SACRIFICIAL SYMBOLISM
IN ANIMAL EXPERIMENTATION:
OBJECT OR PET?

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Abstract. Based on ethnographic research in biomedical laboratories, this paper argues that sacrifice is an ambivalent notion in the culture of animal experimentation, requiring both objectification of and identification with the animal. Because of this ambivalence, laboratory animals are not accorded a single, uniform, and unchanging status but seen simultaneously as objects and pets. Animals are objectified by incorporation into the protocol, by deindividualization, by commodification, by isolation, and by situational definition. At the same time, laboratory workers develop pet-like relationships with the animals, which may be treated as enshrined pets, liberated pets, saved pets, or martyred pets.

INTRODUCTION

In the argot of experimental science, the term “sacrifice” refers to the killing of animals. Recently, the National Institutes of Health (NIH) decided to prohibit the use of this term in grant applications, requiring instead the term “kill.” Nor does “sacrifice” appear in the NIH’s Guide for the Care and Use of Laboratory Animals (1985). Similarly, medical journals have moved away from this term because of its religious connotations. Despite these restrictions, most people in laboratories continue to use the term colloquially, sometimes shortening it to “sack.” Those who do not use this term almost always avoid saying “kill,” relying instead on terms such as “terminate” or using an X in written form. “Sacrifice” is also still used in discussions at scientific meetings and in manuals on the handling and dissection of animals (e.g., Hebel and Stromberg, 1976).

The significance of the term “sacrifice” is not chewed over in laboratory talk nor contemplated at length. When asked why they use the term and what it means, many scientists and technicians are unable to respond. A few say that it is merely a euphemism. However, the absence of a response should not necessarily be taken at face value. There is more meaning to the term than most laboratory people can articulate in an interview situation. This is not surprising: the paramount realities of cultures are rarely easy to put into words, especially if they involve paradoxes and contradictions; this paper argues that, in the culture of animal experimentation, the notion of sacrifice is such a paramount reality.

Ambivalence, contends Bakan (1968), is inherent in sacrifice. The sacrificer is involved simultaneously in an act of righteousness and one of wrongdoing. Regardless of the integrity of the sacrificer and the higher purposes of the sacrifice, death, and perhaps suffering, is inflicted on another being. When humans inflict pain or cause death, they characteristically believe that they do so out of external necessity. Sacrifice is done for a deity or for a government. According to Bakan, “ultra-realism” buttresses the external necessity of killing, focusing on the construction of a banal world of order, obedience, bureaucracy, schedules, files, and so forth. The ultrarealist symbol is the object—that without life, which can be fully dominated.

There is also a personal necessity in sacrifice, stemming from another inherent ambivalence: the confounding of self and other in the act. On the one hand, sacrifice is transitive, entailing the killing of something else; on the other hand, it is intransitive, entailing the surrender of an important part of one’s self. To engage in sacrifice is to kill another organism, yet that organism’s loss of life also constitutes a loss to the person who is sacrificing. Bakan claims that part of the body of the sacrificer becomes the victim in preparation for its sacrifice. Unless that which is sacrificed is, in some sense, one’s self, sacrifice cannot work. Insofar as that which is sacrificed is one’s self, the realization comes quickly that sacrificing the...
other is evasive and that, if one is to sacrifice at all, one should sacrifice one’s self directly. Reflecting this ambivalence, the personal necessity of sacrifice sees the victim as similar to the sacrificer, allowing human identification. The personal necessity of sacrifice is buttressed through what Bakan calls “ultra-mythicism.” This relies on the construction of a world whose inhabitants attempt to express basic truths allegorically, through certain stories, beliefs, or actions. These truths are important for people to hear; they connect the individual and the culture in a manner that is psychologically satisfying, by portraying people’s actions in ways that humanize their motives. The ultramythical symbol is the living—that with a will, which is not fully controllable.

Sacrifice involves the transformation of the victim into both object and myth. As a transformational process, it requires that the victim assume oppositional meaning, both different from and similar to the community. The victim goes through an objectifying metamorphosis culminating in its death and contribution to the larger community. It assumes a new form, albeit no longer corporeal. This metamorphosis entails the stripping away of the victim’s former nature, such that the purest body remains and can be used in a generalized manner. Any human-like features are removed; living beings become objects. At the same time, the victim must be linked back to the community in symbolic form. This requires a humanizing metamorphosis culminating in the reintegration of the victim into the community. This entails the moral elevation of the victim, such that it can become an object of identification and attachment.

This metamorphic ambivalence is an attempt to manage two psychological problems of sacrifice. Objectification of the victim guards against attachment and fosters sufficient distance for the sacrificer to carry out the sacrifice itself at minimal emotional cost. Yet sacrifice that strips victims of their everyday meaning ultimately is unsatisfactory as a psychological mechanism because it involves a surrender of feeling. Although the process protects the human self, it also injures it. Accomplishing this transformation is only possible in the presence of a counterforce that resists objectification.

This paper postulates that “sacrifice” is more than a euphemism in laboratories. Beyond the mere blunting of the word “kill,” it has a symbolic meaning that reflects the scientific and personal necessities of the participants. External necessity sees sacrifice as necessary to achieve the higher purpose of advancing the stock of scientific knowledge and medical progress. To accomplish this, the animal must be transformed into an object so that it can have a generalized utility for the scientific community. The personal necessity of sacrifice makes it possible for people to acknowledge the living nature of animals and to identify with their victims. Some animals, often of the same species, go through a different metamorphosis whereby they deliberately are spared sacrifice so that they can assume personalized significance for the human community: alongside the sacrificial victims is a member of the same species, indulged, elevated, even deified.

The metamorphic symbolism of laboratory animals also represents an attempt to manage the psychological problems of sacrifice. Objectification of laboratory animals provides some degree of emotional protection from awareness of the preempted natural death of animals. Yet, although scientists and technicians need to distance themselves from the victim, they also find themselves moving toward the victim. The process that transforms the animal into object is not fully effective. It is not only impossible to deny completely the nature of animals, but many people do not want to make this denial. They like their victims. Defining laboratory animals as pets is an expression of these feelings and a symbolic repudiation of objectification.

