future, but relentless propaganda reducing human beings to inert matter as stupid and unable to control themselves as molecules of rice protein.

The harms of this genetic iconography—distracting from the actual political-economic roots of most health problems, including the racism that led to dropping the gene-damaging atomic bombs in the first place—were furthered by a curious alliance of artists, curators, and biotech advocates. Caught up in the excited debates over new ways to define human nature, and the nature of other organisms as well, artists were quick to contribute.

Perhaps more relevant to their success, major museums and other public institutions were eager to support these artists' endeavors, meaning that capitalism's process of natural selection led to the proliferation of banal work on genetics, and proved far less hospitable to themes engaged with nongenetic forms and content. This chapter reviews the funding and aesthetic commitments behind major gene art shows and catalogs since 2001, and discusses their broader impacts. Political theorist Murray Edelman writes:

Though only a fraction of the population may experience particular works of art and literature directly, the influence of these works is multiplied, extended, and reinforced in other ways through variations and references in popular art and discourse; through "two-stage flows," in which opinion leaders disseminate their messages and meanings in books, lectures, newspapers, and other media; through networks of people who exchange ideas and information with each other; and through paraphrases that reach diverse audiences.⁶

Biotech firms and their public relations consultants grasped Edelman's point. Consistent with a deliberate propaganda effort on the part of some individuals and corporations, and at odds with even the overt intentions of many of the artists, the effect of these gene art shows has been to convince the broader public that genetic representations of disease, behaviors, and even human beings are the ones that are both inevitable and truthful. The result is of a piece with the genetic narrative, the tragic genre of our age. The gene art images in these shows, regardless of content, show us at the mercy of a code we did not create and that, individually, we cannot control. Although some of these stories may hold out a utopic promise of perfection, even the so-called hopeful representations are fraught with catastrophic possibilities: everyone knows what happened to poor Icarus.

The message that we are on the threshold of entering the Brave New World and must decide only if we want to embrace the new age or behave as Luddites, is hard not to avoid, especially in the United States. One possible reason for the ubiquity of this framing is that the choice is aptly put. In fact, this feeling some have is not the result of any actual sweeping changes in medical treatments, or even their foreseeable potential. Public health experts caution that gene therapies may never come to fruition. If they do, the Centers for Disease Control states that they will be helpful only for a handful of odd diseases: over 90 percent of our diseases have largely environmental and behavioral causes; 99 percent of people are most affected by these, and not inherited diseases.⁷ Financial investors hoping to cash in on gene therapy also are regularly disappointed.

In 2001, a "Motley Fool" financial columnist wrote, after pointing out that years of research had produced just one gene therapy treatment, affecting a very small number of people: "There's no reason why the average investor should be invested in biotechnology companies. None." Five years later the situation was the same. Companies still had not made good on their promises: "Investors who had been enchanted by biotechs were soured by the sorry performance of some experimental drugs," one journalist wrote, after noting

that despite the stock market's overall increase of 5 percent that year, biotech stock values in 2006 had dropped 4 percent.⁸

Yet in 2002 the American Museum of Natural History (AMNH) exhibit "Genomic Revolution" announced, "By the year 2020 it is highly possible that the average human life span will be increased by 50 percent; gene therapy will make most common surgery of today obsolete; and we will be able to genetically enhance our capacity for memory." Though the claims about gene therapy in the AMNH show were especially enthusiastic, even overtly critical installations unintentionally reinforce the cause of scientists and corporations that see money to be made in selling dreams. The common ground all these shows share is that they propagate supposedly scientific results that scientists themselves have not been able to obtain. These exhibits are an important venue for scientists, and especially biotech firms, to gain converts to their faith in their work on DNA, the "Book of Life," to redeem us from such sins as smoking or the fate of living in pollution.⁹ Through attracting visitors for in-person spectatorship, but perhaps more through the public relations blitzes in the towns the exhibits tour, and the print and online media that cover the exhibits, curators are creating the Genomic Age that they claim to be discovering.

