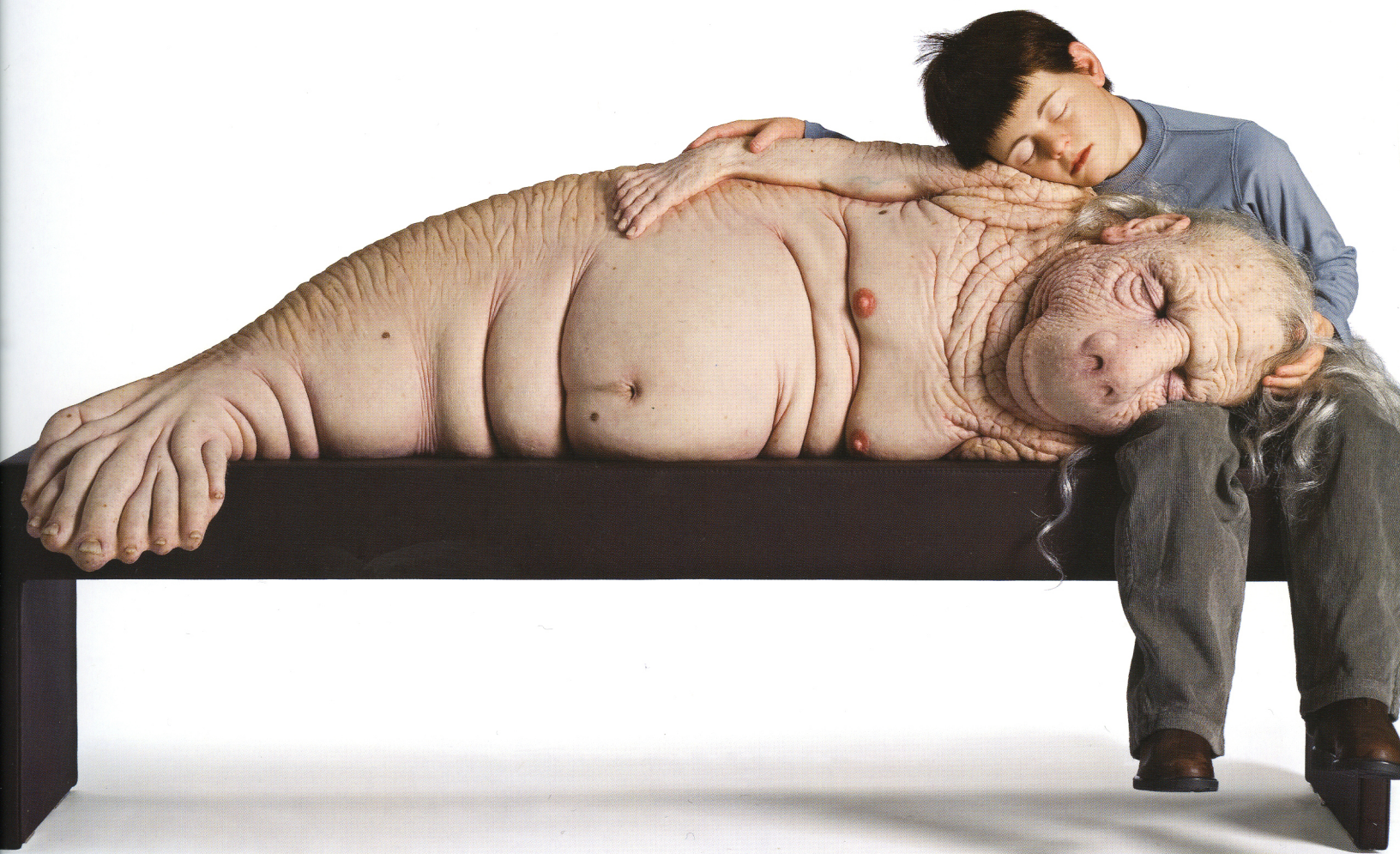


FAIRY TALES, MONSTERS,  
*and the*  
GENETIC IMAGINATION

*Edited by*

MARK W. SCALA





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# THE EXTANT VAMP (or the) IRE of IT ALL: FAIRY TALES and GENETIC ENGINEERING

*Suzanne Anker*

*Fairy, Fairy, Mary, Mary, how does your garden grow?  
From sulphur bells to cockleshells to test tubes  
lined up in a row.*

In the beginning, once upon a time, or many years ago in a faraway place, the story you are about to hear is true, but the names have been changed to protect the innocent. Narratives, mythologies, ideologies, and theologies all bring to the fore accounts of recurrent archetypes. How these archetypes come to be, what they mean, and what eventually results from their quests, queries, and vexations is the stuff of imagined worlds and psychocentric study. However, what is ciphered from these tales are repetitive forms and means, employed to reconstruct fictions of the “readymade.” If fairy tales have entered the current domain of art, then questions arise as to why there is such an eruption at this point in culture.