The research reported in this paper is part of a larger ongoing study of the culture of animal experimentation. Beginning in 1984, data have been collected through participant observation, supplemented by semistructured interviews. Twenty biomedical laboratories and six animal facilities were studied in universities, hospitals, and private research centers. The sample represents a wide range of basic science and applied medical laboratories. Animal models observed include frogs, turtles, hamsters, mice, rats, guinea pigs, rabbits, pigs, sheep, cows, cats, dogs, and monkeys. Over 110 lengthy interviews have been conducted with principal
investigators, postdoctoral fellows, research technicians, animal-care technicians, and veterinarians.

OBJECTIFICATION AS A SOCIAL PROCESS

Counteranthropomorphism, according to Milgram (1974), is the attribution of inanimate qualities to living things. Making animate creatures objects allows a denial of the interconnectedness between subject and object. This denial nullifies certain moral constraints and permits some kinds of violation (Keller, 1985). The scientific necessities of research require the objectification of animals so that they can be treated in ways that would be impossible if they were seen as fully animate. Animals defined as laboratory objects come to occupy a special status, different from that accorded the same animals outside the laboratory. This special status objectifies the animal, defining it as though it were not a living thing. One chief technician summed up this special status: postdoctoral fellows and principal investigators see animals as data; research technicians see them as equipment or chemicals; animal-care technicians see them as dying nursing-home patients. While it is possible to argue with these specific examples, the general point is evident: the animal’s nature is counteranthropomorphized.

The process of objectification is both similar to and different from the industrial disassembly of animals in slaughterhouses, a highly rationalized technique involving a series of well-defined tasks. Animal processing is an extremely efficient and productive activity that converts animals into meat. To participants, the meaning of the victim in the abattoir is understood clearly as food, and this definition is shared by people outside the slaughterhouse (Bryant and Perkins, 1982). What the animal symbolizes is clearcut and commonsensical. There is also an absence of ritual in the mechanical way that animals are handled and killed in the food industry, except in the case of kosher slaughter (Lesy, 1987). Nothing mediates between the person and the animal. In animal experimentation, however, the symbolism of scientific sacrifice is neither simple nor commonsensical. It is a subculturally unique construct. Moreover, interactions with laboratory animals are mediated by rituals. Nevertheless, the process of converting animals into data does rely on a series of techniques that rationalize the laboratory animal.

Incorporation

Transformation of animals into objects begins long before they enter the laboratory. They are incorporated, as objects, into the general idea of the experiment during the design and funding stages. Proposals to fund animal experiments evoke a conception of animals as objects. For example, on the budget page of NIH grant applications, animals are listed under the category of “supplies.” In the same applications, the animal’s death becomes “nothing more than the final step in the protocol,” according to one respondent. The quantity of animals used must be defended in grant proposals and is arrived at in light of the animals’ transformed state as data. There must be a sufficient number of animals to achieve statistically significant results or to yield a large enough harvest of tissue. The selection of strains or breeds of animals is justified according to their particular function in experiments. Cardiology laboratories, for instance, will order greyhounds for experiments where large amounts of blood are needed.

Selection of species must also be justified in these proposals by choosing an appropriate “model.” The term is used in two ways, both of which objectify the animal and connect it to the results of the experiment. Traditionally, biomedical researchers have used animals in “one-to-one modeling.” This approach views the animals as stand-ins for humans (Walton, 1985) or as biological facsimiles. This perspective is a mediating concept that links animals and humans. It says that animals are close enough to humans to permit scientific generalization but different enough to allow their sacrifice. In short, it suggests that animals have utility for humans and relegates them to a liminal status. But “model” is also used to refer to animals even in the most basic research laboratories. Here, the term comes closer to signifying a tool rather than something that represents the human form.

The existence of laboratory animals is often the direct result of the construction of the protocol, at least in the case of animals bred for experimental
purposes: they exist only because of the experimental needs of science. Mail-order catalogs from animal breeders sit on the shelves of many laboratories. All the relevant information about each type of animal, such as size, uniformity of tissue dimensions, difficulty in handling, or presence of diseases, is listed so that the best selection can be made for each experiment.

Scientists and technicians come to see laboratory animals as having no purpose outside the experiment. The animals are created only to be used. For example, one technician in a physics laboratory saw her rats “as having the sole fate in life of carrying tumors.” Some animals, such as “nude mice,” are specially bred to meet particular experimental needs. A postdoctoral fellow in transplantation remarked on how exciting it was that the strain of mice he was using did not exist in nature but was created genetically only for experimental use.

Deindividualization

The objectification of laboratory animals is facilitated by handling and identifying them as anonymous beings. This process, like incorporation, carefully links the animals to the outcome of the experiment by treating them as data, interchangeable items that can be merged with others and referred to as a group composed of equivalent members. In their final form, animals are only discussed as data or abstract entities. In fact, many medical journals no longer permit articles to have photographs of laboratory animals, although drawings are allowed.

Many experimental animals are handled in large numbers rather than individually. Obviously, this occurs more often when animals “lower” in the phylogenetic scale are used. Smaller animals used in batches take on a group identity. Rodents, for example, have what one respondent called a “corporate identity.” They all look and act alike and are stored in groups. Reflecting this homogenization of appearance, one technician decided to name his rats by giving each cage a name.

All experimental animals are labeled with an identifying code when they are received. An animal may have its own identifying code, or an entire cage may be coded. Codes are clearly displayed outside all cages on an identifying card that carries information on the date of delivery, the principal investigator of the study, the experiment’s number, and the animal’s number. Laboratories that use sheep, cats, dogs, or monkeys may also post a card listing all of their current experimental animals. On one laboratory’s bulletin board, a card read “Dogs, 2–5–85, 1831, 9672, 9570, 1913.” Photographs of animals conspicuously display these codes for identification purposes, as was the case with monkeys in a kidney-transplant study, which were photographed weekly, while under anesthesia, each with a card propped against it showing its identifying code, for example, “M4–85 post-op 18 days.” Data collected on animals are also recorded by means of such code numbers.

These codes are used to refer to the animals and are labels rather than names. This distinction is important: labels are classifications of inanimate objects, as opposed to words used to designate living things. For instance, one technician working with mice was warned to handle a batch of “C3Hs” with great care because they were so difficult to control. As the ascites tumors in the mice were measured, the individual numbers punched in their ears were called out by one technician and recorded by another under their cage classifications. In another case, a technician walked into a laboratory performing a dog experiment and asked, “Who is this dog?” to which another technician replied, “9672 or something like that.”