Major Exhibits

"Paradise Now: Picturing the Genetic Revolution," Gallery Exit Art in Downtown New York City, September 9 to October 15, 2000

"Paradise Now" was a blockbuster exhibition of works by thirty-nine artists that toured to at least five major cities and published a widely marketed catalog.¹⁰ The installations ranged from those eagerly celebrating new venues of potential beauty, such as Helen Chadwick's luminous colored photograph *Nebula* (1996), to the tongue-in-cheek *Genomic License #5 (Alison Knowles Properties)*, 1992–97, Larry Miller's portrait of a woman's clothed body alongside images of her blood, skin, hair, and fingernail samples. Though Affymetrix, Orchid BioSciences, Variagenics, and Noonan/Russo Communications—the last a biotech public relations firm—were among the exhibit's sponsors, the "man behind the curtain," as one artist called him, was Howard Stein. Stein, who led the Dreyfus Corporation and whom some credit as the father of the mutual fund, told me, "My luck in the world is being aware of things that have a future. Things like Haloids. Later changed their name to Xerox."¹¹ One of the show's organizers, explaining Stein's foresight, said that he "knew to invest in biotech stocks because he always put his money where he sees the government investing."¹²

Not only did Stein fund two giant billboards promoting "Paradise Now" in lower Manhattan, spaces usually occupied by jeans companies or rock stars, he also funded full-page color advertisements for the show in the *New York Times* and hired a publicist, devoting about \$500,000 to the show. According to the "Paradise Now" brochure, "The

major benefits of sequencing the human genome are yet to come. Medicine will be transformed, diagnoses will be refined and side-effect-free drugs will target specific diseases, working the first time they are administered.” Not only that, “Biotechnology will be . . . increasing the nutritional value of crops and making them easier to grow.”¹³

Natalie Jeremijenko, an artist and scholar, called “Paradise Now” a “corporate snow job and an embarrassment.” Of her *One Tree* installation in the show, she said, “It doesn’t serve my piece to be framed in this way.” Jeremijenko was showing six trees cloned from the same source but revealing significant differences in their appearance. Even when raised under conditions far more similar than those humans encounter, these simple, genetically identical organisms vary quite distinctly in size, health, texture, and so forth. However, the show’s signage and pamphlet framing the experience, Jeremijenko said, had led viewers to infer that the trees were different because they were raised in different environments. Indeed, this was exactly how Stein characterized the piece when he spoke with me: “She cloned them and they’re all identical and now she’s going to plant them and see how they’re affected by the environment. Over time I’m sure they’re going to grow differently.”

In fact, Jeremijenko was making a far more interesting point that the show’s funder missed: due to randomness, two organisms cloned from the same source will differ, even when their environments are identical. Jeremijenko was planting *pairs* of cloned trees in various locations in the San Francisco Bay area, and all the cloned trees in the Exit Art show had been raised together but had strikingly different characteristics. After the curators Marvin Heiferman and Carole Kismaric heard that Jeremijenko had organized a panel questioning the corporate sponsorship of “Paradise Now,” they informed her that her installation would not be included when the show toured.

Stein’s funding of “Paradise Now” was of a piece with his earlier and subsequent support for gene art. Indeed, he had sponsored one of the first exhibits on the theme in Santa Barbara’s Museum of Art in 1998.¹⁴ Stein does this through a nonprofit run by himself and his family, Joy of Giving Something, Inc. (JGS). JGS owns many of the photographs in the shows it supports, and as of 2004 it had an art collection valued at close to \$27 million.¹⁵ Among subsequent major projects that JGS funded are “The Art of Science” (2004),¹⁶ and further curatorial work by Heiferman and Kismaric. Stein’s JGS also was a major sponsor of the Gene Media Forum at Syracuse University, with donations of at least \$500,000.¹⁷

In a telephone interview Stein told me that he supported these shows because he wanted to ensure that biotech firms in the United States would avoid the hostility they generate in Europe: “I don’t think they [the biotech industry] presented all the facts to the public. Had they presented all the facts and had they participated in doing what they should have been doing, then there might not have been so much of a problem for Monsanto.”¹⁸ Stein compared the bad press of genetically modified foods with President Clinton’s sex scandal, offering that “open discussion” was more likely to decrease hostility “than if someone is

saying here it is, take it or leave it. Once the information about Clinton's activities was in the open, the public had the feeling 'but I don't want the president to be impeached.' " Stein also told me he agreed with the lukewarm reviews by art critics. "I think the critiques in the *New Yorker* and *Times* were on target. The show's really, you know, a mish-mash." He also complained that his favorite, a work by Helen Chadwick from his personal collection, was "hung badly."