Like cell samples or botanical specimens, fairy tales are also formed into collections. As stories from an oral tradition are retold and codified to produce volumes (as in the work of Hans Christian Andersen or the Brothers Grimm), the Victorian fairy tale moves up the ranks in social class. These volumes form a data bank, like all exemplars of symbolic matrices. Reuse of the extant, so prominent a feature of collage, montage,

and appropriation, is a framing device for these collective narratives as well. Currently, the Frankensteinian mashup in videos, web browsing, and music expands on such combinatory practices. Within the scientific realm, the readymade has become a resource in xenotransplantation, tissue culturing, and reproductive technologies.<sup>1</sup> While the readymade and its reuse through recontextualization is one of the prime strategies of twentieth-century visual art practice, in the twenty-first century, art and science conceptually share this methodology.

Emerging from the swells of enchantment, the marvel is imbued with supernatural powers. Are superheroes, witches, fairies, and monsters merely fabrications of the mind? Are these strange, bizarre, and marvelous creatures aspects of the imagination? Or might they, in fact, be real? Recently such fanciful creatures have come to populate scientific laboratories, in the form of tobacco plants that glow in the dark, tomatoes that are frost resistant, and pigs that produce human insulin. The depths of visionary thinking which manifest such wonders have revamped the stuff of dreams into corporeal matter. Chimeras, genetic manipulations, and bioengineering have entered the phantasmagoric realm.

As hybrid forms, chimeras are composite figures



resisting discrete Linnaean species boundaries. The chimera has appeared and reappeared in myriad guises over centuries in numerous and various cultures. As early as prehistoric times, the chimera appears inscribed on cave walls in Lascaux, with the body of a man topped by a bird's head. In mythology chimeras take the form of amalgams. Prime characterizations of chimeras also populate H. G. Wells's evolutionary parable *The Island of Dr. Moreau* (1896). Written at a time when distinctions between animals and humans were being vigorously debated, especially with regard to vivisection, this enchanting novel is a discourse on the continuity and discontinuity between man and beast—a border zone encapsulating significant bioethical concerns. Dr. Moreau, the novel's protagonist, is engaged in surgically constructing animal-human hybrids, combining man and dog, cat and woman, and so on. Herein beasts are given human attributes, thus scaling up or down evolution's clock. More recently, in biology, the term "chimera" has taken on another definition: an animal or plant composed of cells from distinct species. These chimeras come into being in a variety of ways. Some are naturally occurring, some are fabricated in the lab, and others are the result of organ transplantation. Popular culture also enters the fray with what else but a plushy chimera (fig. 19). Designed by Ron Spencer, this is a cute and cuddly stuffed animal that pays homage to its origins in Greek mythology by sporting the head of a lion, the body of a goat, and the tail of a serpent.

Although Wells's narrative is steeped in confabulation, the questions it posed linger today. Research scientist Evan Balaban's unique experiments with transplanted brain cells intensify debates concerning species integration and the transference of complex behaviors between differing species. In experiments akin to the fictive Moreau's, Balaban physically transplanted neural tissue from Japanese quail embryos into the brains of two-day-old Plymouth Rock chickens. In a startling result, these chimeric chickens emitted vocal sounds particular to quail mutterings. In addition, they engaged in up-and-down head bob-

bing, a gestural mannerism exclusively associated with quails.<sup>2</sup>

In Aziz + Cucher's works *Chimera #1*, *Chimera #3*, and *Chimera #8* (1999; pls. 48–50), the artists create images evocative of fetishes and idols often seen in prehistoric and Cycladic art. Coming into existence through Photoshop software, their photographs speak to a sculptural iconography. Neither gendered nor possessing locomotive appendages, the forms in the images recall primitive cellular forms not unlike paramecia and amoebas. Viewers are prompted to ask, How are these specimens kept alive? To what origin do they belong? Organically contoured and pigmented as generic Caucasian flesh, could these entities, in fact, be tissue-cultured in the biolab?<sup>3</sup>

Other questions posed by these photographs concern the viability of making organic spare parts for human use. By employing such novel technologies as bioprinting, it is currently possible to create some replacement tissues. Dr. Gabor Forgacs, a biophysicist, "used the bioprinter to deposit chicken heart cells onto a dish, [where] they started to beat synchronously."<sup>4</sup> And Dr. Anthony Atala printed bladders for young children as the first "laboratory-grown organs ever used in human trials"<sup>5</sup> (fig. 20). Even as artificial life-extension devices and tools made of flesh and blood appear in science-fiction films such as *Repo Men* (2010) and *eXistenZ* (1999), the conjoining of fantasy with reality continues on a most spectacular scientific level. And it is within this vein of thinking that Aziz + Cucher's photographs reveal a speculative optimism about the possibilities of human tissue regeneration.

