TRANSGENIC BIOART, ANIMALS, AND THE LAW

Taimie L. Bryant, Professor of Law
University of California, Los Angeles, School of Law
Abstract

This chapter considers aspects of the complex relationship between law and transgenic bioart, which is the genetic alteration of living beings as a type of performance art. Transgenic bioart is ambiguously situated in relation to bioengineering, and that ambiguity results in comparable legal ambiguity. As a type of “scientific” endeavor, bioengineering receives preferential treatment under the law, but art does not consistently receive similarly favorable treatment. Thus, deciding whether a particular transgenic bioart project is “art” or “science” becomes a necessary, but surprisingly difficult, interpretive exercise. That difficulty arises not only because of the nature of transgenic bioart but also because of variance in the type of collaborative relationships that exist between bioartists and scientists. Even if transgenic bioart in general or some specific projects would not be considered “scientific,” it is difficult to predict whether or how specific laws would be applied. However, one thing is clear: the law has not thus far impeded any bioartistic endeavor even when such endeavors result in the suffering of sentient animals. To date, bioartists have faced only one legal challenge, which concerned the acquisition of biological materials and not the nature of the project itself. Laws could be enacted or interpreted with the result of curtailing bioartistic manipulation of nature, despite First Amendment protections of expressive speech. However, there would have to be sufficient social and political will to do so. That will to protect nature, including animals and the environment, cannot originate in law because law, first and foremost, protects those interested in exploiting nature. Instead, the will to protect nature must spring from extra-legal sources. Legal reform can only follow and complement societal change in the direction of respecting and protecting nature.1

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INTRODUCTION

Once understood as whole biological systems, plant and animal species are increasingly understood to be inventories of transferable genes available to serve human purposes. As chemical ecologist Thomas Eisner has phrased it,

> [a] species is not merely a hard-bound volume of the library of nature. It is also a loose-leaf book, whose individual pages, the genes, might be available for transfer and modification of other species (as cited in Midgley, 2000, p. 6).

Eisner suggests that species can be at the same time hard-bound volumes and loose-leaf books. That may be true of humans, but, as far as nonhuman species are concerned, we seem well on the way to a conception of species only as loose-leaf books, thereby enhancing pre-existing distinctions drawn between human and nonhuman species. We cause pigs, monkeys, fish, mice, rabbits, even the testicles of mosquitoes, to glow fluorescent green—with little more justification than that we have the technological capacity to do so and the possibility of some future utility to humans.

Among those who engage in bioengineering are “transgenic artists,” who genetically alter living beings, such as bacteria, plants, and animals, as a type of performance-based art. It is because such artists perform actual genetic alteration of living beings that the genre is particularly controversial and feels so “dangerous” or “subversive” (Randy Kennedy, 2005, para 7). Critics distinguish “proper” and “improper” purposes for the genetic manipulation of life, but, to transgenic bioartists, art is as valid a reason as any to manipulate the genetic basis of life. Indeed, to some bioartists whose goal is demystification of science, anyone should be able to engage in the genetic manipulation of living beings.

Because of the close relationship between biotechnology as a scientific endeavor and transgenic bioart, there is a complex relationship between transgenic bioart and the law. The law generally favors biotechnological development, but there are legal restrictions regarding such matters as the use of human cells, the means of access to nonhuman life forms for conducting bioengineering, and the circumstances of release of altered life forms into the environment. Those restraints exist because of concerns about risks to humans—risks of health, safety, and self-definition. Thus far, concerns about risks to nature in general or animals in particular have not been equally expressed in the law.
The presence of legal restrictions to protect humans and the apparent absence of legal restrictions to protect nonhuman species necessarily impacts transgenic bioartistic expression in various ways. Transgenic bioartists claim to challenge the idea of species boundaries, but, because there are legal limits on creating transgenic human beings, such bioartists end up reinforcing values that underlie legal rules that limit their transgenic art to the genetic manipulation of nonhuman plant and animal species only. Transgenic bioartists cannot help but deliver the message of acceptability of traditional views of a sharp distinction between human and nonhuman species and human subordination of nonhuman species; if they did not accept those views, they could not ethically engage in the act of genetically manipulating life under legal restraints that restrict them to use of nonhuman species only. As it is, transgenic bioart and the law act in concert to maintain a traditional conception of the organization of life even as transgenic bioartists proclaim that their work does otherwise.

Similarly, transgenic bioartists may attempt to critique the idea that only scientists can or should engage in transgenic alteration of life, to educate the public about risks associated with bioengineered organisms, to call for public scrutiny of scientific research, or to illustrate the need for more regulation of bioengineering. However, transgenic bioartists’ collaboration with scientists in order to lawfully procure life forms, supplies, facilities, or performance of some techniques reinforces the importance of scientists as gatekeepers of the technology. Further, to the extent that the law privileges scientists’ genetic manipulation of life but not artists’ genetic manipulation of life, such collaboration provides legal cover to transgenic bioartists even as they proclaim that “anyone” can manipulate life forms.

As compared to transgenic bioart, which involves the actual genetic alteration of living matter, representational art can be more conceptually radical because there are relatively fewer legal and ethical limitations on the ideas one can express through means that do not themselves involve genetic alteration of life forms. One can legally include humans in representations of genetic alteration of life; one cannot legally include humans in performances of genetic alteration of life. Moreover, representational art does not require collaboration with scientists whose status or activities can be criticized only obliquely through transgenic bioart due to transgenic bioartists’ dependence on scientists. It would seem, therefore, that transgenic bioartists’ work contradicts and undermines their stated aims. At the very least, transgenic bioartists sacrifice expression of many of the ideas they claim they want to express—ideas that can be expressed only through means that do not involve the actual genetic alteration of life.
Some transgenic bioartists may not particularly care that their art entrenches concepts of human dominance of nature. Those who do accept the criticism as valid may, nonetheless, emphasize what they contend are positive features of transgenic bioart as a distinctive form of performance art. They may also over-estimate their ability as artists to protect the lives they create or alter. For instance, Eduardo Kac (2003) has represented his endeavor to create Alba, a rabbit genetically modified by the insertion of jellyfish genes, as performance art “comprise[d of] the creation of a green fluorescent rabbit . . . , the public dialogue generated by the project, and the integration of the rabbit into a social environment” (p. 97). By Kac’s own definition of his project, it failed. Alba was not integrated into a social environment, at least not the type of social environment Kac found acceptable. Kac waged a very public campaign to secure her release to his care, but Alba lived out her life in a research laboratory under the control of research scientists. Kac and other transgenic bioartists seem unpersuaded by concerns about harms that could result from release of genetically altered organisms into the environment. As we shall see, the law operates ambiguously in that regard, although public health and safety rationales for restricting ownership and sale of genetically altered life forms abound.