Further deindividualization occurs by classifying animals, not by code number, but through other means. Animals commonly are referred to by their experimental ownership. These ownership codes often relate to the authorship of future publications. Postdoctoral fellows and principal investigators become the animal’s label. One can hear references to “Ralph’s dog” or “John’s mice.” Sometimes, codes and human ownership are used together, as in the case of “Sue’s B10s.” Animals can also be labeled by their function—“donor monkeys,” “passage mice,” “dog bleeders,” and so on.

Animal codes can be important deindividualizers when the code includes the specific number of an animal, which is the case with larger animals. For example, a sheep may wear a yellow ear
tag marked, say, “624,” and a dog’s USDA number, tattooed on its body, may become its number in the laboratory. Smaller animals may be individually marked with ear punches, tail tags, or pen marks. These individual labels connect the animals directly to their transformed state after sacrifice. As future data, the same code will be used for referencing. Primate number TK12.3 will be identified by this number both during its life and after its sacrifice.

While acute animals are almost never named, they are sometimes given mock names, improvised as a comedic device for the benefit of others. Before anesthetizing a dog, for instance, one technician quipped, “Okay Fido, let’s boogie!” Chronic animals are more likely to be named, but these names are not necessarily endowed with special meaning or even used. Often, these names are casually chosen by animal-care technicians and written on the cages. For example, animal-care technicians in one research site gave names starting with the same letter to all primates that arrived during the same time period as a way of identifying cohorts. The research technicians and postdoctoral fellows who performed the experiments rarely used the names. More than one person has reported that they prefer using a number to a name because it gives them more distance from the animal. Names are most likely to be used by those who spend substantial time with conscious animals and do not need to distance themselves as much as others. This is most common for animal-care technicians, but it is certainly not limited to them.

**Commodification**

Deindividualization facilitates redefinition of the animal’s nature. For those who work directly with laboratory animals, there may be some confusion as to what the object is. No matter how complete the objectification process, people are aware of the animal’s animate nature and seek to create a secular frame around the object in an effort to understand its limited nature. One commonsensical method is to use a framework available in everyday life, namely, the animal as food. Laboratory conversation abounds with food and culinary metaphors to describe the experimental process. One chief technician taught her “recipes” to novices; these were the steps in handling, preparing, sacrificing, harvesting, and processing tissues removed from mice and rats. A postdoctoral fellow talked about the “node soup” that he was making of ground mouse lymph nodes, while another fellow jokingly called the twenty mouse kidneys whirling in the Waring blender “kidney coladas.” After the sacrifice of a dog, one group of technicians noted that the animal’s arteries looked like “ziti.” Another technician was teased as she labored over the measurement of the elasticity of dog arteries: “Betty has finally found her real vocation in life—cooking arteries.”

Familiar kitchen objects also become integrated into the experimental process. Many laboratories had refrigerators, for instance. These were used to store and preserve chemicals, blood products, and tissue, but they also held people’s lunches, six-packs of beer, cottagecheese containers, and yogurt. An occasional technician employed as eating utensils the surgical tools used for experiments. After mice were sacrificed, some laboratories put them in plastic sandwich bags. Small numbers of mice were sometimes transported through buildings in pint-sized ice-cream containers. Mice are also pinned down and sacrificed on wooden cutting boards.

Although not commonly told, there are occasional stories about people who have eaten laboratory animals after their use in experiments. These stories generally focus on pigs and sheep but are certainly not limited to these animals. For example, two technicians in nuclear medicine swapped stories about people in other laboratories who have eaten experimental animals. The first technician spoke about “these guys in New York who were doing skin grafts on pigs. After the experiment, they shot the pig and then ate sausage.” This was told as a true story. A second technician jumped in to tell his story: “When I was in graduate school, we had to take a heart out of a rabbit. Some of the other graduate students took the rabbit away and fried it.” When asked if they had ever seen laboratory animals being eaten, both technicians replied negatively but were vehement in their insistence that the stories were true. Experimental animals were actually eaten in only one of the laboratories studied. In this case, one of the technicians took home several dead
rats after the completion of an experiment, prepared them, and brought them back to the laboratory for people to try as food, arguing that it was a shame to waste such animals if they were safe to eat.

Through their commodification as food, laboratory animals become secular objects that can be used freely because they are infinitely replaceable. This metaphor also reminds people of the transformational nature of sacrifice, whereby the living's shape and identity are changed into a state where they can serve a different function, in this case, as data or experimental components rather than as food. The metaphor directly links laboratory animals to their human use.

While seemingly a profane metaphor, there is a subtle sacred quality to the culinary commodification of laboratory animals. Anthropological research suggests that “affectionate” cannibalism, where the victim ingested is a relative, serves metaphorical functions. Sagan (1974) claims that this form of cannibalism involves emotions of sorrow and affection, as well as the desire to preserve and remember the virtues of the deceased. The remains of the dead relative become symbolic of the affection between the living and the dead; eating them is a sacred act that serves to unite the dead and the living as members of one moral community. For scientists and technicians, the “consumption” of laboratory animals may unite them symbolically with the human community.

Isolation

The sacrificial victim is often separated, at least temporarily, from the community in order to prepare it for sacrifice. During this period, it is readied physically and perhaps even indulged and given limited freedoms. In biomedical research laboratories, NIH guidelines and institutional policy also require that the places where experimental animals are used for research and are sacrificed be separated. For example, NIH regulations state that animals must be returned to caretaking facilities each day and not remain in laboratories overnight. These regulations also specify the proper feeding, housing, medical monitoring, and so on of the animals in the facilities removed from the laboratories. This separation is primarily to ensure the physical health of animals so that they can serve as pure (i.e., infection free, etc.) models for research.

While animals are to be returned to caretaking facilities after experimentation (for care) or sacrifice (for disposal), any experimentation and sacrifice generally does not occur outside the laboratory or other carefully prescribed areas. Animal-care technicians do not like it when research technicians or postdoctoral fellows experiment and sacrifice in their facilities. It is an intrusion into their domain, and the confounding of purposes has qualities of ritual pollution (Douglas, 1966). Research technicians are aware of this but sometimes violate this separation because it is often easier to do the experimental work in the animal facility if the laboratory is far away.