In contemporary art, the work of Patricia Piccinini and Kate Clark addresses the question of the humanoid "animal," like that portrayed in Wells's *Dr. Moreau*. At once empathetic and monstrous, their sculptures confront the viewer with a variety of bioethical and philosophical questions. Both artists work in highly figurative styles, employing hyper-illusionism as a form of realism. Piccinini's lifelike sculptures depict animal-like creatures that exhibit human characteristics. In *Big Mother* (2005; pl. 56), a furless creature

stands erect as she suckles a human infant. Composed of silicone, fiberglass, human hair, and a diaper, the lifesize organism is at once human and simian, complete with an ape's leathery rump. As in Aldous Huxley's novel *Ape and Essence* (1948) or Franz Kafka's *A Report to the Academy* (1919), questions concerning climbing the evolutionary ladder abound. In all of these portrayals, apes sport a double identity, at once steeped in the animal kingdom and participants in the human world. Has Piccinini arrived at a vision of the "missing link"? Recalling nineteenth-century laws concerning miscegenation, in which the mixing of races was prohibited, Piccinini's *Big Mother* prompts moral questions in terms of animal-human hybrids and the role these in-betweens play in a techno-scientific democratic society. What social practices, labor laws, and racial politics do these sculptures point to? How human must a sentient creature be in order to be given human rights under the law?

In *Still Life with Stem Cells* (2002; pl. 55), a young girl is seated on the floor playing with her toys. Unlike off-the-shelf figurines and dolls, these toys are cellular, fleshy blobs of matter. The artist refers to these entities as stem cells. The new stars in the lexicon of cell types, stem cells are pluripotent—that is, they are raw cellular material with the capacity to morph into numerous other types of cells, such as muscle, nerve, and skin cells.

The hyperrealistic style of the sculptures recalls the exactitude of Madame Tussaud's wax museum, in which lifelike body doubles are at once arresting and uncanny. However, like Alice in Wonderland's encounters with topsy-turvy scale, the viewer is presented with microscopic stem cells in gargantuan proportion. Like the creatures in Ridley Scott's *Alien* (1979) and Steven Spielberg's *E.T.* (1982) and *A.I.* (2001), Piccinini's creations are futuristic technobots, acting out would-be dramas of a genetically altered world.

For Kate Clark, fur is a signature icon. From zebra skin to bear fur to deer hides, the taxidermied exteriors are coupled with human faces. Although the faces are stitched together in a rough-hewn manner, the creatures' eyes glare mournfully. The emotion-



Figure 19. Chimera Plush. Courtesy of Toy Vault, Inc.

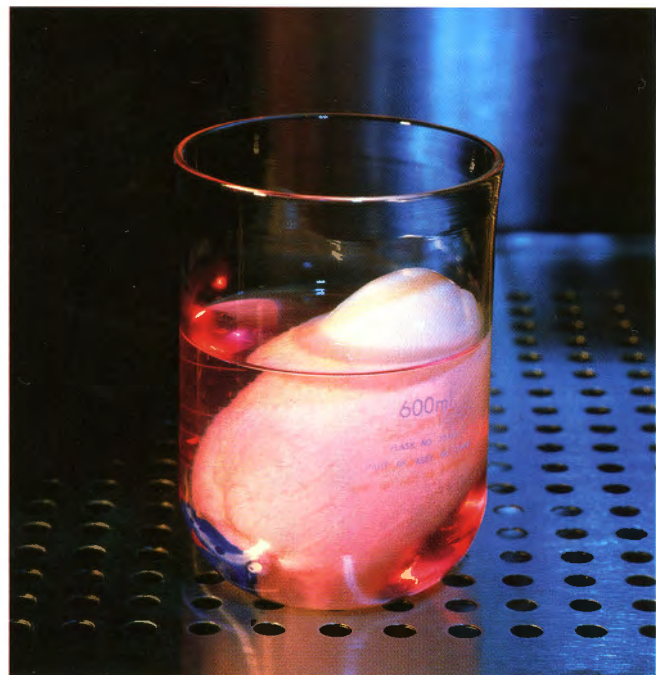


Figure 20. Artificial bladder in a beaker, grown by a team led by Dr. Atala of Harvard Medical School.



ally charged wolf couple in *Bully* (2010; pl. 18) is, as in Mary Shelley's vision, simultaneously pathetic, endearing, and threatening. As in film versions of Dr. Frankenstein's monster, external sutures in *Bully* speak to a piecing together, an after-the-fact reconstitution. Revamping the extant, or transforming existing matter through recycling, also reassigns gender roles in this work. The female Canadian wolf stands erect and in control, while her male counterpart cowers in passive pose. Poised as an interruption in instinctively hierarchical power practices within the wolf pack, the elasticity of dominant sexual roles is portrayed as a gender reversal of vulnerability. Can instinctual animal response, in fact, be recoded? As in Balaban's chicken-quail experiments, the answer is a resounding yes.