What of the public’s interest in the health, safety, and well-being of Alba herself? Even if Alba was not subjected to other experiments, it is unlikely that she was treated with the “commitment to respect, nurture and love” that Kac (2003, p. 97) identified as a requirement of producing transgenic art. Moreover, having stated categorically that all life generated by transgenic art be created “above all, with a commitment to respect, nurture, and love the life created,” (2003, p. 97) Kac developed an installation, entitled “The Eighth Day,” in which sentient transgenic creatures would live in a four foot Plexiglas dome, for purposes of “making visible what it would be like if these creatures were, in fact, co-exist in the world at large” (2001, para 1). Kac described the installation as follows:

As a self-contained ecological system it resonates with the words in the title, which add one day to the period of creation of the world as narrated in the Judeo-Christian Scriptures. All of the transgenic creatures in “The Eighth Day” were created through the cloning of a gene that codes for the production of green fluorescent protein (GFP). As a result, all creatures express the gene through bioluminescence visible
with the naked eye. The GFP creatures in The Eighth Day are GFP
plants, GFP amoeba, GFP fish, and GFP mice. . . . By enabling [hu-
man] participants to experience the environment inside the dome from
the point of view of the biobot, “The Eighth Day” creates a context in
which participants can reflect on the meaning of a transgenic ecology
from a first-person perspective. (2001, paras 2-4)

Is this installation indicative of “respect, nurturance, and love of the lives” created for
artistic purposes? Or are those values applicable only if and after the artist has satisfied
his own expressive needs? As we shall see, the law is ambiguous as to whether perform-
ance art such as “The Eighth Day” constitutes the infliction of suffering on sentient be-
ings and, if it does, whether such suffering is acceptable as “necessary” to the attainment
of valued human objectives.

LEGAL INADEQUACY, AMBIVALENCE, OR INTENTIONAL UNDER-REGULATION?: THE
COORDINATED FRAMEWORK FOR THE REGULATION OF BIOTECHNOLOGY

Just as debate about bioart ranges widely, so, too, do perspectives about the role of law
in bioengineering generally and transgenic bioart specifically. There are signs of legal
resistance to some methods and purposes of bioengineering that threaten humans’ defini-
tions of themselves, but, thus far, federal law has facilitated humans’ exploitation of
nonhuman nature through bioengineering. The Coordinated Framework for the Regula-
tion of Biotechnology (1986) was created to encourage cooperation and coordination
among federal agencies charged with regulatory oversight of processes and products that
might contain bioengineered components: the Environmental Protection Agency, the
Food and Drug Administration, and the Department of Agriculture. Under that Frame-
work, each new product derived from genetic alteration of a single organism is subjected
to a level of review that corresponds to its use as a food or a drug.

Proposed use in drugs is given more scrutiny than proposed use in food products, but, as
a general matter, if members of a genetically altered species are considered “substan-
tially equivalent” to non-genetically modified members of the species, then they and
products derived from them are legally presumed to be safe. Determinations of “substan-
tial equivalency” rest on comparison of isolated features of the modified and unmodified
species that relate to the purposes for which the modified species will be used. For example, in 2003 the United States Department of Food & Drug Administration (FDA) issued a draft risk assessment of cloned livestock recommending the presumption that “food products from healthy animal clones and their progeny that are not materially different from corresponding products from conventional animals are as safe to consume as their conventional counterparts” (p. 5). The basis of risk assessment is compositional analysis of the food products derived from animal clones as compared to food products from animals who are not clones. The assessment is so myopic that it has led an observer to conclude that, “[a]lthough [genetically modified] products are likely to have been altered to an extent that is sufficiently “novel” to qualify for patent protection for the developer, the vast majority of food products submitted for commercial marketing thus far have continued to meet the United States’ definition of substantial equivalence, thus incurring no special regulatory scrutiny” (Lawrence, 2007, p. 238). According to Lawrence (2007), the Pew Initiative on Food and Biotechnology reported poll results indicating that only 34 percent of those polled thought that genetically altered foods were safe and that Americans generally favor regulation of such foods (p. 249).

The Coordinated Framework is vulnerable to multiple specific criticisms besides being generally unsuited to perform the tasks that would be responsive to public concerns. In addition to the breadth of the definition of “substantial equivalence,” criticisms include the extent of judicial deference to agency determinations, especially since agencies may be subject to special interest group capture; the presumption of safety until a product of genetic modification is proven dangerous; and gaps in oversight, such as failure to review genetically altered life forms developed for purposes other than food and drugs (Lawrence, 2007, pp. 238-247). Yet, despite criticisms and proposed reform, American law continues to be fundamentally receptive to claims that biotechnology is beneficial to humans overall and that future benefits to humans will offset any harms that may result. Needless to say, evaluation of products from the standpoint of the extent of suffering inflicted on animals is not now and never has been considered a significant consideration.

One reason for that apparent receptivity to biotechnology may be simply the speed with which technological development has outstripped society’s capacity for appropriately reactive legal change. Another reason may be a deep-seated belief that development should not be impeded legally unless there is extremely clear evidence that there is a need to do so. Yet another may be humans’ longstanding self-granted entitlement to appropriate and exploit all things “natural.” Having invested labor in appropriation and alteration of something “natural,” humans conceptualize the result as no longer natural but as “manmade” and, therefore, subject to human ownership and further modification.
THE CASE OF DIAMOND V. CHAKRABARTY

The ideology of human prerogative to use, to own, and to exploit nature is evident in the 1980 United States Supreme Court decision of Diamond v. Chakrabarty, which concerned the patentability of bacteria genetically altered in ways that enabled the bacteria to break down crude oil. Perhaps signaling the ultimate basis for its decision, the court notes early in its opinion that the bacteria “is believed to have significant value for the treatment of oil spills” (p. 305). Chakrabarty submitted patent claims of three types: the processes employed to alter the bacteria, the material that sustained and supported the bacteria while it was floating on water, and the bacteria themselves. Although the patent examiner allowed patents for the first two types of claims, he rejected Chakrabarty’s claim of ownership in the bacteria themselves. The examiner based his rejection on grounds that micro-organisms are “products of nature” and that living beings cannot be the subjects of patents. The United States Supreme Court disagreed, stating that the “new bacterium [has] markedly different characteristics from any found in nature and one having the potential for significant utility. [The patentee’s] discovery is not nature’s handiwork, but his own; accordingly it is patentable subject matter” (p. 310).

The court rejected the argument that Congress and only Congress should decide the specific question of whether genetically altered organisms are patentable because “the judiciary ‘must proceed cautiously when . . . asked to extend patent rights into areas wholly unforeseen by Congress’” (p. 315). The court decided that validating Chakrabarty’s patent did not “extend patent rights;” in the court’s view the facts of the case fit unambiguously with the language, intent, and legislative history of the Patent Act. Quoting the Constitution, the court noted that Congress has “broad power to ‘promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries’” (p. 307).5

Arguments premised on predicted harms to nature and humans were not absent from the litigation. Indeed, the court makes explicit reference to those claims.

[The Patent Office] . . . points to grave risks that may be generated by research endeavors such as [Chakrabarty’s]. The briefs [submitted to the Court] present a gruesome parade of horribles. Scientists, among them Nobel laureates, are quoted suggesting that genetic research may pose a serious threat to the human race, or, at the very least, that the
dangers are far too substantial to permit such research to proceed apace at this time. We are told that genetic research and related technological developments may spread pollution and disease, that it may result in a loss of genetic diversity, and that its practice may tend to depreciate the value of life. These arguments are forcefully, even passionately, presented; they remind us that, at times, human ingenuity seems unable to control fully the forces it creates—that with Hamlet, it is sometimes better ‘to bear those ills we have than fly to others that we know not of.’