**"The Genomic Revolution" at the American Museum of Natural History,
May 26, 2001, to January 1, 2002**

The exhibit begins in a dark room aglow with video loops of talking heads refracted through Plexiglas, seemingly coming from nowhere. But the signage stealing one's attention repeats text from the brochure indicating biotech's ability to enhance life expectancy and conquer disease. "You may be born with your genes, but that doesn't mean you can't change them," one sign announces. "Fixing genetic malfunctions by repairing 'flaws' in the DNA code—using a technique called gene therapy—is no longer science fiction," says another. But when I asked Bruce Alberts, president of the National Academy of Sciences, to comment on gene therapy breakthroughs, he said dryly, "I didn't know there'd been any."¹⁹ Dr. Robert DeSalle, a molecular biologist and the exhibit's curator, agreed that while there are several hundred ongoing experiments, not a single one has proven that human gene therapy can offer permanent relief without side effects.²⁰

DeSalle said he was familiar with gene-therapy research failures, including the 1999 death of eighteen-year-old Jesse Gelsinger in a study at the University of Pennsylvania and the aggressive and irreversible advance of Parkinson's disease among patients in a clinical study who had holes bored in their heads, followed by injections of fetal tissue cells into the holes, an account of which appeared in *The New England Journal of Medicine* two months before his exhibit opened.²¹ Dr. Paul Greene, at the Columbia University College of Physicians and Surgeons and a researcher in that study, told the *New York Times* of the awful symptoms the therapy caused. The people injected with the test formula "chew constantly, their fingers go up and down, their wrists flex and distend." Dr. Greene continued, "It was tragic, catastrophic . . . a real nightmare."²² When asked why the exhibit avoided these alarming examples, DeSalle said they were "too complicated."²³

Art historian Mary Coffey points out that the presentation of information in digital displays recalls the work of Jenny Holzer, who mocked this type of sign in her 1990 takeover of the Guggenheim. DeSalle told me he did not believe the signs' statements, including one claiming "In the near future humans will live 150 years." He explained that the signs with text he knew to be false were not installed to be factual, but were "designed to get people to turn the corner."²⁴ Coffey takes issue with that intention: "When you're presenting an exhibit under the pretense of scientific accuracy, you have an ethical responsibility to be careful. The American Museum of Natural History is an authoritative institution of knowledge and research. Entertainment is never supposed to

eclipse its educative values.”²⁵ Singling out the phrases on the LED signs as especially worrisome, Coffey said, “That type of sign is an authoritative medium that you associate with information and statistics, like the Dow Jones and Nasdaq, and there was nothing in the exhibition that critiqued or problematized the statements.”²⁶

Dr. George Annas, chair of the Department of Health Law at Boston University, said he disliked what he called the show’s “rah-rah” tone. “Genetics have nothing to do with enhancing life expectancy,” he said, adding, “Public health advances have increased life expectancy seven hours a day for the last hundred years. Clean air, clean water, not smoking—all those things really have an impact. When it comes to longevity, nurture is much more important than nature.”²⁷

DeSalle said the text was “balanced.” To prove this to me, he quoted from the exhibit: “Gene therapy is a young science and right now, it cannot cure all genetic diseases; in fact clinical trials can be risky.” I told DeSalle the statement implied that gene therapy, while not curing “all” diseases, might be curing some right now, and perhaps all of them down the line. He told me that I had misunderstood the text. Annas believes the term “gene therapy” is itself misleading, since to date no one has received any benefits from the trials, and hence no therapeutic use has yet been demonstrated: “These are *gene transfer* experiments. There are no recognized genetic *treatments* for anything, nor is there likely to be for a while.”²⁸

Referring to studies documenting the birth defects and adult maladies besetting cloned animals, Annas said, “The cloning exhibit didn’t talk about the problems every cloned animal has had. People have known for quite some time about the problems with cloned animals, but the exhibit only leads you to think that the idea is a little strange and raises ethical questions,” without mentioning the widespread practical difficulties of cloning. Andrew Imperato, president of the American Association of People with Disabilities, referred to the exhibit’s claims as a “classic example of overpromising what science is able to deliver to increase excitement and acceptance of what amounts to a very expensive and unproven experiment that is making it easier to discriminate on the basis of genetic information.”²⁹

Some installations were interactive computer screens with survey questions. As you finished, the screen displayed your responses and compared them with those of other museum visitors as well as with the general public. With brilliant marketing savvy the show situated the broader public’s revealed opposition to biotech in a context that told the survey-takers in the exhibit that their fellow citizens are non-museumgoers who deserve to be educated so they see things the way they are seen by the AMNH.

The AMNH does not usually have art in its exhibits, but it made an exception so it could commission work that would force people to see themselves as no more than their DNA.³⁰ The installation by Camille Utterback (*Drawing from Life*, 2001) takes its last shot at telling the audience that they are their genes. Upon leaving the exhibit, one’s image is captured by a hidden camera and rendered on a life-size screen by the exhibit’s

omnipresent As, Cs, Gs, and Ts, the first letters of the proteins in our DNA. Though presented as “art,” the exhibit space itself credits no artist and provides no title, so that the installation was merely one more medium for the show’s instruction that we are our genetic proteins.