Postdoctoral fellows and technicians take more informal measures to isolate animals from sacrifice. To some extent, this is done to obtain the best experimental results. In one biology laboratory, rats about to be guillotined were kept in an adjoining stockroom so that they could not see or smell the beheadings. This was justified by the principal investigator and technician on the grounds that significant emotive changes in the rats produced by high-frequency distress calls would compromise the data that they were collecting.

Particularly with “higher” animals, many laboratories do not want animals to be brought from the animal facilities until just before an experiment begins. Several laboratories preferred to get their own animals from the facility rather than wait for animal-care technicians to deliver them. Dogs were sometimes anesthetized before leaving the animal facility, partly so that a docile animal could be transported through the institution, but also so that the animal would never be conscious in the laboratory. A laboratory that transported conscious dogs kept them in a private hallway outside the laboratory until moments before an experiment was to get under way. Another laboratory, which had no such hallway, would turn the dogs’ cages to face a wall and sometimes drape surgical sheets over the cages as well.

The very design of many experiments makes it
difficult for laboratory people to spend much time with conscious animals. For instance, in the laboratories examined in this study, the vast majority of experiments on dogs were “acute” studies, for which regulations require that dogs be sacrificed the same day that they are used in an experiment. It is not uncommon for technicians to spend a total of only five minutes with a conscious dog—just long enough to get the dog out of its cage and “put down” (anesthetized). This modest amount of time is devoted almost entirely to work rather than to play or simple observation of the animal.

The division of labor does not distribute contact with conscious animals evenly. Scientists may never see their experimental animals; many principal investigators do not handle animals at all, although a few occasionally may do surgery after the animal has been prepared fully by technicians. Postdoctoral fellows sometimes can elect not to be present in the laboratory when dogs are still conscious. One postdoctoral fellow told me that she could not bear to see conscious dogs in the laboratory because they reminded her of pets. She always managed to be needed elsewhere around the time when dogs were brought into her laboratory. She would return to the laboratory when the dogs were no longer pets from her perspective. Another fellow told me that he “played up” his surgical role so that it was clear that he should not come into the laboratory until the very moment when he was needed to connect monitoring devices to the hearts of dogs already anesthetized, shaved, intubated, and opened. One day, he came into the laboratory when a dog was still awake, tied by a rope leash to the surgical table. He took one look at the dog, mumbled, “Oh God, what will my wife say now!” turned around, and left. Technicians do not have this option.

Research technicians handle conscious animals much more than do principal investigators and most postdoctoral fellows but do not have as much interaction with conscious animals as do animal-care technicians. As a group, these technicians spend the greatest amount of time with conscious animals. This division of labor in terms of isolation from the victim is consistent with ritual sacrifice. Specialized tasks and roles typically exist that separate the victim from those who perform the sacrifice. Others have the job of preparing the victim but do not carry out the sacrifice themselves; these are often the animal-care technicians.

Situational Definition

One of the most powerful methods for objectifying animals is through social definition. Nothing inherent in the animal itself solely determines this definition; rather, strong social norms that define animals as objects exist in laboratories. This can be demonstrated by looking at situations where it is breached and examining the reactions of the participants (McHugh, 1968). People unsocialized in the routines of the laboratory often bring an alternative definition. New technicians, research fellows, visitors, maintenance people, and even passersby may have no prior experience with live experimental animals and so view and act toward laboratory animals as pets.

The simplest way to handle the incursion of an alternative definition is to ignore it or withdraw from it. For example, three dogs were brought into a laboratory one morning and routinely tied with rope leashes to drawer handles or table legs to await anesthetization. The dogs could not be anesthetized, however, until the experiment got under way since they were not meant to stay under anesthesia for very long. Three technicians and two postdoctoral fellows were present; they had no work to do other than to begin the experiment on these three dogs. But since a key person in the experiment was held up and could not be there on time, everyone had to wait for two hours before the experiment could begin. During this time, the group sat in a corner of the laboratory and gossiped, read newspapers, worked on crossword puzzles, planned a golf date, discussed personal computers, and ate breakfast. Absolutely no interest or attention was focused on the three dogs, even though any time someone walked across the laboratory to get something or to leave the room, they would pass one or more of the dogs. At these passings, the dogs would often become very animated and solicit attention by standing up on their hind legs, wagging their tails, trying to make eye contact, approaching the human, or...
even extending their paws. Yet there was no acknowledgment that the dogs were present, verbally or nonverbally, unless there was barking. Then, a plumber came in to fix a leaky pipe. The plumber and one of the fellows stood next to each other as they discussed the problem. One of the dogs playfully jumped up on the fellow’s leg. Although the fellow did not break his conversation and continued addressing the plumber, the latter’s gaze turned to the dog. The plumber started playing with the dog and talked about how it reminded him of his dog at home. The fellow abruptly ended the conversation and returned to his colleagues. The plumber continued to talk to the dog and to play with it as he repaired the pipe. Two definitions existed in the laboratory—dog as object and dog as pet.

Another approach in these circumstances is to remove the animal from the person defining it as a pet. A secretary, for instance, walked past a cage of mice on a cart in the hallway outside of a laboratory. She stopped and looked at the mice, only one of which was awakening from the anesthesia. She waxed for several minutes about how adorable and sweet its features were as it woke, carefully describing how it sniffed the air, how its little eyes were only partially opened, and so on. In the middle of her monologue, a technician whisked the cart into the laboratory, breaking the encounter, even though the mice were not yet needed.

When threats to the definition of the animal as an object come from insiders, sanctions may be imposed to correct the aberrant definition. Sanctions exist that discourage pet-like relationships, and actions are taken to repair or reinforce the definition of the animal as object. The chief technician in an anesthesiology laboratory had to tell one of his postdoctoral fellows to stop naming the sheep because it made it harder for the others to perform their experiments. The same fellow was also reprimanded gently for dressing up one of the sheep with a hat and bringing it popcorn and other special food. In a cardiology laboratory, new people often affectionately petted dogs brought into the laboratory and treated them like pets. At these moments, the chief technician invariably commented on the pet-like encounters in a way that discouraged further interaction. He would say, for example, “He really seems to like you—maybe you should take him home.” If playing continued, he kept repeating versions of the same comment until the targets had to admit that they could not take the dog home. When this point was reached, people would always break their connections to the dogs and resume an object relationship with them. When novices petted sheep in the anesthesiology laboratory, they sometimes were told outright that “they don’t like to be petted,” even when the sheep appeared content.