It is argued that this Court should weigh these potential hazards in considering whether [Chakrabarty’s] invention is patentable subject matter . . . . We disagree. The grant or denial of patents on microorganisms is not likely to put an end to genetic research or to its attendant risks. The large amount of research that has already occurred when no researcher had sure knowledge that patent protection would be available suggest that legislative or judicial fiat as to patentability will not deter the scientific mind from probing into the unknown . . . . Whether [Chakrabarty’s] claims are patentable may determine whether research efforts are accelerated by the hope of reward or slowed by want of incentives, but that is all. (pp. 316-317)
The Supreme Court’s validation of the patentability of genetically altered bacteria affirms that living beings can be the property of humans, which is unremarkable considering the fact that humans have been the legal owners of domesticated animals for as long as there have been laws to protect such claims. The court distinguished “Chakrabarty’s handiwork” from “manifestations of nature,” which are not patentable. But, the court also noted that even if they are not patentable, “manifestations of nature” are “freely” exploitable by “all men.”

Thus, a new mineral discovered in the earth or a new plant found in the wild is not patentable subject matter. . . . Such discoveries are “manifestations of . . . nature, free to all men and reserved to none.”

The Patent Office acted on that premise when it readily issued patents for the processes by which Chakrabarty altered the bacteria; there was no controversy about Chakrabarty’s claims that he could patent the processes by which he altered bacteria. Ownership of those processes insured commercial advantage associated with the exploitation of “manifestations of nature.” The only question before the court was whether the genetically altered bacteria themselves could be patented. There are clear advantages to owning a patent in the beings that result from genetic manipulation, but ownership of patents related to the process of exploitation would drive exploitation of living matter, even without ownership of patents in the beings that result. Moreover, the particular physical beings that result from genetic modification research would be owned, and their subsequent exploitation could be controlled by contract. Considering existing legal means of commercially exploiting the processes by which life is genetically altered, it was only a relatively small step to validate the patentability of genetically altered beings themselves.

**CONCEPTS OF NATURE AND AMBIVALENT LEGAL RESPONSES TO BIOTECHNOLOGY**

Part and parcel of this point of view is the idea that nature and “manifestations of nature” have no identifiable or assertable interests of their own. As a conceptual matter, nature and its constituent parts could have legally cognizable interests separable from those of humans. Indeed, various legal approaches to recognizing the interests of nature have been proposed. For instance, lawyer Cormac Cullinan (2002) argues that all laws should be structured in light of our interdependency with nature, rather than relying exclusively
on piecemeal legal recognition of the interests of one or more aspects of nature. Cullinan’s approach would require legal recognition that entities other than humans have legal interests, but his focus is on reorganizing society rather than simply privileging or restraining the conduct of any particular species. Legal scholar Christopher Stone (1996) similarly supports laws that would curtail human privilege in order to protect various entities in nature, such as turtles, trees, and rivers. He asserts that it is not necessary to go so far as to establish legal rights for such entities so long as their “legally considerable” interests are recognized (Stone, 1996, p. 51).

Both of these proposals could be understood to operate from an instrumental, positive law perspective that legal entitlements can be established for any entity if there is a socially recognized benefit in doing so; establishing such entitlements need not turn first and foremost on characteristics of the potential holder of the entitlements (Posner, 2004). From that standpoint, the Cullinan and Stone proposals are not particularly radical. Moreover, depending on the definition of “rights,” it is possible to argue, as has legal scholar Cass Sunstein (2003), that animal rights is not a controversial idea and that some animals already have “rights” to the extent that laws exist to protect them from suffering. The reason that Cullinan’s and Stone’s approaches can seem radical is not that they speak of “rights” or “legal interests” for entities that exist in and of nature; it is that they advocate reformulating the whole of our relationship with the natural world by incorporating in law an ethic of environmental protection and reduction in human privilege.

Instead of moving in a direction through which humans resituate ourselves in relation to the rest of nature, humans use biotechnology to further situate nature in relation to human preferences. When human conduct so poisons the earth that we must resituate ourselves in order to save ourselves, the law might serve as mechanism through which we do so. In the meantime, legal responses to bioengineering are likely to be ambivalent and piecemeal. Such is evident in the fact that the primary regulatory mechanism available in the United States is the Coordinated Framework, which only cobbles together pre-existing federal agencies and laws without overhauling the legal means by which products are evaluated.

A central problem with the Coordinated Framework is its focus on the intended use of the bioengineered products and the gaps in oversight that result. This problem is illustrated by the case of GloFish, fluorescent zebra fish that glow red or green due to the insertion of sea anemone genes or jellyfish genes, respectively (The Associated Press, 2003, para 4). GloFish were originally developed with the expectation that they could be used to detect water pollution (Lamb, 2004, Ban on GloFish, para 5). When that turned out not to be feasible, GloFish were produced for the amusement of people who keep
fish in aquariums. As such, they were given only cursory review by the United States Food and Drug Administration (FDA), which focuses on evaluation of the safety of food products and drugs. GloFish were deemed “substantially equivalent” to unmodified zebra fish, and there was no clear evidence at the time they were evaluated that they would cause harm if they ended up in the wild (Lawrence, 2007, p. 257). Accordingly, the FDA declined to regulate the sale of GloFish (U.S. Department of Drug & Administration [FDA], 2003). Although the FDA’s decision was challenged as an abuse of authority, the court in International Center for Technology Assessment v. Thompson (2006) decided that it was within the FDA’s discretion to reach the decision it made in the case of GloFish. Thus, with minimal review, GloFish became the first transgenic creature available for commercial marketing in the United States (Lawrence, 2007, p. 255).

Because GloFish were not going to be marketed for food or drug purposes, the federal agency charged with evaluation of GloFish, the FDA, left legal regulation up to the states. While other states debated whether to allow the sale of GloFish, by a vote of three to one, California’s Fish and Game Commission decided not to exempt GloFish from the state’s ban on selling genetically engineered fish (The Associated Press, 2003, para 3). The decision is not explained by hostility to the scientific method by which the fish were genetically altered; the Commission had already approved the state’s license to conduct research on genetically modified fish. Rather, for at least two of the Commissioners the problem was the purpose for which the GloFish would be sold. Commissioner Sam Schumchat was quoted as saying, “For me it’s a question of values, it’s not a question of science. I think selling genetically modified fish as pets is wrong. . . . To me, this seems like an abuse of the power we have over life, and I’m not prepared to go there today” (The Associated Press, 2003, paras 2, 15). Similarly, Commissioner Jim Kellogg was quoted as saying that the question before the Commission was one “of values, not science” (Bacher, 2003, para 21). In other words, the FDA did not prohibit the sale of GloFish because they would be pets, and California did prohibit the sale of GloFish because they would be pets. That a majority of the Commissioners voted against the sale of GloFish on grounds of values indicates that people can decide in favor of limiting human prerogative to genetically alter living beings. It is not yet a completely foregone conclusion that nature will continue to be genetically altered at the whim of those with the technological ability to do so, including transgenic bioartists.

THE PROBLEM OF LEGAL CATEGORIES

This discussion of the effect of different legal rules affecting the availability of fluorescent fish illustrates the importance of legal categories for understanding how the law currently functions and for predicting future developments. Categorical uncertainty as to
specific “facts” results in uncertainty about legal rule application. Because it is difficult to categorize “transgenic bioart,” the law replicates the complicated social discourse of transgenic bioart.

A feature of the story of Alba that is particularly useful for considering the problem of legal categorization is the lack of clarity about whether Alba was purposely “made to order” for Kac or whether Kac simply made use of the existence of a particular rabbit who was produced as part of an existing scientific project to produce fluorescing rabbits (Lynch, 2008, p. 193). Did Kac generate an aesthetic discourse about an “artifact” of scientific research or did Kac generate both the artifact and the aesthetic discourse? Stated differently, is Alba a creation of science or bioart? In an article about bioart and bioterrorism, George J. Annas raises this issue from the perspective of ambiguity in all bioart and biotechnology.