DeSalle explained the reasoning for the Utterback commission: “We always have specimens. We didn’t have that luxury. The art pieces became specimens for us.”³¹ The art was conceived and contextualized as an extension of the scientific journey. We, the audience, are the specimens of DNA. Were that piece framed as an artwork, the installation might invite our speculation about this representation as one possibility among others, but as it is, spectators leave with one more announcement of the reductive finality of their genomes.

The AMNH show was sponsored by the Richard Lounsbery Foundation, a secretive group headed at the time by perhaps the most notorious science spinmeister of the 1990s, Dr. Frederick Seitz. Seitz had been funding marketing research on European public attitudes to genetic research since the early 1990s, and credited himself with having the vision and, one might add, the financial wherewithal, to press for the show. “I was on the board of the museum for many years and said you need to have a good exhibit on DNA,” he said. The reason? “Enthusiasm for [genetic research] needed to be boosted a bit.”³²

Seitz also was chairing the corporate-sponsored George C. Marshall Institute (GCMI), founded in 1984 to support Reagan’s Star Wars. As the Lounsbery Foundation president, Seitz directed funds to industry-friendly science causes, including his own GCMI. He had been denounced by his colleagues on various occasions, especially for a report he had formatted to misleadingly imply sponsorship by the National Academy of Sciences (NAS). Readers would think that the NAS did not believe global warming merited restrictions of carbon dioxide emissions, but the NAS was on record as holding the opposite.

Seitz also wrote a 1996 *Wall Street Journal* opinion piece falsely claiming that a international scientific report cautioning about global warming had been altered to misrepresent the conclusions.³³ In response, the Executive Committee of the American Meteorological Society and the trustees of the University Corporation for Atmospheric Research jointly rebuked Seitz:

There appears to be a concerted and systematic effort by some individuals to undermine and discredit the scientific process that has led many scientists working on understanding climate to conclude that there is a very real possibility that humans are modifying Earth’s climate on a global scale. Rather than carrying out a legitimate scientific debate through the peer-reviewed literature, they are waging in the public media a vocal campaign against scientific results with which they disagree.³⁴

While the GCMI is an obvious right-wing operation and Seitz is a known industry hack, the profile of the Richard Lounsbery Foundation and its ties to conservative causes

have been deliberately left in the shadows, with assistance from none other than the AMNH itself. Just as banks discreetly look the other way for their more lucrative clients, the AMNH, in violation of standard policies regarding funding attribution, omitted mention of the Lounsbery Foundation in its 1999 credits of major funders for “Epidemic! The World of Infectious Disease,” and was instructed to do so for the “Genomic Revolution” exhibit as well.

So accustomed to secrecy is the organization that the Lounsbery Foundation’s executive secretary, Marta Norman, interrogated me as to how I knew the Foundation contributed to “The Genomic Revolution.” She was incredulous when I told her the AMNH credited the Lounsbery Foundation as the show’s major funder, since Norman had asked AMNH President Ellen Futter not to mention the Foundation, and in the past Futter had obliged.³⁵

When I asked DeSalle, the AMNH curator for both “Epidemic!” and “The Genomics Revolution,” about the Lounsbery Foundation, he implied the foundation was a garden variety philanthropy with no special agenda: “Lounsbery is a benefactor, a guy who wants to give his money away to benefit science.”³⁶ But Richard Lounsbery had died in 1967, after having established a trust in his name in 1960. The focus on biomedical research occurred when the fund began disbursements in the 1980s, several years after Vera Lounsbery, Richard’s wife, had died.

The AMNH exhibit included one more Lounsbery Foundation–sponsored item: a free glossy magazine geared to the one audience even more gullible to scientific authority than the adult public: their children. *The Gene Scene* comic book asks, “What makes you YOU? What makes me ME? A lot is due to heredity. Your genes control/ What makes you YOU, from the color of your hair/ To the size of your shoe.”