While animals are defined as objects, machines and equipment in the same laboratory may be anthropomorphized. This is most apparent in laboratories that have developed totally mechanical imitations of animate systems. In a vascular-surgery laboratory, there was an “artificial dog machine” to test synthetic arteries, and, in a cardiology laboratory, there was a “rat apparatus” to test anticlotting medications. In a semihumorous manner, these machines were attributed such emotions as anger, depression, and fear. One of the machines was even given a human name. While personnel in these laboratories acknowledged that their machines were “not the same thing as being in a body,” the machines were extensions, close cousins, to the objectified animals a few feet away, only they were more personified than the animals.

**FROM OBJECT TO PET**

In Beck’s (1981) analysis of sacrificial myth in India, she recounts how one animal victim can be transformed into a docile devotee and set off from others, while other animals of the same species are beheaded and eaten. This transformation involves the passage of the animal from a thing untamed and wild into a mythical creature both dominated and docile. Part animal, since the devotee still has the head of a goat, and part human, the sacrificial process must culminate by linking the victim and the sacrificer. The process seems to provide a symbolic condensate of many central Hindu themes that were disparate prior to this ritual. Such a development is natural and is common to rituals in other cultures as well.

Animal experimentation is one such culture in which sacrificial symbolism relates disparate
themes in a way similar to that found in Beck’s analysis. Pet relationships in laboratories link the object-victim of sacrifice to scientists and technicians. The metamorphosis of experimental animals into pets is as essential to the culture of science as is their transformation into objects. It is more than just problematic objectification that failed or emotional static; rather, it is a necessity that, ultimately, makes this culture possible for the participants.

Scientific necessities cannot completely objectify the laboratory animal. As Tuan (1984) notes, supreme power and control require that animate beings be reduced to an inanimate and mechanical nature. Yet animate nature can never be defeated totally; it still has a will. Objectifying laboratory animals is not only unrealizable; for many, it is psychologically unsatisfying. Objectification of animals, while minimizing the intensity of the feelings produced by sacrifice, creates a secondary problem, in that it makes some people feel as though they are denying part of themselves. One technician, for example, maintained that defining her monkeys as objects was not a satisfactory solution to the emotional problems caused by working with them. Although she suffered less by not treating the monkeys as pets, she felt that she was acting as only half a person when she restricted her interaction with them. She was aware of what she was doing, and that thought troubled her but did not stop her entirely because she was leaving her job in the near future to return to school. Another technician quit her job after only one month because she feared that she would become as “blasé” as others in the laboratory if she remained.

In laboratories, many kinds of human-animal relationships flourish and become the fodder for Bakan’s “ultra-mythicism.” The metamorphosis of animal into pet is the net result of several different types of relationships that develop between humans and animals in laboratory cultures. Any one type of pet relationship may seem insignificant as a symbol; en masse, however, these relationships take on greater meaning. The result is an ultramythical animal different from the animals used in experiments or those that live in the everyday world, yet sharing features of both. While distinctions in these types of pet relationships are made below, they are all very much intertwined and, collectively, attack the central symbol of the animal as object.

There are several ways in which laboratory animals can be converted to pets, but they all lead to a common end: in assuming the status of pet, the target animal is set apart from all others who face certain sacrifice. The laboratory pet is, superficially, an object of affection, but, symbolically, it is often much more. The meaning of a pet in this setting is constructed in the shadow of sacrifice; the animal is chosen or elected to be spared death. The pet is a symbol endowed with meaning because of the omnipresence and inevitability of sacrifice. Two animals of the same species, one designated an object, the other a pet, will be given different moral statuses because of sustained interaction with humans (Tannenbaum and Rowan, 1985) and be treated accordingly. The pet will be treated as a living entity rather than as a container housing tissues; it will be seen to have a unique identity; it will be attributed intelligence and emotion; it will be perceived as having a will; and it will be a source of human pleasure.

The ability to assign different moral statuses to animals of the same species has been observed in other cultures. For example, in his study of the Akwe-Shavante society in Brazil, Maybury-Lewis (1974) notes that a clear distinction is made in how animals are treated when they are used for food rather than as pets. Among the people he studied, the same species of animal could be both food and pet. Those animals reared for food were often seen as dangerous and bad tempered, thus partially justifying their use as a food supply.

**Enshrined Pet**

The most fundamental, although abstract, pet relationship is reflected in the photographs, drawings, cartoons, and other images of animals hung on the walls of laboratories and animal facilities. Technicians themselves often will bring in these things and put them up, but outsiders, too, knowing that technicians are interested in animals, will often supply the iconography. Sometimes, objects, such as animal dolls or elaborate creations relating to animals, are given to technicians as gifts. The transplantation laboratory, for instance, had a
Mickey Mouse balloon hanging above the lab bench, a drawing of a smiling white mouse's face on a lamp shade, several photographs of cats and pandas, and three drawings of rabbits. In addition, on the wall in the hallway outside this laboratory, over fifty photographs of animals in the wild formed a collage covering approximately fifteen square feet. In the adjoining immunology laboratory, there were four photographs of gorillas. In a physics laboratory, there were photographs of gorillas and giraffes. In a vascular-surgery laboratory, there were several animal cartoons, such as Garfield, a photograph of a mandrill and its baby, and a photograph of a DeBrazza monkey. In a nuclear-medicine laboratory, there were several old birthday cards featuring mice and dogs on their covers and a rabbit doll. In a mouse-breeding colony, there were a large colored poster of Mickey Mouse shooting a gun and four cartoon strips featuring mice. A biology laboratory had an amateur painting of a frog, a turtle wind-up toy, and three photographs of lions and zebras. The examples were endless.