Like defensive and offensive bioweapons research, bioart and biotechnology may be impossible to distinguish by anything other than the researcher’s or creator’s intent. Thus, Alba, the bunny with the inserted jellyfish gene, is considered to be and is accepted as a creation of bioart, at least in the contemporary art community; whereas ANDi, the monkey with the inserted jellyfish gene, is considered to be a creation of science, at least in the biotechnology community. (Annas, 2006, p. 2718)

To Annas, a professor of health law, bioethics, and human rights, the lack of clear distinction is problematic. He criticizes bioart for provoking fears about biotechnology and bioterrorism such that the public is easily confused, potentially leading to over-reaction to biosafety rule violations. To Lisa Lynch, a professor of media studies, such ambiguity is relatively unimportant, at least as to the matter of particular artists’ purposes.

Kac’s interest was to bring the product of genetic research closer to the public, but the product he delivered was stripped of its production con-
text; this is why, in the case of “GFP Bunny,” the media could imagine Kac as the actual creator of Alba and why scientists could accuse him of being a sacrilegious tinkerer. In fact, Kac was not tinkering at all; he was not practicing amateur science, but amateur semiotics, taking a pre-existing object and trying to get it to signify differently. (Lynch, 2006, p. 198)

From a legal perspective, distinguishing artistic from scientific endeavors is important because intent of the creator, where the creation took place, and who was involved in the creation may all be relevant factors in whether particular laws apply. These factors cannot always be easily sorted. Not only are transgenic bioartists using scientific techniques, many transgenic bioartists have collaborative relationships with scientists, even if only for limited purposes. Certainly if a bioartist does not do the genetic alteration himself but instead relies on scientists to produce the genetically altered life form to the bioartists’ specification, there will a significant collaborative component. That collaborative aspect means that some transgenic bioart projects could be framed legally as scientific endeavors even if the bioartist maintains professional distance from the scientists with whom the bioartist collaborates. Categorical uncertainty about whether transgenic bioart is art or science complicates application of the few laws that could be deployed in an effort to protect sentient animals from harm. It affects the operation of state anticruelty laws as well as the federal Animal Welfare Act.

**STATE ANTICRUELTY LAWS**

Consider the application of American state anticruelty laws. American state anticruelty laws prohibit only intentional or grossly negligent infliction of suffering on “animals” as defined by the statute. The use of words such as “torment” and “mutilation” indicate that the suffering inflicted on an animal must be substantial and severe. However, even as to severe, intentionally inflicted suffering, anticruelty statutes balance animals’ interest in not suffering with humans’ interests in such activities as consumption of animal-based products, hunting, pest control, and scientific research. Accordingly, only severe suffering that is inflicted “unnecessarily” on a statutorily protected animal is prohibited by anticruelty statutes. Because the law—especially criminal laws—operate only on specific sets of facts, as to each instance of transgenic bioartistic performance the relevant
questions would be (1) whether the animal harmed is covered by the statute, (2) whether the suffering inflicted on the animal is of the type covered by the statute; and, (3) if so, whether it was inflicted for no other reason than to cause suffering or as incident to the pursuit of valued human goals. It is difficult to predict outcomes because the application of law to particular facts is just as susceptible to interpretation as any other interpretive activity. Prosecutors, defense attorneys, jurors, and judges often interpret the same fact-law situation quite differently.

STATE ANTICRUELTY LAWS: WHAT IS AN “ANIMAL”?

The difficulty associated with the first question—whether transgenic animals are “animals” for purposes of state anticruelty statutes—pre-existed the development of bioengineering. The broadest state statutory definitions of “animal” include “any dumb creature,” “any sentient being,” and “vertebrate animal,” but it is not only the characteristics of the animal him- or herself that matter. Context also matters. A rabbit is certainly a “dumb creature,” a “sentient being,” and a “vertebrate animal,” but if she is a garden “pest,” a “laboratory animal” in a “bona fide” research experiment, or raised for human or animal food consumption, she is not covered by anticruelty statutes at all regardless of the extent of suffering that may be inflicted on her. Very few animals are actually protected by anticruelty statutes, despite the fact that such statutes would seem to include most sentient animals, because there are so many exemptions for activities humans value more than they value sparing animals any amount of suffering.

A problem with the application of anticruelty statutes to bioengineering in general and to bioartistic genetic manipulation of animals in particular is that blurring of animal species—a stated purpose of bioart—could result in further complication. For example, consider Alba’s situation in light of Alaska’s anticruelty statute, which defines an “animal” as “a vertebrate living creature not a human being, but does not include fish” (Alaska Stat. §11.81.900) or Georgia’s statute, which states that “‘animal’ shall not include any fish” (Ga. Code Ann. § 16-24-4). If Alba has become a rabbit-jellyfish, would the jellyfish part of her result in exclusion from the statutory definition of an “animal?”

Most genetically modified animals produced to date can be identified as primarily one type of animal. Whether legal outcomes would correspond or not, most people would identify a GloFish as a fish and Alba as a rabbit, for instance. However, even if there is some degree of clarity (or presumptive clarity) about some transgenic animals, the fact remains that the more an animal becomes an “artifact”—the more distant it is from its originating form—then the more distant the animal is from the contemplation of and application of the anticruelty statutes. Most importantly, the will to apply concepts of
anticruelty to “monstrous” creatures invented by humans may diminish as a result of such blurring.

STATE ANTICRUELTY LAWS: WHAT CONSTITUTES “SUFFERING”? 

The second relevant legal question—that of the type of suffering covered by general anticruelty statutes—is equally difficult. Bioengineering results in the birth of many deformed and disabled animals, in addition to the few who become “poster children” for transgenic alteration. The fact that many animals suffer and die for every one that survives the process of transgenic alteration may be considered legally analogous to the breeding of companion animals and livestock, which is not actionable as “cruelty.” That transgenically altered animals suffer serious disabilities during their lives may be considered similarly analogous and thus not actionable as “cruelty.” Medical ethicist Art Caplan alluded to this problem when he was interviewed about GloFish. Caplan noted that it would be ethically troubling if there were “changes that cause an animal to suffer, such as the hip problems in German Shepherds caused by inbreeding or breathing problems that bulldog breeds develop” (Lamb, 2004, Ethics of Bioengineering section, para 3). It might be ethically troubling, but it has not been legally troubling in the case of traditional breeding practices. Traditional methods of altering the nature of animals through breeding, even when such breeding has resulted in considerable suffering, have not been actionable as cruelty. The legal question would be whether genetic modification of animals for purposes of bioart is analogous to other types of breeding and genetic alteration of animals that similarly results in the suffering of many animals who die or are killed as part of the enterprise. Do humans “need” art in the same way that they “need” other commodities that cause animal suffering?

Although most genetically modified animals displayed to the public, such as fluorescent rabbits, pigs, monkeys, and fish, do not appear to be suffering from physical ailments, it is difficult to know if such animals experience unexpressed pain or if they experience the alteration as degrading or humiliating. This is a problem even outside the context of transgenic alteration of animals. For instance, when young mice were surgically attached to older mice to determine whether the physical joinder would confer youth restorative advantages to the older mice, there may have been no indication of suffering once the wound was healed (Brownlee, 2005). Nevertheless, forcible physical joinder significantly altered the life circumstances of both mice, and we cannot know how those mice experienced life thereafter.