“Gene(sis): Contemporary Art Explores Human Genomics,” Seattle, Henry Art Gallery, University of Washington, April 6 to August 25, 2002

This show follows the approach taken by “Paradise Now,” packaging art as “education” for a general audience and offering a curriculum for elementary and middle-school students. “Gene(sis)” includes genetically themed pieces contributed by over fifty artists, many of whose work also appeared in “Paradise Now.” It has toured to Berkeley, Minneapolis, and Evanston, Illinois.³⁷ Once again, an art show is conceived as the key component in an educational program using the authoritative discourse of science and the subconscious saturation of the mind through artist renderings so that the audience cannot avoid the message that, love it or hate it, theirs IS a genetic age. An article describing the show in a student newspaper at the University of Minnesota follows the show’s script: “Gene(sis) is an art exhibit that raises questions and provides commentary about the ethical and social implications of genomics, one of the most compelling issues of modern times.”³⁸

But what is the evidence for this claim that genomics is a “compelling issue” outside the hoopla these shows create? There is no mention of the fact that the major challenges

and breakthroughs affecting world health in the twenty years since the Human Genome Project began have had little to do with genetics. It is true that scientists are using insights from molecular biology to shape their hypotheses for developing drugs, but it is still the case that the impact of even these related projects is minuscule in the context of public health problems and solutions. Between 1965 and 1995, asthma doubled,³⁹ obesity became an epidemic,⁴⁰ and AIDS went from a death sentence to a managed illness.⁴¹ The Human Genome Project has been irrelevant to these problems and will play no role in their solutions for the foreseeable future. The only reason genomics is “one of the most compelling issues of modern times” is that art and museum shows repeatedly insist this is the case.

The show itself states: “Gene(sis) came into inception as a response to the Human Genome Project (a government funded research project). Artists, scientists, historians, the biotech industry, museum professionals, educators and bioethicists created Gene(sis) to aid the understanding of how genomic research will affect human life.” This is an overstatement, but perhaps only for a short time, and not because our genomes will suddenly be able to do things we never imagined. Pablo Picasso, when told that his portrait of Gertrude Stein did not resemble her, is said to have replied, “No matter; it will.”⁴² The main way genetic research will affect human life will be by teaching us to be passive, accept scientific authority, and ignore the effects of politics on changing our environment and health, not by substantively changing our health status.

This show not only received major funding from biotech firms, but the texts and informational materials were prepared with guidance from the employees of Seattle-based ZymoGenetics, whose Web page announces that it “creates novel protein drugs with the potential to significantly help patients fight their diseases.”⁴³ There are no public health officials included in the working group assembling the show, and hence no voices such as that of Dr. Annas to question the show’s premise that the genetic age is anything more than a state of mind.

“Ecce Homology,” 2003, University of California, Los Angeles, Fowler Museum of Cultural History, November 6, 2003, to January 4, 2004

This exhibit is one of numerous efforts to forge working relationships in the university among artists and scientists, an ambition that seems especially prominent in some of the programs at various campuses of the University of California, including those of Los Angeles, Santa Barbara, Santa Cruz, and San Diego. In “Ecce Homology,” at UCLA, the collaborators designed software to display, as they put it, “genetic data as luminous pictographs that resemble Chinese or Sanskrit calligraphy. Five projectors present Ecce Homology’s calligraphic forms across a 40-foot-wide wall.” The installation invited participants to create, through their movement in front of a screen capturing their shadows, projected lingering recorded fragments of their motion that are matched with images from samples of a rice genome. The result is a supposedly “scientifically accurate”

simulation of Basic Local Alignment Search Tool (BLAST), a Web-based data-mining technology used to match similar DNA fragments, one that requires exactly the high-speed computing technologies sold by the exhibit's main funder, Intel.

The exhibit text states that it was “named after Friedrich Nietzsche’s *Ecce Homo*, a meditation on how one becomes what one is,” then elaborates that the project “explores human evolution by examining similarities—known as ‘homology’—between genes from human beings and a target organism, in this case the rice plant.”⁴⁴ The curators lack both originality—Mark Lesney’s “Ecce Homology” (2001), published in the trade journal *Modern Drug Discovery*,⁴⁵ offers the same claims that the UCLA curators make in 2003—and their invocation of Nietzsche might be classified as a crime against philosophy. The genetic homologists do not stop at flattening the differences between humans and rice, but perform their ignorance by ignoring the specificities of intellectual history, importing a pun from the roots *homo-* and *hom-* that suits them from an author whose ideas certainly do not.