### Nineteenth-Century Reconfiguration and the Natural World

*Mary, Mary, Fairy, Fairy, how does your garden grow?  
From pure pipettes with no regrets, with green bunny  
rabbits aglow.*

*Mary, Mary, Fairy, Fairy, how does your torso grow?  
From a splice here, to add an ear, and ova in the flow.*

The nineteenth century produced such visionaries as Mary Shelley, Gregor Mendel, Ernst Haeckel, Thomas Huxley, and Charles Darwin, whose startling narratives, hypotheses, and conjectures embracing the natural world and its living properties inspired enormous reconfigurations and continue to maintain their grip on the twenty-first century's imagination. As their works entered public discourse, these thinkers spurred the notion of science as a secularizing force in society. Invention, intervention, and notions of progress have been seen as competition to religious dogma. At the same time, a modernist stance on chance, adaptation, and human agency came to the fore. How is life created? What accounts for its hereditary linkages? How are we related to other living creatures?

As noted by literary scholar George Levine,

"Darwin's theory thrust the human into nature and time, and subjected it to the same dispassionate and material investigations hitherto reserved for rocks and stars. His history of the development of species gave authoritative form to a new narrative—or set of narratives—that has permanently reshaped the Western imagination."<sup>6</sup> The notion that life itself, in all its complex mechanisms, could, in fact, be unraveled into systematic laws was reshaped once again in the twentieth century by Watson and Crick's discovery of DNA's structure. In 2000, the initial draft of the human genome was made public, triggering artistic and scientific imaginations. A host of exhibitions, conferences, texts, and films incorporating metaphors and narratives connected to DNA's discursive power infiltrated the cultural landscape. Within the scientific corporate culture, biotech companies fiercely competed for patents on gene sequences, pharmaceuticals, and even seeds. Biomatter was the new resource to be explored, colonized, and mined.

The rise of genetic engineering, PGD technologies, and tissue culturing allows for the creation of "mix and match" species—and with that, the highly controversial patenting of life forms.<sup>7</sup> What was once considered abject has now become raw material for new life, leading to such developments as the bio-banking of cord blood garnered from umbilical cords and the production of Oncomouse and other lab-born animals, cybrids, and neo-morts.<sup>8</sup> Thus the rise of biotech, as a major corporate enterprise, is speeding up the processes of evolution itself. Time is being repackaged and sold back to the highest bidder in the form of procured organs, nips and tucks, and biolicensing agreements. At a time when what it means to be human is undergoing radical bioethical consideration, the cross-species sagas demand a sustained and careful analysis.

Marvels take myriad forms: transformations, anomalies, and magical rites. In fairy tales (and cartoons) the protagonists have special powers, such as animals that can talk and reason, creatures with exaggerated or diminished bodily configurations, or

even entities that can combine attributes belonging to another class of species. Aristotle, through his investigation into the nature of animals, talks about their bodily attributes as being a constituent of their material cause.<sup>9</sup> What are the consequences of constituent material causes being interrupted or even debased? While fanciful in imaginative play or the arts, the brooding underside of mixing life forms has yet to be determined.

### Flesh as a Mix-and-Match Code

Conception taking place in test tubes, nuclear transfers in petri dishes, embryos that have been cryogenically stored like so much frozen food—these are some of the high-tech ways that reproduction has expanded far beyond the old carnal way of making babies. Wombs can be rented out through surrogacy contracts, and children can be genetically related to three parents. When virgins can give birth and corpses can be fathers, what's next? When posed with the classic children's query "Where do babies come from?" will the answer soon include the biolab? Will the bundle-carrying stork, which has figured in myriad fairy tales from Hans Christian Andersen to a more recent cameo in Dr. Seuss's *How the Grinch Stole Christmas* (1957), be finally exiled from our mythology surrounding birth? If the stork is no longer employed as a stand-in shielding children from the knowledge of sex, how should assisted reproductive technology (endearingly known as ART) be personified? Will a host of twenty-first-century fairy tales emerge to dramatize asexual reproduction? Will such avatars appear robotic or in full laboratory regalia? Will these narratives embrace the magical or religious? Recently in the United Kingdom, birth certificates have also come under review as legal documents of parentage as assisted reproduction technologies have created alternative family structures.<sup>10</sup>

Genetic manipulations, tissue engineering, and the bioprinting of organs add to the methods

in which fabricated fantasy meets hard-core reality. Many artists have explored this terrain, and the number of exhibitions, texts, and conferences continue to expand. Visual artists have pictured various social scenarios brought about by these changes in the material world. At once hyperbolic and yet "nonfiction," art encounters science in the cultural imaginary.

### Global Degrees of Difference: The Bio-mashup or Taxogenomic Crash

*Mary, Mary, Fairy, Fairy, how does your garden know?  
From super cells to mystery gels all bound up in roe.  
Mary, Mary, Fairy, Fairy, how does your water flow?  
From silver sloths to tasty broth as ointments in the know.  
Mary, Mary, Fairy, Fairy, why are you so merry?  
With pharma-pigs and hundreds of gigs, upon a pile of  
cherries.  
Mary, Mary, Fairy, Fairy, why is your garden so green?  
With fruit of the loom and all its doom, and tasty  
puddings of spleen.*

Drawing on surrealism's complex and rich image bank, Janaina Tschäpe's work is also an invocation of the fanciful chimera. Her work focuses on the fecundity of nature, in which enhancement and growth come together in an excessively aggressive sprouting. The lush garden of Edenic paradise is presented in tropical renditions, steeped in the effervescent multiplication of fructified and gnawing forms. In Tschäpe's world any combination is possible. The artist describes her relationship to the chimera: "What makes the Chimera a fearful monster isn't any of its traits in particular, but the fact that they are all combined in a single being."<sup>11</sup> She draws a parallel of this being to her working process. She sees her art production as an amalgamation of elements operating in painting, photography, film, and performance.