Bioengineered animals create even more difficult assessment problems than we have experienced before. Given legal definitions of “cruelty” and “suffering,” is it legally
“cruel” to a mouse to genetically modify him so that he no longer experiences fear or anxiety in the presence of cats? (The Associated Press, 2007). Since anticruelty statutes deal with physical manifestations of suffering, they are inadequate for reaching the deeper question of human prerogative to alter the mice at all. That is true whether the mice were surgically or genetically altered or whether they were altered for reasons of artistic expression or science.

General anticruelty statutes usually prohibit only those acts that cause severe physical manifestations of suffering. The statutory infrastructure for recognizing other kinds of suffering does not exist in those general statutes. However, specifically enacted anticruelty statutes can prohibit a wider range of acts than those that cause direct suffering to animals. For example, many states have anticruelty statutes that specifically prohibit the sale of artificially colored animals such as chickens, rabbits, or ducks, even if the process of artificial coloring itself does not cause the animal to suffer. While it would still be legal to artificially color an animal, not being able to sell or give away such animals could limit the extent to which people artificially color animals at all. Connecticut is one such state. It prohibits, as a matter of cruelty to animals, “any person” from selling or giving away, “living chickens, ducklings, other fowl or rabbits, which have been dyed, colored or otherwise treated so as to import to them an artificial color . . . ” (Conn. Gen. Stat. Ann. tit. 53, ch. 945 § 53-249a). GloFish would not be covered by Connecticut’s prohibition because they are fish and, therefore, not “animals” covered by the statute. The fluorescent green mice in Kac’s “The Eighth Day” would not be covered, either.

A facial reading of the statute would suggest that it would be illegal in Connecticut to sell or give away a rabbit like Alba because the rabbit has been “treated so as to import to [the rabbit] an artificial color.” However, counter-arguments exist that (a) the words “treated” and “rabbit” do not apply when the process of importing an artificial color is genetic alteration and the result is a rabbit-jellyfish, and (b) that the legislative history does not support the application of the law in a context the legislature could not have anticipated. If the legislature intended to prevent the production of artificially colored animals typically sold or given away at Easter or fundraising events and did not anticipate use of the statute to prohibit the sale or giving away of a genetically altered rabbit, there is an argument that it would be improper to assume that legislators would have addressed artificial coloration of animals through genetic alteration in the same way that they addressed the artificial coloration of animals through other means. Yet, if it is cruel to “import” an artificial color to “a chicken, duckling, other fowl or rabbit” through non-genetic means how could it not be cruel to alter the very genetic make-up of an animal with the same result?
STATE ANTICRUELTY LAWS: ANIMAL SUFFERING AS “NECESSARY” TO ACHIEVE VALUED HUMAN GOALS

Ultimately, the third relevant legal question—the reason for altering the color of the rabbit—would play an important role in deciding questions of statutory application. That would entail a consideration of who altered the color of the animal—scientist, commercial vendor of animals, or bioartist—and the circumstances under which the animal was genetically altered. The most legally protected categories are those of “scientist” and “scientific research.” Even the most egregious suffering inflicted on an animal will not be actionable as “cruel” if that suffering occurs as a result of “scientific research.” However, statutory ambiguity lies in the definition of “scientific research.” All states have exemptions for scientific research, but what constitutes “scientific research” varies.

In seeming blanket approval for the scientific enterprise and scientists’ entitlement to define what that means without interference, some statutes define “scientific research” as activities conducted in licensed research facilities or by qualified scientists. Nevertheless, it is clear that not all acts are “research” simply because of where and who engages in those acts. Beating an animal to death as part of “scientific research” on humans’ reactions to the suffering of animals would not be prosecuted as “cruelty,” but beating an animal to death because the scientist was frustrated with the animal’s lack of cooperation with a research protocol could be. Other activities, such as housing companion animals while researchers and staff are out of town, would not constitute “research” just because they are conducted by a properly licensed scientist in a properly licensed research facility. Therefore, a scientist’s performing the genetic alteration of an animal at the request of a bioartist would not necessarily immunize the act as “scientific.”

Some statutes capture those and other distinctions by exempting “bona fide research” or “medical research” or “research governed by accepted standards.” Since bioengineering for artistic purposes is distinguishable from bioengineering to serve other human purposes, it is possible that bioartistic creations, even if they take place in licensed research facilities by licensed scientists, fall outside the purview of the scientific research exemption in a state anticruelty statute. There are no explicit exemptions for bioart, and, without protection of the scientific research exemption, the bioartist and scientist would be vulnerable to prosecution for cruelty if animals covered by the statute suffer harms that could be characterized as “torment” or “mutilation” as a result of transgenic bioartistic activities.

The weight of prosecution would then rest on whether “artistic expression” is sufficiently “necessary” to justify the incidental infliction of suffering on animals. Arguably, any use of animals and any amount of suffering inflicted on them should pass legal mus-
ter as long as humans may legally subject animals to horrific suffering in factory farms and slaughterhouses for no better reason than that humans like the taste of animal flesh. Similarly, as long as scientists can lawfully inflict any amount of suffering on animals as part of scientific research, which is entirely legal under state anticruelty laws and the federal Animal Welfare Act, why should artists not have similar latitude?

Given the history of enactment and application of anticruelty statutes, bioartists might well claim that all justifiable uses of animals should be protected and that the operation of the anticruelty statutes should address purely gratuitous, senselessly inflicted suffering on animals. Of course, bioartists would not identify transgenic bioart (or other types of bioart) as gratuitously inflicted suffering, even though alternative means of expressing the same ideas exist. For those of us who care about animals’ interests in non-interference, let alone freedom from human-inflicted suffering, there are no justifiable uses of animals, and the operation of the anticruelty statutes should protect animals in many more ways than they currently do. However, the law tends to reflect the values of consumers, legislators, jurors, and others who make distinctions among the purposes for which suffering is inflicted on animals. To many, bioengineering for purposes of advances in human health is a “necessary evil” while bioengineering for purposes of critiquing science, scientists, or bioengineering is not—or at least it is not necessary when it comes to the genetic manipulation of or infliction of suffering on sentient creatures for such purposes.

In fact, “necessity” is a highly freighted concept in the context of anticruelty statutes. When it comes to factory farming practices, the “necessity” to eat animal-derived products has not been successfully challenged. “Necessity” has bearing only on whether a particular practice is necessary to the production of those products, which are themselves presumed to be necessary (Francione, 2007, p. 10). Hence, it would be “cruel” to deny food to a cow because doing so serves no purpose, but it would not be “cruel” to deny food to a laying hen if doing so results in her laying more eggs when access to food is restored. Similarly, it is not possible to challenge the “need” to hunt or to use animals in experimentation. Only acts that cause terrible suffering without any socially justified purpose are deemed “cruel” under state anticruelty statutes.

It is not clear whether any type of bioart, including transgenic bioart, would receive similar presumptive approval as “necessary” to fulfill a socially justified purpose. The defense of “artistic expression” did not exculpate a vegetarian Canadian who produced a film of his torture and killing of a stray cat ostensibly as a social commentary on meat-eating (The Queen v. Power, 2003). To the extent that transgenic bioart results in the same type of visible suffering, it might well not pass legal muster. However, bioart that
does not result in that level of visible suffering might not be actionable because it is not
the type of suffering general anticruelty statutes are intended to prohibit or because the
production of art is considered to be as necessary as the production of meat. The suffer-
ing of all the animals used in the process and the disabilities that plague even the “suc-
cess” stories would have to become sufficiently visible to offset the images of “happily
green” rabbits and mice.