“Ecce homo” is the Latin phrase for “behold the man!”, attributed to Pilate when Jesus, bleeding and wearing a thorn crown, was presented to the crowd seeking his crucifixion. The text Nietzsche titles “Ecce Homo” is an artfully bombastic self-presentation by Nietzsche as himself to be martyred, along with Jesus, by the evolutionary discourse overtaking his colleagues in the humanities.⁴⁶ Those who had been consistently misreading Nietzsche’s parodies of the social Darwinians and took them literally were about to have their errors pointed out yet again. Nietzsche brags in “Ecce Homo” about how he “attacked David Strauss.”⁴⁷ Nietzsche’s attack on Strauss is specifically on Strauss’s efforts to appropriate from evolutionary theory observations about natural selection for use in political theory. Criticizing Strauss sixteen years earlier in *Untimely Meditations* (1873), Nietzsche had overtly mocked the ancestors of the artist–scientists who presented “Ecce Homology.”⁴⁸ He calls Strauss an “ape genealogist” for his attempt to erase the historical, cultural differences among groups distant in time and place, and pretend we are the same.⁴⁹ Nietzsche mocks Strauss for ignoring the many differences among humans based on their histories, and would presumably object to homologizing humans with rice.

In “Ecce Homo,” Nietzsche writes: “[S]cholarly oxen have suspected me of Darwinism.”⁵⁰ He said of his audience, “I have always recognized who among my readers was hopeless—for example, the typical German professor—because on the basis of [a parodic] passage they thought they had to understand the whole book as a higher Rééalism.”⁵¹ Nietzsche is making a pun, playing on the name of Paul Rée, his former friend who was a philosopher enamored of sociobiology’s potential to put philosophy on an objective—or, as Nietzsche put it, a more Rééalistic—footing.

Despite the low quality of science education in this country, it is more likely that a student would be able to notice flaws in the exhibit’s presentation of scientific data than its inaccurate claim to roots in Nietzsche. The pun “Ecce Homology” plays on the fact that *homo-* is from a Greek root that means “earth,” and means “man” (in contrast with gods); and *hom-* is from a Greek root meaning “same.” To understand this, one would

have to look for history, meaning, and difference, all of which BLAST destroys. Indeed, Nietzsche himself started out as a philologist and believed that it was to the written codes of history, not blood, that scholars should look for insight, not to mention health and happiness.⁵²

The Political Economy of Gene Art

Before exploring how these episodes in gene art shows reveal symptoms of underlying dynamics in art exhibitions, it is important to stress that the people organizing these shows, and the artists contributing their installations, are not hired hacks conspiring to trick citizens into ignoring their need for more clean air legislation and less funding for gene research on asthma. Most of the people working on these shows are earnest curators and artists fascinated by genetic iconography and curious about engaging in a range of relations to it, from laudatory to loathing. The problem is that the industries that benefit from public support for genetic research and genetic myths are easily able to control the public's categories of imagination, whereas those working in other fields must fight for attention and comprehension. Fortunately, some of these other individual efforts are successful, and are discussed below. Before turning to these, the motives among the three major sources for the large genetic exhibits are considered: corporations, gallery and museum boards, and artists.

Corporate Strategies

In a memorandum Greenpeace obtained in 1997 by crashing a conference organized for the industry group EuropaBio, Burson-Marsteller—the world's largest public relations firm—discourages the biotech industry from using traditional PR techniques: “In order to effect the desired changes in public perceptions and attitudes, the bioindustries must stop trying to be their own advocates.”⁵³ The memo explains, “All the research evidence confirms that the perception of the profit motive fatally undermines industry's credibility on these questions.” Art and museum shows are crucial because they allow the firms to stay off what B-M terms the “killing fields” of rational debate, and to use “Symbols—not logic: symbols are central to politics because they connect to emotions, not logic.”⁵⁴ In particular, bioindustries should proliferate “symbols eliciting hope, satisfaction, caring and self-esteem.”⁵⁵ No one is going to believe Monsanto when it tells people to trust it, but if its message comes across through an art gallery or prestigious museum, then the public will be convinced.

B-M's strategy was employed by the public relations firm NoonanRusso in its work for Stein and the biotech firms backing “Paradise Now.” Edelman explains, “Contrary to the usual assumption—which sees art as ancillary to the social scene, divorced from it, or, at best, reflective of it—art should be recognized as a major and integral part of the transaction that engenders political behavior.”⁵⁶ How can we assess the impact of the

“Paradise Now” show, or any other art exhibit, on the public imagination? Edelman points out that these effects are insufficiently studied, even though what we “know about the nature of the social world depends on how we frame and interpret the cues we receive. . . . Art teaches us to see the world in new ways, and the creation of categories provides one kind of aesthetic lens through which conception and vision are constituted or reconstituted.”⁵⁷ Stein may not be able to provide a quantifiable measure of the success of his investments, but the guy who bet on Haloids and ran the Dreyfus Fund for decades is probably not making a lot of bad business decisions.