In Tschäpe's series *Melantropics*, verdant greens, bulbous forms, and hairy spiders converge on a pictured body, leaving only a small portion of flesh to be



observed. In this oceanic abyss of surrealistic notation, one is reminded of nature's repetitious yet unique strategies. Seedlike, podlike constructed sculptures establish the basis of her tableaux, and in this world inhabitants are out of scale. Such fabrications of the mind move us into the terrain of the unconscious where every possibility can exist simultaneously. Overtly and voraciously feminine, her objects also possess delicacy, making them less frightening. When Alice was in Wonderland, she too experienced the body phenomenon of being out of scale. *Melanotropics*, produced during a residency at the Missouri Botanical Gardens in St. Louis in 2005–2006 (pls. 60–61), combines fabrics, vegetal forms, and bulbous balloons to further augment nature's ferocious fecundity.

Tschäpe, although born in Germany, has spent much time in Rio de Janeiro. As the offspring of a German father and South American mother, she was exposed to a rich botanical and cultural environment, and its impact is traced out in her work. Darwin, in his 1832 voyage on the *Beagle*, commented on the landscape of Rio and the tropical rainforest: "It was impossible to wish for any thing more delightful than thus to spend some weeks in so magnificent a country. In England any person fond of natural history enjoys in his walks a great advantage, by always having something to attract his attention; but in these fertile climates, teeming with life, the attractions are so numerous, that he is scarcely able to walk at all."<sup>12</sup>

In all forests, enchantment and danger are entwined and ever present. From poisonous plants and snakes to flamboyant flowers, the rainforest in particular is a transformative place of wonder and biodiversity. Its impact extends far beyond its own boundaries, producing 40 percent of Earth's oxygen, a breath of life for all sentient creatures. The point brought home by the ethereality of Tschäpe's figures is that the biodiversity of the tropical rainforest, especially in Brazil's Amazon Basin, is under assault from deforestation and pollution. Perhaps one day we will ask,

*Mary, Mary, Fairy, Fairy,  
where have all the forests gone?*

*One by one and ton by ton  
The creatures are a-dying.  
We sit and stare as they lay bare  
With greed and need, and all to feed.  
Why are we not crying?*

Saya Woolfalk's work as well hearkens toward a world of fantasy in which evolution is out of sync with Darwinian principles. As an artist of mixed descent—African American, Caucasian, and Japanese—she too has a culturally rich vocabulary of resources to draw from. Her fantastic creatures, part plant, part animal, live in No Place, an ironic twist on Thomas More's Utopia (pls. 70–71). Woolfalk writes that "No Placeans are not particular plants," and that she "would be happy to see them evolve into other kinds of creatures." Her No Placeans represent an apex of mutability, a transformative principle in systems of change and growth. In her fictional world, the No Placeans "can change color and gender, have kinship rituals and dissolve back in the landscape when they die."<sup>13</sup>

Resonating with popular culture and urban debris, the biological world becomes a conceptual matrix with underlying concepts such as life, death, community, gender, and politics. Woolfalk's fanciful plant-human hybrids speak to a world that is mutable and magical. The discrete unity we associate with life forms is brought into a colliding world of ultimate morphing, a carousel of would-be identities and amorphous borders. Spinning in a world of atemporality, where past and present intersect into one, Woolfalk's mantra is one of metamorphosis.

But, as nature would have it, we are reminded of Darwin's tangled bank at the conclusion of *The Origin of Species*: "Whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being evolved."<sup>14</sup> Ironically, Tschäpe's and Woolfalk's visions of interspecies mutations are not beyond the capacity of nature to achieve, with or without the assistance of genetic technology. This is shown in the example of the green sea slug, *Elysia chlorotica*, which has the uncanny ability

to photosynthetically produce food. Employing genes stolen from algae, this creature is a solar-powered chlorophyll-manufacturing hybrid.<sup>15</sup> As scientist John Zardus has noted, “This could be a fusion of a plant and an animal—that’s just cool.”<sup>16</sup>

Motohiko Odani’s video *Rompers* (2003; pl. 68) examines a lush world of elaborate fauna, where an animated existence veils a more foreboding warning. In his camouflaged paradise, aspects of his characters do not conform to external reality. A young woman with pale chartreuse eyes stares out at the viewer as if in a trance. Her enchanting girlish pose takes a more grotesque turn when she reveals her chameleon tongue. Against a landscape of emerald-green water, oozing amber sap, and frolicking frogs with human ears on their backs, the heroine blissfully chants *oo-la-la-le, oo-la-la-le*, over and over again. In such an Edenic setting, nature’s secrets, carefully guarded, become the material out of which mutants are made.