These collections often have a shrine like quality to them. The depictions consecrate animals visually by declaring them to be venerated objects: pets in absentia. Laboratory people say that these pictures reflect the general affection and interest that they have in animals, and see no contradiction between such shrines and the sacrifice of animals in the laboratory.

**Liberated Pets**

Liberated pets are those laboratory animals that are “adopted” either by individuals or an entire group and thus evade any use in experiments. Some liberated laboratory animals are taken home; they not only escape the experiment but also the laboratory. For example, of the seven laboratories studied that used dog models, each had had at least one dog liberation within the last two years, several by principal investigators. Far more common are laboratories that adopt one of their experimental animals as a group pet, not using it in an experiment. It is treated as an object of anthropomorphic affection. This relationship can take on many of the characteristics associated with pet relationships in everyday life. Although such animals remain in the laboratory, they are often indulged and showered with substantial attention and interest.

One laboratory, for instance, conducted immunological research on mice, rats, guinea pigs, and primates. One of the guinea pigs was selected randomly as the laboratory mascot and pet. This guinea pig was given a human name in a ritual involving several technicians. After much debate, it was decided to name him after a favorite technician who had been fired. Particularly admired for his intelligence, this guinea pig was taught tricks, including how to open the locked door of his private cage (no other guinea pig had its own cage). Technicians found his behavior to be endearing, especially when his actions seemed human; sometimes, people would be called in from other laboratories to admire these antics. He also was given “toys,” such as balls formed from compressed computer printouts. When the guinea pig caught his leg in the cage and broke it, a troubled laboratory convinced a surgical resident to set the break so that the pet could live; in the vascular-surgery laboratory next door, dog-1891 also broke its leg in a cage accident but was killed. An animal “lower” in the phylogenetic scale, if designated as a pet, will be treated differently from an animal “higher” on the scale but defined as just another laboratory object.

Adoptions occur even though it is a violation of institutional policy to take animals home before or after they are used. It is also a violation of the NIH guide to spare animals so that they may become laboratory pets, and other regulations prohibit the keeping of pets in laboratories. Yet this practice continues, despite frequent reprimands and warnings to laboratories by veterinarians. In several cases, laboratories sought to avoid reprimands by hiding the pet unobtrusively among experimental animals.

The omnipresence of laboratory pets may be due to the functions that they serve. Care and indulgence of laboratory pets provides an avenue to behave toward animals in a manner socially approved in everyday life. This may compensate scientists and technicians for the way that they must treat most experimental animals because there are too many to deal with, because they are not seen for long enough periods,
or because their sacrifice will be a source of emotional pain if the attachment becomes strong. The keeping of laboratory pets may also help to manage the stigma of animal experimentation. Scientists and technicians are aware of the potential social image of their work and deal in different ways with the public’s negative reactions. By keeping pets both at work and at home, they may create a badge of respectability for themselves and others to see.

Among technicians, laboratory pets may serve an additional function, especially when they are liberated. The pets may allow the technicians to affirm and express their emotions toward animals, but keeping pets may also serve to reinterpret the hierarchical classification by which technicians themselves are ranked. It should not seem ironic to find a rat elevated to local stardom, if not godhood, in the same laboratory that objectifies monkeys if one accepts that there can be some degree of group projection by technicians onto the animals that they use. They may identify with their pets and take some comfort in the violation that the pets represent. The reinterpretation of the phylogenetic scale, when the pet is a “lower” animal, symbolically may mock the human pecking order that places technicians near the bottom of the organization.

Saved Pet

Some animals, either before or during an experiment, become “favorites” of individual technicians. Although these pets are scheduled to be sacrificed according to the protocol or laboratory practice, they are pardoned through the actions of their admirers. These animals, like liberated pets, have foiled the irreversibility of sacrifice but not the inevitability of the experiment.

Stories about these animals often become local legends and sometimes are told long after the event took place as part of the oral history of a laboratory. One researcher released approximately twenty mice into a field after completing his study; this story was recounted to newcomers two years after the release. In one case, homes could not be found for the experimental animals that had become pets, because they were monkeys, so the principal investigator let them remain in the laboratory until they died of natural causes. Although this occurrence was related as recent history, no one in the laboratory was certain when it actually took place. One principal investigator told his new technician how, when he was in graduate school, he became attached to ten beagles in a long-term study. He persuaded his principal investigator to spare the beagles at the end of the study and found homes for all but one. This event had occurred fifteen years earlier. While he was telling his story to the technician (who was balking at the performance of her first sacrifice), others in the laboratory rolled their eyes to indicate that the story was not being told for the first time.

An important feature of this type of bond is that technicians and scientists, through special efforts on their part, prevent an animal’s sacrifice. The symbolism of the saved pet is endowed with a certain degree of magic and power because the inevitability of sacrifice is thwarted. Sacrifice is thought of as an irreversible ritual. In the vast majority of experiments, animal death is officially certain. Except for behavioral studies, most medical experiments specify in the protocol that the animal is to be sacrificed.

Sometimes, saving a pet from sacrifice pits technicians against principal investigators. This may involve subverting the protocol or hiding the animal. Fat Cheeks, for instance, was one of several rabbits whose blood was drawn on a regular basis as part of an experiment. After two years of weekly blood drawings, the rabbits normally were sacrificed through exsanguination. Fat Cheeks, however, had become the technicians’ pet. He was given a name, fed apples daily, let out of his cage to run free, and played with and talked about as one would with any pet. As the date of sacrifice approached, the technicians grew apprehensive about Fat Cheeks’ fate. They invented a plan to get around the rabbit’s sacrifice by collecting a sufficiently large quantity of blood from him over several days to give the appearance of having “bled him out.” Over three days of blood drawings, Fat Cheeks was given extra vitamins, fluids, and nutrition “to keep him going.” The plan worked. Fat Cheeks was quietly kept in the animal facility for over a year after his mock sacrifice before being adopted by one of the technicians and taken home.
In the stories about "legendary" animals saved from sacrifice, technicians are not always pitted against principal investigators. Some stories feature both scientists and technicians as heroic actors. A prototypical story took place in a psychology laboratory using primates. One technician in particular was said to have developed a substantial attachment to one of these primates, named Freud. She would take Freud out of his cage almost every day, and the two would "stroll" hand in hand around the animal facility. As the date of Freud's sacrifice approached, the technician became enormously upset. She protested vehemently, but without success, to the principal investigator and the doctoral student responsible for Freud. On the day of Freud's sacrifice, the technician called in sick because she could not face his death. Last-minute efforts by the doctoral student to get the principal investigator to exempt Freud from sacrifice paid off. Freud was not killed and eventually was placed in a local zoo. When this story is told, both the graduate student and the scientist are portrayed, by the end of the story, as empathetic and humane, the technician as steadfast in her determination to fight the inevitable and as allied with the animals against those above her.