At their most instrumental, biotech proponents self-consciously use their economic levers of control, as did Stein, Seitz, and the biotech firms sponsoring these gene art exhibitions, to create the visual and discursive languages they desire. Through their foundations, direct funding, and contributing content appearing in museum shows, biotech advocates are creating the public’s genetic imagination while stunting more lively and creative modes of self-understanding. Those exposed to these messages, reflective creators in the Human Being Project, have been coopted as organisms into the Human Genome Project.

Such an enterprise is enabled by the public’s low level of semiotic sophistication, a failure of this materialist culture’s citizenry to see the materiality, and hence the efficacy, of work done by signs, i.e., images that are phenomenologically separate from what they are imagined to signify. It is a common myth that signs are not things, and therefore exert less positive or negative consequences than the effects of so-called reality, a place of material disease, genomes, and molecular proteins. Generally unrecognized is that words and all other symbols are every bit as material as the objects of scientific study: there is no idea that can exist without the compression of air when one speaks, the ink on the page, the electrons in the computer display, for instance.⁵⁸ The combination of public relations experts with acumen on the ways they can shape the material culture of genetic discourse and the naïveté of the general public makes for an uneven playing field in the competition of ideas, a chess match between a person who knows the rules and another who thinks the queen may move only one square at a time.

Museum and Gallery Strategies

In addition to the high-profile shows initiated by biotech boosters, less overtly instrumental nonprofit board members seek funding in many places, and have been known to develop shows they think will find financial support, either from blockbuster ticket sales or from corporate sponsors. In these cases the decision to mount a gene art show and seek funding from Monsanto seems no different from one to mount a Fabergé egg exhibit and seek sponsorship from the cosmetics firm of the same name.⁵⁹ Just as cosmetic sales depend at least as much on the brand image as on the quality of the item marketed, biotech firms’ ability to attract investments depends on their ability to sell the brand of mesmerizing “potential” and astronomical profits, and not their actual meager and largely negative

revenue flows. Hence, nonprofit arts organization boards are likely to find in biotech firms the funders and collaborators interested in branding their field with hype that cannot be sustained by their clinical research.

Artist Strategies

In addition to biotech firms and nonprofit boards, artists and curators have their own reasons for making gene art. The artists who began displaying genetic imagery in the early 1990s—such as Suzanne Anker, Steve Miller, Dennis Ashbaugh, and Helen Chadwick—situate themselves as immersed in a new representational landscape of the human being that invites artistic engagement. Their object of fascination is the gene. The novelty of genetic portraits alone seems to inspire their fascination and output. The authors of a book on gene art describe the gene artist Iñigo Manglano-Ovalle who, as a present for a patron's spouse, "devised an unusual way to capture the man's true likeness. He conspired with the patron's barber to pluck some hair from his customer's head, and sent the sample to a forensic laboratory, which extracted the DNA."⁶⁰ The image from this became a piece Ovalle called *Clandestine Portrait*.⁶¹

Others have of course joined their ranks since then, and are using media such as animals or other organisms to materialize their take on genetic research as a new and magical field of possibility. Eduardo Kac's transgenic fluorescent green rabbit is the best-known of these, and Kac himself is the Damien Hirst of gene art. These works are the ones most likely to be praised by scientists and biotech firms.⁶² Some artists are myopic and can do little more than reproduce the culture mass-produced in front of them. When those who have produced these images come to see their own reflections in these shows, they praise artists for their "vision." About four-fifths of the exhibits in "Paradise Now" and "Gene(sis)" reflect this perspective.

Of course gene art is also the occasion for biting social critiques, especially through parody. This appears to be the second most common type of gene art. Several of the works in "Paradise Now" and "Gene(sis)" display these qualities. For instance, Karl Mihail and Tran T. Kim-Trang exhibited *The Creative Gene Harvest Archive* (1999). The label text said the test tubes with human hairs had been "harvested by Gene Genies Worldwide©" from artists, and that these specimens would be used to genetically engineer creative individuals. Alexis Rockman's famous painting *The Farm* (2000), exhibited in the "Paradise Now" show and on the giant billboards promoting, it has similar overtones, presenting a familiar present showing hints of an emerging dark future. Rockman writes of the animals in various states of "normalcy": "The flora and fauna of the farm are easily recognizable; they are, at the same time, in danger of losing their ancestral identities."⁶³