Odani’s hybridized frogs also make reference to Dr. Joseph Vacanti’s famous, yet failed, experiment in which the surgeon-scientist attached the substrate of a human ear onto the back of a mouse (fig. 21). The image of the mouse has become an icon, and has appeared in various forms ranging from apparel (such as T-shirts and bags) to Alexis Rockman’s painting *The Farm* (2000) to an episode of the popular TV series *CSI*.<sup>17</sup>

## Sexual Encounters and Creature Discomfort

In Charlie White’s series of photographs titled *Understanding Joshua* (2001), the artist creates a male persona infected by hyper-anxiety. As a displaced stand-in for social awkwardness, Joshua is thrust into settings which exasperate his already fragile ego. In *Cocktail Party* (pl. 58), the bizarrely proportioned Joshua—who could be a visitor from another planet or the result of a laboratory experiment gone awry—is attending the event buck naked. Surrounded by beautiful people, colorfully clad, his pathetic appearance



Figure 21. Vacanti mouse. Joseph P. Vacanti, M.D., Massachusetts General Hospital, 2011.

and distraught facial expression reflect his feeling of being a perpetual outsider, one who, like many popular culture misfits, yearns to be loved.

As genetic theories, neurobiological data, and cognitive psychology set the standards for the new “normal,” how does one express infantile repression and its transgression? How do our animal natures reveal us? The psychology of the social, the outcast, the other, the pathological body, reminds us of the primitive within us. Just as it does in White’s tableaux, the cruelty expressed in many fairy tales elucidates just how much fear we harbor and what underlying psychological distress is beyond our reach and grasp. Should the pathological body be enhanced? Should disability be eliminated? What is the new normal? What are adequate indicators for a psycho-pharmacological fix? What is the Darwinian imperative for cruelty, misery, and dystopia?

## Darwinian Imperatives

Charles Kingsley, a nineteenth-century Anglican theologian and friend of Darwin’s, believed that “moral lessons of nature” could be taught through his delight-



ful fairy tale “The Water Babies.” In this parable, which was read aloud to children in Victorian England, a young chimney sweep, Tom, appears filthy and uncouth, a clear indication of his lowly social status. In an effort to escape his master and others running after him, he falls into a stream, where he descends into a deep sleep. Here he meets up with fairies, who transform him into a water baby. In this state he acquires a set of gills. As he learns through reason and judgment to accomplish the tasks before him, he continues to change. Each time he performs his cerebral tasks, he moves up the phylogenetic order, from fish to amphibian to mammal.

In an effort to reconcile Darwin’s theory of evolution with Christian theology, Kingsley sets up a dialogue between Tom and one of the chief fairies, Mother Carey:

“I hear you are very busy.”

“I am never more busy than I am now,” she said without stirring a finger.

“I heard ma’am, that you were always making new beasts out of old.”

“So people fancy. But I am not going to trouble myself to make things, my little dear. I sit here and make them make themselves.”<sup>18</sup>

Ironically, Mother Carey’s words not only resonate with Darwin’s tangled bank of endless forms, but also presage current scientific experiments, particularly with glowing green monkeys. As Maggie Fox of Reuters reported in 2009, “Japanese researchers have genetically engineered monkeys whose hair roots, skin and blood glow green under a special light, and who have passed on their traits to their offspring, the first time this has been achieved in a primate.” What is important in this experiment is that “green-glowing monkeys have green-glowing babies.”<sup>19</sup> As Mother Carey states, “I sit here and make them make themselves.”

My own work, *Water Babies* (2004–2006; pl. 51), takes its title from Kingsley’s parable. In this photographic set viewers are confronted with fetuses

submerged in preservation liquids, just as Tom was submerged in the waters of the stream, from which he followed an evolutionary trajectory toward full humanhood. These photographs, however, are not of imagined creatures, but are actually taken in museums and laboratories. They appear to occupy zones of ambiguity, with bodies and their parts floating anonymously as mementos marking historical time. Provoking questions concerning the dualities of death and life, these raw tissues reveal emotive states of consciousness. What questions are provoked by once-living matter enclosed in a glass veil? To go behind a veil is to transgress a hidden boundary. At the same time the veil becomes a mirror for our concealed selves, as we peek behind the curtain of inscrutable worlds. Although real, these preserved specimens partake of the fictive, engaging their formal presence as cultural and historical artifacts. Occupying a world of unimaginable repose, the fetus is a primal marvel. A mystery in itself, it has come to represent life as a continuous cycle, moving from birth to death, or like Tom, moving from being a primitive gilled organism to one that is fully sentient and aware.