Certainly it is not strictly necessary to actually genetically alter or harm living animals in
order to express points of view that involve the genetic alteration of animals. Artist
Adam Brandjes’s use of animatronic animals suggests that they can be effective means
of communicating various perspectives, including disturbing or otherwise complex relations-
ships between real and manipulated living beings (Langill, 2006, this volume). Similarly, sophisticated methods of interactive juxtaposition of images from existing video footage can accomplish many of the same expressive goals. Some artists may bridle at the thought of suggested substitution and argue that restrictions of the means by which ideas are communicated is antithetical to the very nature of art. However, Caroline Langill (2006), speaking from the perspective of an artist, argues persuasively that “[a]rtists are in a position to evaluate how genetic modification impacts living organisms and culture, but not if we embrace methods that are shared with the post-industrial corporate world” (this volume). The fact is, transgenic bioart is already limited; humans are not subjects of transgenic bioart. That nonhuman animals can be used is not recognition of a “need” for artistic license; it is uncritical, unself-conscious replication of the lesser status of animals as mere resources. The problem for animals and the people who care about them is that the legal definition of “necessity” in general anticruelty statutes has not historically protected most animals from most forms of human-inflicted suffering.

The Federal Animal Welfare Act

All of the problems associated with the applicability of state anticruelty statutes to bio-
ingineering, transgenic bioart, and transgenic animals are present at the federal level. For instance, the problem for animals of non-inclusive statutory definitions of “animals” is nowhere more serious than in the federal Animal Welfare Act of 1970, as amended in 1985 (“AWA”), which defines an “animal” as “any live or dead dog, cat, monkey (non-
human primate mammal), guinea pig, hamster, rabbit, or such other warm-blooded ani-
mal, as the Secretary [of Agriculture] may determine is being used, or is intended for
use, for research, testing, experimentation, or exhibition purposes” (§ 2132 [g]). Alba
and ANDi, the fluorescent monkey, would be covered by the AWA, if they were deter-
mined to be a rabbit and monkey, respectively. Transgenic fish, birds, and mice would
not be covered at all. Indeed, it is estimated that 90% of animals used in scientific re-
search are birds, mice, and rats—animals that are not considered “animals” under the
AWA and, therefore, not protected at all (Cornutt, 2001, pp. 57, 69, 448). For decades,
legal advocates for animals petitioned the Secretary to use his discretion to designate
them as animals. When it appeared that they would finally be successful, Congress
amended the AWA explicitly to exclude them (Francione, 2007, p. 31).

The loss to mice, rats, birds, and other non-enumerated animals that they are not in-
cluded as “animals” is not as great as first appears. That is because the AWA is ex-
tremely limited in scope. It is also grossly inadequate for protecting even the most
minimal interests of animals who are covered by the AWA. First, although one of the
AWA’s purported purposes is “to insure that animals intended for use in research facili-
ties or for exhibition purposes . . . are provided humane care and treatment” (§ 2131 [2]),
for the AWA to apply at all there must be use of a federally inspected or funded research
facility or the transport in interstate commerce of animals who are the subject of the
bioart/biotechnology. Second, the definition of a “research facility” is linked to the defi-
nition of “animal” in that only entities that use live “animals” as defined by the AWA
are “research facilities” covered by the AWA (§ 2131 [e]). Moreover, the Secretary of
Agriculture has authority to exempt by regulation any entity that would be covered by
the AWA, if that entity does not use live dogs or cats or “substantial numbers” of other
live animals for biomedical research or testing (§ 2131 [e]).

The AWA states that the “Secretary [of Agriculture] shall promulgate standards to gov-
ern the humane handling, care, treatment, and transportation of animals by dealers, re-
search facilities, and exhibitors” (§ 2143 [a][1]), but the AWA also states explicitly that
the Secretary does not have the authority to act in ways that affect the design or per-
formance of research (§ 2143 [a][6][A][i]-[iii]). Moreover, in cases of “scientific neces-
sity” it is possible to subject animals to painful experimentation without the use of any
form of pain relief at all (§ 2143 [3][C][v]). In other words, the AWA does not constrain
any means by which or purposes for which animals are subjected to experimentation.
Finally, even if meaningful protection of some kind were conferred by the AWA, it is
enforceable only by the United States Department of Agriculture, which, for a variety of
reasons, fails to enforce the law.

The federal AWA burdens scientists only with paperwork and not with restrictions on
how they can exploit animals or how much suffering they can inflict on animals. As
such, it is a real boon to scientists and research facilities because its existence suggests to
the public that there are safeguards in place to protect animals. In response to animal
advocate protests, the heads of research facilities can and do state truthfully that their
facilities are in full compliance with federal laws that regulate the humane treatment of
animals. They are not asked or required to describe those laws or to recount the limitations of those laws for protecting animals even from intense and prolonged suffering. So great is the protection afforded scientists (and not animals) that, if the Animal Welfare Act did not exist in its current form, scientists and research institutions would seek its enactment.

**OF BIOART AND THE FIRST AMENDMENT**

Ultimately, only legislation that cuts deeply at the root of human prerogative to exploit nature—not just sentient animals—will have much effect on bioengineering, bioart, animals, and nature. Existing law is not of much use in resolving the difficult problems that bioart exacerbates through its replication of existing patterns of disregard for nature; it does not even assuredly guarantee the health and safety of sentient beings used in bioart. Yet any deep-cutting proposals that would have the effect of curtailing bioartistic endeavors would undoubtedly meet with objections based on parity of treatment with other exploitative activities and claims of constitutional First Amendment protection.

It is striking that even in a case of alleged improper procurement of biological materials, bioartists claim that the primary objective of prosecution was persecution of bioartists and erosion of First Amendment rights of free speech. This much debated case began after Steven Kurtz, a founder of the Critical Art Ensemble (CAE), called for emergency assistance when he discovered that his wife had stopped breathing. Emergency responders found Hope Kurtz dead in a residence where there was also “a biological lab, with an incubator, centrifuge and bacterial cultures growing in Petri dishes. Windows nearby were covered with foil, and on the shelves sat books like ‘The Biology of Doom’ and ‘Spores, Plagues and History: The Story of Anthrax’” (Kennedy, 2005, para 2). Kurtz was initially suspected of bioterrorism, but, when the cultures were found to contain only benign bacteria, legal proceedings related to bioterrorism ended. Nevertheless, prosecutors went forward with legal charges related to the means by which Kurtz procured the bacteria samples.

Prosecutors alleged that Kurtz and geneticist Robert Ferrell committed mail and wire fraud when Ferrell ordered samples of bacteria on behalf of Kurtz, allegedly in violation of the contractual terms by which American Type Culture Collection (ATCC) supplies biological materials to scientists and research facilities. Ultimately, Ferrell pleaded guilty to lesser charges, and a judge dismissed the case against Kurtz (*United States v. Kurtz*, 2008). The court dismissed the case on the basis of the indictment as written but explicitly left open the question of whether the prosecution could go forward if the indictment were written differently. In other words, the court made quite clear that it
was making no determination about whether Kurtz and Ferrell committed mail and wire fraud or any other unlawful act. Regardless, defenders of Kurtz and Ferrell contend that there should have been no legal proceedings against either of them once it was established that the bacterial cultures were harmless. They argue that prosecution for “technical” violations constituted persecution of bioartists and an over-reaction to the events of September 11, 2001.16

Bioethics professor George Annas seems to support this view but blames Kurtz and CAE for eliciting that over-reaction. In his critical review of the relationship between bioart and bioterrorism, Annas notes that as a founder of CAE, Steven Kurtz positioned his art and commentary so as to provoke fears about biotechnology, going so far as to encourage critics of biotechnology to engage in “fuzzy biological sabotage,” such as releasing visibly genetically altered flies at restaurants “to stir up paranoia” (Annas, 2006, p. 2717). Annas takes the position that governmental reactions—including, potentially, over-reactions—based on fear should be expected, if bioart “aims at the heart of our fears’ and intentionally “disturbs” (2006, p. 2717).