Some stories about saved pets focus more on the animal's ability to survive an experiment; the animal becomes legendary for having so closely escaped almost certain death. This reflects the laboratory's collective wish that animals have a chance to elude their sacrificial fate through their own will and stamina and, as a corollary, that laboratory experiments need not always have the same mortal ending.

Best typifying this was a laboratory that conducted kidney transplants on dogs. In theory, if the experimental antirejection drug worked, the dog would live with its new kidney, since there was no specification in the protocol to sacrifice surviving dogs. Technicians in this experiment felt that removing healthy kidneys and administering the antirejection drug were tantamount to sacrificing the animals; the experimental intervention itself was viewed as the mode of sacrifice. And, indeed, virtually every dog died in this experiment.

One dog out of about sixty survived and was adopted by a technician. Two others lived approximately one year in the animal facility before dying. The technicians involved in this experiment frequently reminded themselves and others that animals could survive their studies. Angus, the one survivor, was brought into the laboratory several times a month by his technician owner for a "social visit." The dog was given free rein in the front rooms of the caretaking facility. Whenever Angus was introduced to new people, his unique status was underscored. For example, on her first day in the facility, a new technician saw Angus sitting on the lap of one of the technicians. Another technician who was introducing the group also introduced Angus, saying proudly, "And this is Angus, our survivor!" When technicians told Angus's story, details often focused on how courageous he was to endure the experiment and how much he had been through.

**Martyred Pet**

Martyrs endure suffering and even death in the name of a belief or principle. In the laboratory, martyred "pets" are those animals that are singled out for attachment but do not evade experimentation or sacrifice. At the extreme, this may result in near deification of the animal, and the relationship with it may entail explicit religious symbolism.

One experiment involved study of the physiological effects of a new life-support system in pigs. After the system was installed surgically in a pig, the animal was observed carefully and monitored for about three months. Technicians stayed with the animal twenty-four hours a day and became known as "pig-sitters." Each pig-sitter worked alone for an eight-hour shift with the animal. It was not rare for pig-sitters to work two or even three shifts in a row. They sat at a desk two feet away from the pen in which the pig was kept. Their job was to record such things as the frequency of the pig's urination and defecation, to feed it, to keep the floor and cage clean, and to make sure that the equipment monitoring the pig and running the device worked properly. After three months, the pig was sacrificed for additional data.

Patently, the relationship between pig-sitters...
and their animals was unique; it was unmatched even in the laboratories where domestic animals were used in long-term studies, where pet-like relationships occasionally arise between technicians and animals. Although unique, it only magnifies some of the dynamics of other martyred-pet relationships.

Signs of affection and attachment to the pigs abound in the room. One wall was devoted to Polaroid photographs of the different pigs, some posed with the pig-sitters, others dressed up in hats and sunglasses. One particularly favorite pig appeared in eight photographs, several of which had inscriptions regarding traits such as the pig’s “sex appeal,” “charm,” and “boredom.” On another wall was a poster-sized sheet of paper full of poems about and drawings of the current pig. These wall writings, called “shrouds,” were saved after the pig was sacrificed. One pig-sitter even wrote short stories with one of the pigs as the central character. Sitters, in their writings and talk, often anthropomorphized the animals in great detail. These characterizations were positive, compassionate, and flattering. One of the pig-sitters kept the shrouds under lock and key after one was stolen and another was eaten by one of the pigs.

Pig-sitters and their friends also played with the pigs as a pure form of sociability with the animals. They enjoyed these interactions and believed that the pigs did as well. For example, one pig would push aside with his head any chair placed in front of him. This act delighted the sitters and was one of many “tricks” that demonstrated to them the cleverness of these animals.

All the pigs were named ritualistically. They were given the names of superheroes—the last two were called Batman and Wonder Woman. Although naming the pigs after superheroes was the idea of one of the technicians, several of the pig-sitters then shared in the naming process. It is interesting to speculate as to why superhero names were used. It is possible, to some limited extent, that the pigs were symbolically empowered in several ways through their special names. As superheroes, the pigs would not be bothered by the experiment; instead, they could transcend any physical discomfort because superheroes are, by definition, very strong, if not invincible—they cannot feel pain as do mortals. As superheroes, they could even foil their impending sacrifice. More speculative is the possibility that the use of superhero names established a benign, if not friendly, relationship between pig and sitter. Superheroes are all on our side; they protect us from evil and come to our aid in distress. Of course, superhero names, at another level, may be used ironically: The animals were pigs, after all—hardly the super-heroes of comic-book legend.

It is clear, however, that the superhero names, as well as many of the drawings and poems on the shroud, were a commentary on the contradictions and stresses of the experimental work in which the sitters were involved. The pig-sitters were genuinely fond of their animals but knew that three or four of them would have to perform the sacrifice. The sitters became morbidly preoccupied with the impending day of sacrifice. Every shroud had writings indicating how many days were left. One noted, “another 100 days to go!!! 10–6–86.” But every shroud also expressed a wish that the experiment could have a different ending. On Wonder Woman's shroud, a drawing shows a pig's head on top of a human body wearing a two-piece bathing suit. One arm is raised, as in defiant protest, and coming from the half-human/half-pig's mouth are the words: “We demand an end to dictatorship. We want Paradise Island.” Of course, the sitters knew that there was no hope.

The cost of having a long-term and complex pet relationship with their laboratory animals was too high for most pig-sitters, as it was for most people who performed long-term experiments with animals and formed attachments to them. The sitters had to live with the fact that they had to kill a friend. What made this sacrifice even harder for the sitters was that machete-like knives were used to cut up the pigs, making the sacrifice seem more like a slaughter. Days before a sacrifice, the sitters made increasing numbers of nervous jokes and remarks about “the day.” On the day of Batman’s sacrifice, three or four of the male sitters went to a local bar at lunch and drank heavily. Several six-packs of beer were brought into the laboratory and consumed as the sacrifice and cutting proceeded. People went home early.