## Conclusion

In this essay, I have chosen to compare works of art in the exhibition to advances in biotechnological sciences. An analysis of the artwork from a formal or historical point of view is a topic for another essay. From a socially critical point of view, how do we assess the images portrayed within this exhibition? Is it adequate to invoke the chimera, the animal, or the natural world to render such image content valid? What responsibility does the human animal possess with regard to other sentient creatures? The chimera is a complex entity that is more than an amalgam of diverse parts or an adhesion through substitution. It is a thorough reworking of the ontological status of the finite. It is a collapse of the whole in favor of its parts.

The great American pragmatist John Dewey's seminal text *Art as Experience* (1934) conceives of experiencing art as a civilizing cultural process akin to developing moral judgment. Going beyond its material significance, art becomes a communicating vehicle in which objects (and images) talk back. Much of Dewey's moral philosophy was necessitated by the shifts in living styles generated by the accelerating demands of new urban life. Yet developing moral judgments in a technoscientific society remains another task.

In this disjunctive, transgressive time, a dismantling of values continues to summon the adaptation of alternative ones. What is marvelous in visual art may be treacherous in science, and vice versa. While the chimera may be humorous or endearing or scary in art, what may it be in science? Advances in biomedicine surely rely on its manufacture as living models to combat disease. In *The Future of Human Nature*, Jürgen Habermas calls for a "species ethics": "The advance of the biological sciences and development of biotechnologies at the threshold of the new century do not just expand familiar possibilities of action, they enable a new type of intervention. What hitherto was 'given' as organic nature, and could at most be bred, now shifts to the realm of artifacts and their production."<sup>20</sup>

*Mary, Mary, Fairies, Fairies, I bid you sweet farewell.  
Until that time, there is no wine,  
I'll stay the course, of course.  
With wondrous wimps and naked chimps,  
we'll meet again to tell.  
Mary, Mary, Fairy, Fairy, why are your maggots  
so haggard?  
Return to earth another birth, all clean and neatly  
lathered.*

## Notes

1. For further reading, see David K. C. Cooper and Robert P. Lanza, *Xeno: The Promise of Transplanting Animal Organs into Humans* (New York: Oxford University Press, 2000).
2. Evan Balaban, "Brain Switching: Studying Evolutionary

- Behavioral Changes in the Context of Individual Brain Development," *International Journal of Developmental Biology* 49 (2005): 117–24.
3. Both artists and scientists are employing live cells to create tissues. Artists are using tissue culturing as a medium in sculpture, and scientists are exploring possibilities in regenerative medicine. In such procedures scientists have the ability to use a patient's own healthy cells as replacement parts for diseased tissues. The process of reconfiguring inkjet printers to accommodate living cells is called bioprinting. See, for example, the SymbioticA lab ([www.symbiotica.uwa.edu.au/](http://www.symbiotica.uwa.edu.au/)), under the artistic direction of Oron Catts, and Mitchell Joachim's "In Vitro Meat Habitat" ([www.archinode.com/arch.html](http://www.archinode.com/arch.html)).
  4. Michael Anissimov, "What Is Bioprinting?," *WiseGeek*, last modified February 16, 2001, [www.wisegeek.com/what-is-bioprinting.htm](http://www.wisegeek.com/what-is-bioprinting.htm).
  5. Christine Fall, "Calling All Repo Men: 3-D Bio-printing Creates a Market for Artificial Organs," *AMC Film Critic*, February 3, 2010, [www.filmcritic.com/features/2010/02/repo-men-artificial-organs/](http://www.filmcritic.com/features/2010/02/repo-men-artificial-organs/).
  6. George Levine, *Darwin and the Novelists: Patterns of Science in Victorian Fiction* (Chicago: University of Chicago Press, 1988), 1.
  7. PGD is the acronym for preimplantation genetic diagnosis employed in embryo selection.
  8. Oncomouse was developed at Harvard College by Dr. Philip Leder and Dr. Timothy A. Stewart and received a patent in 1988. Patents are usually reserved for nonliving entities, but are now also issued for transgenic botanicals and animals. Cybrids are the creation of human-animal hybrid embryos to be used for research purposes. See Olivia Johnson, "Enter, the Cybrids," *New York Times*, May 20, 2008. Neo-morts are humans who are brain dead but whose bodies continue to exhibit living features if hooked up to a machine. In essence a neo-mort is a "live" cadaver.
  9. See Aristotle, *The History of Animals*, trans. D'Arcy Wentworth Thompson (published electronically by eBooks@Adelaide, 2007).
  10. See Louisa Ghevaert, "Birth Certificates: A New Era," *BioNews* 556 (April 30, 2010), [www.bionews.org.uk](http://www.bionews.org.uk).
  11. Quoted in a press release for *Janaina Tschäpe: Chimera*, Irish Museum of Modern Art, 2008.
  12. Charles Darwin, *Narrative of the Surveying Voyages of His Majesty's Ships Adventure and Beagle between the years 1826 and 1836*, vol. 3 (London: Henry Colburn, 1839; repr., New York: AMS Press, 1966), 29.
  13. E-mail correspondence with Saya Woolfalk, August 2, 2010.
  14. Charles Darwin, *The Origin of Species* (1859), chap. 14, [www.literature.org/authors/darwin-charles/the-origin-of-species/chapter-14.html](http://www.literature.org/authors/darwin-charles/the-origin-of-species/chapter-14.html).