There may well be some truth to the argument that a particular group that promotes “fuzzy biological sabotage” might be subject to more suspicion than other groups, but Annas’s general argument about transgenic bioart provoking such suspicion seems overly simplified both as to transgenic bioartists’ intentions and public responses. As to the first—transgenic bioartists’ intentions—surely it can be said that there is an intent to “provoke” and to engage the public in a discourse. For instance, Kac used Alba to express different ideas, including that “molecular biology is not a rarefied language spoken by experts beyond the reach of ordinary citizens” (as cited in Lynch, 2008, p. 194) and that people should “overcome their fear of transgenic creatures” (Lynch, 2008, p. 193). Similarly, CAE used different kinds of projects to elicit a varied discourse on biotechnology, some of which included prompts related to bioterrorism. However, any given prompt can signal a variety of intentions on the part of the bioartist.

As to the second—public responses—there are many possibilities besides simply fear or dislike of transgenic bioart and over-reaction to the potential for harm to human health or the environment. For instance, people responded to Alba in many different ways, including simple praise for her appearance, “anxieties about mutant monstrosities,” attention to the plight of animals in “laboratory prison(s),” and concerns about “the irresponsibility of contemporary conceptual art” (Lynch, 2008, pp. 192, 196). Similarly, there were probably a number of different reactions to the circumstances that surrounded the filing of charges against Robert Ferrell and Steven Kurtz. Fears provoked by paraphernalia associated with a project to simulate bioterrorist attacks may or may not have
played a significant role in the prosecutions for mail and wire fraud. As Annas argues, it is possible that members of the public (including the federal grand jury) and law enforcement do not like the idea of transgenic bioart, even if—or perhaps especially when—it is practiced by a group that purports to criticize biotechnology.

On the other hand, that charges related to the acquisition of bacteria samples remained after bioterrorism charges were dropped may be indicative only of what can happen when some but not all charges are determined clearly to be without legal basis. As noted earlier, there was no clear legal resolution of the matter. The mere fact that a judge decided ultimately to dismiss the case because the indictment was written in a particular way does not mean that Kurtz and Ferrell’s conduct was lawful or that the prosecution was trivial. Certainly there is room for Annas’s point that “[b]iosafety regulations are not merely legal technicalities. They constitute some of the terms of the pact between science and the public that established the public trust” (2006, p. 2718). And, as transgenic bioartist Joe Davis has pointed out, there is no reason to expect less of bioartists than scientists when it comes to biosafety rules (Kennedy, 2005, para 23). It is not persecution of transgenic bioartists if they are held to a standard of care and rule compliance that is no higher than that applied to others who work with biological material.17

Since law is as much an interpretative process as any other interpretative endeavor, it is not possible to rely solely on one explanation for the legal events that ensued after emergency responders came to Kurtz’s home any more than it is possible to rely solely on one interpretation of CAE’s art or Kac’s production of Alba. Just as it is possible to claim that public lack of understanding of bioart led to over-reaction to the circumstances that surrounded the death of Hope Kurtz, it is possible to claim that some artists’ lack of understanding of legal process and constitutional free speech protections led to over-reactions to the prosecutions of Kurtz and Ferrell.

Of course, there is no mistake that free speech is considered a fundamental right. Free speech protection is supported by numerous rationales, including respect for the individual, concerns about governmental suppression of political speech, and the belief that protection of speech results in a “marketplace of ideas” through which society explores and selects those ideas that best serve society’s interests. Bioart serves purposes for which free speech is protected, and bioart is presumptively protected because it is artistic expression. Nevertheless, application of the Constitution’s right to free speech in the context of bioart is no more straightforward than is the application of state anticieluity statutes or the federal Animal Welfare Act. That is because fundamental rights are not absolute rights. There are circumstances under which rights guaranteed under the Constitution can be permissibly negatively impacted by governmental action. For instance,
government can, under some circumstances, regulate some types of conduct that have an impact on speech. There is a free speech right to discuss the results of scientific research, but courts have not found an independent free speech right to conduct the underlying research itself, which may be regulated in ways that affect free speech (Adams, 2003; Andrews, 1998). Indeed, government already regulates scientific research in ways that have an impact on speech, including transgenic bioart. Laws that pertain to experimentation on human subjects already seriously constrain transgenic bioartistic expression of a number of ideas. Government could further regulate all uses of living matter for reasons of public health, environmental protection, or prevention of cruelty to animals. As long as bioart is not specifically targeted because of the ideas it seeks to explore or disproportionately negatively impacted by an overly broad law that sweeps in bioart without needing to do so to meet the objectives of the law, there would not be a constitutional violation.

First Amendment law also allows government to directly limit free speech on the basis of content when there are compelling governmental interests in doing so. For instance, government can regulate commercial speech and obscene speech. Framed as a type of prohibition on obscene speech, Congress, in 1999, passed a law to criminalize the production and sale of depictions of animal cruelty for which animals were intentionally subjected to cruelty for the sexual gratification of the viewer (U.S. Code Ann. tit. 18, § 48). The law was enacted with the goal of assisting local law enforcement in prosecuting those in the “crush video” business. “Crush videos” are videos in which women taunt, torture, and gradually crush an animal to death with their high heels. Various types of animals—mice, rats, worms, kittens, lizards, guinea pigs, and insects—are used. They are immobilized, such as being taped to the floor, and capturing their experience of torture and death is the object of crush video production. Such videos appeal to those who are sexually stimulated by identification with the victim.

Many of the acts depicted in crush videos violate state anticruelty laws, and local law enforcement agencies persuaded Congress that there were enforcement problems that could be resolved by enacting a federal law. U.S. Code, Title 18, § 48 seems sweeping in that it covers the creation, sale, and possession (with intent to sell) of depictions of animal cruelty of all kinds in order to “dry up the market” for depictions of cruelty to animals, which drives the production of such depictions. In fact, overbreadth was one reason given by the appellate court that overturned the first conviction under the law in a case involving sales of depictions of dog-fighting (United States v. Stevens, 2008). However, three dissenting judges in the Stevens case argued that the law is not impermissibly overly broad because the law as enacted is limited in scope. For instance, depicted acts of cruelty must be illegal in the state where the depiction is created, sold, or possessed.
with intent to sell; one does not have a right to commit a crime for the sake of art. Also, there are many explicit exemptions in the law, such as works of “serious artistic value.”

At the heart of the disagreement between the majority and dissenting judges in the Stevens case is whether protecting animals is a sufficiently important justification for restricting free speech. Unlike the majority, the dissenting judges argue that there is minimal, if any, value in depictions of acts of cruelty to animals harmed only for the purpose of making such depictions. They argue further that protecting animals from such gratuitous acts of violence is a compelling governmental interest sufficient to restrict even otherwise protected speech, as evinced by anticruelty statutes enacted in all 50 states, and that U.S. Code, Title 18, § 48 as enacted is sufficiently narrowly tailored to accomplish the goal of protecting animals from the gratuitous infliction of suffering.