For a related commission from Creative Time to develop an on-line genetically themed game, conceived and funded by Howard Stein,⁶⁴ Natalie Bookchin launched *Metapet* (2002) (<http://www.metapet.net>). To play *Metapet*, called the "World's First Transgenic Pet Game," one controlled a worker/pet strategizing to evade the controls of biotech firms and

workplace social Darwinism. Workers gained extra points if they were randomly allowed genetic improvements so that they could work longer and harder, for instance. All of these works seem intent on unsettling the trajectory the biotech industry wants us to follow by issuing giant warning signs about bioengineers' ability to change life as we know it.⁶⁵

The insights are biting and provocative, but nonetheless their political effect is at least as likely to work in ways the artists oppose. The problem goes to the very essence of parody. Insofar as an image materializes reality, the artist's intentions do not change the effects of the visualization. If I am breathing a toxic gas that I am told will heal me or, breathing the same air, and cautioned of its dangers, I will suffer equally, provided the warning does not lead me to alter my breathing. The dark images offered by the satirists resemble these toxic fumes, permeating our psyches as relentlessly as, if not more than, the same images delivered by those exclaiming their benevolence. The installations are meant to provoke resistance and questioning, but their substance is that on the horizon one can see that the enemy within us has already won. This is at least as likely to demoralize people and lead to passivity as it is to inspire action.

Highlighting the difficulty is the challenge to stay ahead of the biotech industry curve. Each day brings new and shocking discoveries. Even if they eventually turn out to be hype or hoax, the images in the *New York Times* of a cloned pet cat costing \$50,000 would challenge any gene parodist's imagination.⁶⁶ Also among gene art installations are those that eschew parody and instead directly confront the political economy they want to question, as Christy Rupp does in her clear plastic sandwich container labeled in large letters "TELL US what we are eating" and titled *New Labels for Genetically Altered Food* (1999–2000). This and other pieces overtly name their perception of harms biotech firms are causing, and challenge them to do something about this (i.e., "TELL US").

Remaining among the gene art contributions are the ones by people who truly understand art's power to create new truths and not simply affirm the dominant ones, to disrupt complacency, or to offer more and less obvious critiques. These are works that use their media to do something different from what the clichés say are possible. Examples include projects by Beatriz da Costa, Natalie Jeremijenko, and Critical Art Ensemble.⁶⁷ These are all prolific artists, and I limit myself here to some suggestive illustrations of what their work accomplishes.

Da Costa's *PigeonBlog* is a technologically impressive interface that integrates pigeons, GPS software, pollution detection sensors, cameras, and the Internet to allow people to see maps with indexed levels of air contaminants wherever the pigeons equipped with these devices fly.⁶⁸ The Web site where people may view the results of the pigeon travels states:

By using homing pigeons as the "reporters" of current air pollution levels we are hoping to achieve two main goals: 1) to re-invoke urgency around a topic that has serious health consequences, but lacks public action and commitment to change; and 2) to broaden the notion of grassroots scientific

data gathering while building bridges between scientific research agendas and activist oriented citizen concerns.⁶⁹

This project rejects the gene art premise that human beings are primarily victimized or advantaged by our genes, and instead performs an alternative reality. Da Costa assumes our ideas shape our environments, holding out the promise that new ways of visualizing data might empower citizens to learn and to participate differently in shaping the conditions of their health.

Jeremijenko also offers new technologies for humans to interact with their environments. As is the case with da Costa, Jeremijenko's projects are not comments on someone else's experiment, but her own interventions. Through *OneTrees*, described above, and her many other similarly conceived projects, including the *Feral Robotic Dogs*, *OOZ*, and the *Biotech Hobbyist*,⁷⁰ Jeremijenko uses the interactions she stages among animals, humans, and technologies to offer refreshing and astute reconceptions of the banal "nature/nurture" debate. If people are like other organisms, then that is only because the other creatures also have their own lively communities and cultures that shape their health and environments. And if genes do determine who we are, then that means our only hope of self-change is through what we do with and to our environments. She shows these are much more effective ways to change what ails us than second-guessing the noise that inevitably emerges in genetic programming.

The collective Critical Art Ensemble has done many projects that are clear parody, ratcheting up the stylized apocrypha of geneticists to the next level, perhaps just after the scientists have done this themselves. But their commitment to a language of "reverse engineering" and efforts at community outreach in various venues means their interventions are creating something new and teaching the aesthetics of what this looks like. The outcome of a collaboration among Critical Art Ensemble, da Costa, and Shyh-Shiun Shyu, *Free Range Grain*,⁷¹ has mobile labs people can visit if they have suspicions that their food labeled as free of genetically modified organisms is filled with genetically modified organisms. Such a direct action challenges the barrier between artists and scientists, marking the former not only as efficacious as the latter, but also much more thoughtful and creative.

Acknowledgment

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Notes

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