15. Catherine Brahic, "Solar-Powered Sea-Slug Harnesses Stolen Plant Genes," *New Scientist*, November 24, 2008.
  16. Quoted in Susan Milius, "Green Sea Slug Is Part Animal, Part Plant," *Science News*, January 11, 2011.
  17. See, for example, the T-shirt design by Amorphia Apparel at [amorphia-apparel.com/design/earmouse](http://amorphia-apparel.com/design/earmouse).
  18. Charles Kingsley, *Water Babies: A Fairy Tale for a Land Baby* (London: Macmillan, 1917). For further analysis, see John Beatty and Piers J. Hale, "Water Babies: An Evolutionary Parable," *Endeavor* 32, no. 4 (November 7, 2008): 145.
  19. Maggie Fox, "Green-Glowing Monkeys Have Green-Glowing Babies," *Reuters*, May 27, 2009.
  20. Jürgen Habermas, *The Future of Human Nature* (Cambridge: Polity Press, 2003), 38–39.
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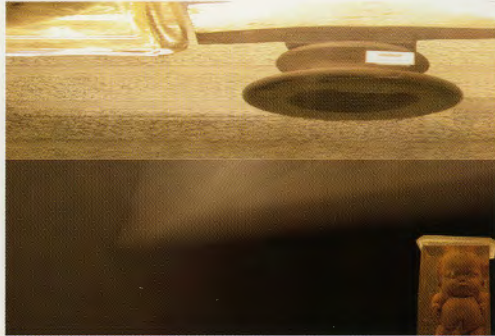


Plate 51  
Suzanne Anker  
*Water Babies*, 2004–2006



## CHECKLIST OF THE EXHIBITION

### David Altmejd

*Untitled (Man's Hard Idea Comes Out of His Head)*, 2007

Foam, resin, feathers, cloth, paint, and glass eyes, 27 ½ x 20 ½ x 19 in.

Collection of Louise Déry  
Plate 33

### David Altmejd

*Werewolf 1 (Loup-garou 1)*, 2000

78 ¾ x 91 ¾ x 96 in.

Wood, paint, synthetic hair, Plexiglas, lighting system, plaster, polymer clay, acetate, Mylar, jewelry, and glitter

Collection of the Gallery of the University of Quebec, Montreal. Purchased with the support of the York Wilson Endowment Award, administered by the Canada Council for the Arts, and with a gift of the artist  
Plate 32

### Suzanne Anker

*Water Babies*, 2004–2006

Twelve digital prints on watercolor paper, 24 x 36 in. each

Collection of the artist, New York  
Plate 51

### Aziz + Cucher

*Chimera #1*, 1999

C-print on aluminum, 60 x 30 in.

Courtesy of the artists  
Plate 48

### Aziz + Cucher

*Chimera #3*, 1999

C-print on aluminum, 60 x 30 in.

Courtesy of the artists  
Plate 49

### Aziz + Cucher

*Chimera #8*, 1999

C-print on aluminum, 60 x 30 in.

Courtesy of the artists  
Plate 50

### Ashley Bickerton

*Snake-Head Painting*, 2008

Acrylic, oil, digital print, mother of pearl, and coconut on wood, 36 ⅝ x 30 ¾ x 2 in.

Private collection, courtesy of Lehmann Maupin Gallery, New York  
Plate 47

### Meghan Boody

*Henry's Wives: In a Garden So Greene*, 1998

Cibachrome, 53 x 56 in.

Edition of 12

Private collection, New York  
Plate 22

### Meghan Boody

*Henry's Wives: Jane Seymour:*

*"Bound to Obey and Serve,"* 1997

Cibachrome, 32 x 21 in.

Edition of 3

Batterman-Greenberg Collection  
Plate 20

### Meghan Boody

*Henry's Wives: Katherlyne Howard:*

*"No Other Wish but His,"* 1997

Cibachrome, 32 x 21 in.

Edition of 3

Collection of Jennifer Mallin  
Plate 19

### Meghan Boody

*Henry's Wives: Katherine Parr:*

*"To Be Useful in All I Do,"* 1997

Cibachrome, 32 x 21 in.

Edition of 3

Collection of Susan and Edward Bralower  
Plate 21

### Meghan Boody

*Psyche and Smut: The Assessment of Smut*, 2000

Lightjet print, 56 ½ x 41 ½ in.

Courtesy Rick Wester Fine Art and Salomon Contemporary, New York

Plate 26

### Meghan Boody

*Psyche and Smut: Psyche Enters*, 2000

Lightjet print, 56 ½ x 41 ½ in.

Courtesy Rick Wester Fine Art and Salomon Contemporary, New York

Plate 23



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