It remains to be seen whether there will be a further appeal of the Stevens case or if appellate courts in other jurisdictions will adopt a different interpretation of U.S. Code, Title 18, § 48. However, even before those appeals materialize, the Stevens case reveals that, although government can, with narrowly tailored laws, restrict free speech interests in favor of other compelling governmental interests, challenges to free speech-restrictive laws enacted to protect animals are inevitable because there is ambivalence about whether preventing animal suffering is important enough to warrant restricting human conduct.

CONCLUSION: THE ROLE OF LAW

Much of the foregoing has concerned sentient beings. Yet, at its heart, the problem of humans’ ruthless exploitation of sentient beings is how we treat nature. As a theoretical matter, laws could be enacted to prevent harms to nature and animals that result from biotechnology. As a pragmatic matter, laws are reactive, piecemeal, and controlled by special interest groups that would consider a respectful relationship to nature to be a major hindrance. The shallow reach of existing laws attests to the existence of only minimal regard for animals and nature, and it is difficult to imagine a reliable legal pathway to a more respectful relationship. Many advocates for such a relationship propose legal avenues for disclosing to the public how animals are treated. However, as Steven Best so persuasively points out, mere factual disclosure of what happens to animals and nature may not have transformative effect (Best, 2006, p. this volume). Alternative, differently contextualized presentations of the facts—contextualized in various ways to illuminate the extent of human disrespect—can provide opportunities through which differently situated people become aware of nature independently of its utility in satisfying human desires. That is the power of language of all sorts, including art. However, that transfor-
mative potential will be hindered to the extent that a linguistic or artistic form of expression reinforces a primary structure by which humans’ oppression of nature is sustained. That is why transgenic bioart by itself cannot have the transformative effect that its advocates promise. Therefore, if transgenic bioart exists, then contrary voices must also exist.

Law cannot now serve as a primary means to protect nature because law is currently primarily protective of human interests that are realized through exploitation of nature. Other, extra-legal voices will have to be the primary voices of opposition to the course humans have taken to degrade nature. Nevertheless, there will also and always be people grounded in law who will use their training to seek to limit the damage and direction of biotechnology, and who will thereby join with others in turning human minds and hearts in the direction of hearing those of animals and nature.

ENDNOTES

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2 Technically, “transgenic art” is a sub-category of “bioart,” which includes other types of art that do not involve genetic manipulation of living beings but do involve manipulation or killing animals for artistic expressive purposes. For instance, bioartist Garnet Hertz (2007) killed frogs, replaced their internal organs with webserver components, and suspended them in a clear glass container of mineral oil, and bioartist Hubert Duprat removed caddis fly larvae from their natural habitat and placed them in environments in which the only materials available with which to build external skeletal material were beads, pearls, and 18-karat gold (Duprat & Besson, 1997). “The activities of the caddis worm, as manipulated by Hubert Duprat, are prompted by the “noise”—beads, pearls and 18-karat gold pieces—introduced by the artist into the insect’s environment.” (Duprat & Besson, 1997, para 1). Nevertheless, the term “bioart” is frequently used to refer specifically to “transgenic art” (e.g., Kennedy, 2005; Annas, 2006) as well as non-transgenic bioart forms.

3 Randy Kennedy (2005) describes collaborative relationships that range from the bioartist depending on a scientist to acquire bacteria to working as an unpaid research assistant to a scientist in order to have full access to a laboratory. Also, as suggested by Lisa Lynch’s (2008) discussion
of Alba, the genetically altered rabbit, bioartists may make use of living beings who have been altered by scientists.


5 The court is quoting Article I, § 8, cl. 8 of the Constitution, which authorized Congress to enact the law to be applied in this case, the Patent Act (35 U.S.C. § 101).

6 The court is citing the previously decided U.S. Supreme Court case of Funk Brothers Seed Company v. Kalo Inoculant Company, 333 U.S. 127 (1948).

7 Christen Brownlee (2005) reported for Science News that “scientists removed skin along the flanks of young mice, ages 2 to 3 months, and old mice, ages 19 to 26 months. They then sutured pairs of the mice together. The mice quickly adjusted life as partners, cooperatively eating and roaming their cage. Within several weeks, each pair’s blood systems merged. After giving each mouse a leg injury, the researchers found that among the young-old pairs, young mice healed more slowly than did young mice that hadn’t been joined and old mice showed significantly faster healing rates than old, solo mice did” (para 3).

8 For example, Idaho’s anticruelty law does not apply to “research carried out by professionally recognized private or public research facilities or institutions.” Idaho Code § 25-3514 (3). Maryland’s anticruelty statute does not apply to “animals that are used in privately, locally, State, or federally funded scientific or medical activities” Md. Crim. Law § 10-602 (7).

9 For example, Kentucky exempts “bona fide animal research activities of institutions of higher education” in addition to “business entities registered with the U.S. Department of Agriculture or subject to the other federal laws governing animal research.” Ky. Revised Stat. § 525.130 (2) (f). Hawaii exempts “activities carried on for scientific research governed by standards of accepted educational or medicinal practices.” Haw. Revised Stat. § 711-1108.5 (2) (b).

10 For example, Connecticut exempts suffering inflicted on animals “while performing medical research as an employee of, student in or person associated with any hospital, educational institution or laboratory” Conn. Gen. Stat. Ann. § 53-247 (b).

11 Alaska exempts the infliction of suffering on animals that is “part of scientific research governed by accepted standards.” Alaska Stat. § 11.61.140 (c).


13 There appears to be considerable consistency among the various accounts of the background facts of the case. A good general introduction is that of Randy Kennedy, reporting for The New York Times on July 3, 2005 in an article entitled “The Artists in the Hazmat Suits.” George J. Annas (2006) discusses the prosecution of Dr. Thomas Butler and the prosecutions of Kurtz and
Ferrell and raises the possibility that blurring of lines between bioart and bioterrorism has the potential to lead to over-reaction.

14 The progress of the case is reported at http://www.caedefensefund.org.

15 The court stated: “The Court passes no judgment on whether the indictment could have been drafted in such a way, based on the facts and circumstances as they have been presented here, to allege sufficiently a “no-sale” theory of fraud. It simply finds that the indictment, as currently written, [italics added] fails to allege such a theory.” (United States v. Kurtz, 2008, p. 5)


17 George Annas (2006) reports extensively on the case of Dr. Thomas Butler who served a two-year sentence for failing to account for some samples of plague cultures, mislabeling shipments that contained such samples, and transporting such samples without proper permits. There was no evidence of harm as a result of these lapses, and it was possible to characterize the violations of the shipment rules as “technical” or “trivial.” Nevertheless, such rules are hardly trivial to the public concerned about accidental tragedies, not just intentional terrorist attacks. That Kurtz and Ferrell were involved in the transport of benign bacterial cultures does not change the fact that rules exist partially to avoid case-by-case line-drawing about when rule compliance is actually required.

18 It is beyond the scope of this chapter to fully examine First Amendment jurisprudence as applied to bioart. However, it is discussed at length in an article by Sheldon Nahmod (2001) in which he concludes that there is no easy solution to problems posed at the intersection of the First Amendment and bioart (p. 484). The devil is in the details of specific proposed laws and the application of specific laws to particular bioartistic projects.
REFERENCES


Connecticut General Statutes Annotated, Chapter 945, § 53-249a.


Georgia. Code Annotated § 16-12-4 (a) (1).


U.S. Code Annotated, Title 18, §48.