After Batman’s sacrifice, people were so troubled, including some who were not at the
sacrifice, that they collectively decided to distance themselves as much as possible with future pigs. Comparison of the shrouds of Batman and Wonder Woman did reveal a difference. Many more of Batman’s poems and stories had him as the central character. On Wonder Woman’s shroud, almost all of the writings used her as a way to express discontent over the conditions of the job—its low pay and long hours. For example, the “Pig-sitters’ anthem” read: “Here I sit, hour after hour, the acrid air is more than sour, but I sit and watch the beast, through family gatherings and feast, dedicated is the word for me, responsible is what I’ll be, I’ll pull time, I’ll take the jive, I’ll keep the goddam grant alive, the money means not much to me, but the work I do makes history.”

The pig-sitters could not distance themselves physically from the animals that they observed and cared for. Although they could try to minimize the pet relationship that they had with the pigs, it was impossible to see the pigs simply as laboratory objects. Sacrifice was clearly a collective trauma; the reactions to it challenged the scientific necessity of sacrifice by calling into question the meaning of animals in laboratory culture. The animals were pets, yet they had to die. From the perspective of the sitters, the sacrifice of their pigs was not an act of scientific necessity. However, it is important to emphasize that, as a general symbol, sacrifice encompasses both scientific and personal necessities, as we see next.

THE SACRIFICE

Symbols serve to make sense of things that seem paradoxical to everyday actors; they “say things” to members of a group about how disparate entities are linked and how one should feel toward these objects (Leach, 1958). Symbols can embody ambivalences and unify them into a whole (Geertz, 1983). Their meaning is ascriptive, revealing the intentions, relevancies, and wishes of those endowing them with significance. Sacrifice is a multireference symbol (Douglas, 1970) that unites the twin nature of laboratory animals as object and pet and joins the scientific and personal necessities of scientists and technicians. Rather than seeing this dual concern as a failure to objectify the animal fully, it is understood more correctly as a reflection of the ambivalence of the sacrificial process. There are scientific necessities to be met by the sacrifice, as well as personal ones. Thus, while the sacrifice is “of animals,” it is “by humans” and, as a process, will reflect their human complexities as members of a scientific community and a commonsensical world.

The symbolism of sacrifice in science expresses themes of traditional sacrifice. According to Hubert and Mauss (1964), sacrifice refers to a conversion of the profane into the sacred through ceremonial destruction and transformation. That which is apprehended as concrete takes on symbolic significance. Douglas (1966) argues that the sacrificial victim mediates between the tribe and divinity, between the visible and the invisible, and is killed for the good of the community, which can live on as a rational order because of the sacrifice. Although sacrifice is thought of as a religious ritual, this need not be the case. Things can become sacred without becoming religious. The sacred encompasses an area larger than the religious by uniting things into a single moral community (Durkheim, 1965).

From the scientist’s and technician’s perspectives, the sacrificial metaphor is not used superficially, even if they cannot always articulate its themes. Although the laboratory animal does not become a religiously sacred object, it is not uncommon for laboratory people to make subtle but sometimes mocking religious reference to their actions. Technicians in one laboratory, for example, described the manner of pinning down mice on cutting boards as the “crucifix position.” While there is no religious transformation, the laboratory animal is converted into a scientifically sacred object.

Scientific Necessities

Selection of animals for experimentation and sacrifice attends to the connection between “pure” victims and the purest results. Scientists and technicians talk about the need to “trust” their animals. This refers to the need to have complete confidence in the data that they obtain. For example,
escaped mice, when caught, can never be trusted and used in an experiment because one cannot be absolutely sure what cage they had occupied. No longer an experimental object useful for sacrifice, escaped mice were sometimes treated as vermin. They symbolized “dirt” and were treated accordingly. In one laboratory, the janitor was called in to “exterminate” these mice. He used traps that caught mice by means of a sticky adhesive that could cause protracted suffering. Other laboratories put captured escaped mice into a separate cage labeled “junk mice.” Another form of “dirt,” these mice could be used by anyone for any purpose ranging from feeding them to pet snakes to practising techniques. Herzog (1988) reports a similar observation, but he does not address how the existence of these labels reaffirms the sacredness of the laboratory animal.

For many people in laboratories, the purity of the animal’s creation is an important feature in easing the work that they must do. The animal is seen as never having known any reality other than a cage in a sterile, unnatural environment. Some laboratory staff feel that the animal is actually fortunate to have been created for an experiment, since the animal otherwise would not have existed. Most people express a preference for purpose-bred dogs rather than pound dogs for a similar reason.

The handling of animals before sacrifice is influenced by scientific necessity. The manner in which animals are handled is thought to be connected to the results of experimental work, and certain people develop reputations for being particularly good at controlling animals or winning their cooperation. Their handling attends to the animals as objects, despite the appearance of interest and affection. Pseudo-pet relationships are those that are experimentally instrumental and occur to soothe the animal into a tractable state. Dogs, for instance, are beguiled into leaving their cages by technicians falsely entreating them to come out and play. As dogs are being anesthetized prior to experimentation and sacrifice, they are spoken to calmly and stroked so that they will not resist or, at worst, bite. This approach approximates a similar attitude toward the results of the experiment; data should be easy to manipulate, rearrange, sort, and analyze.

A proper scientific sacrifice is one where the death enables the animal finally to be linked to the larger purposes of the experiment. It is important that the animal can live on as part of something larger, whether this is in the form of providing tissue to make possible an experiment or in the form of experimental data. Loss of the animal’s individual corporeal form is necessary for the animal to be converted into a truly objective form having no will or physical boundary and allowing absolute control not otherwise attainable.

In terms of scientific necessities, animals must not be sacrificed in ways that jeopardize their experimental value. Most but not all protocols specify the particular method of sacrifice that will realize these ends best. Some degree of skill is required to perform sacrifices correctly to ensure that the tissue or data needed are not lost because of poor technique. Two of the first skills taught to newcomers, especially in laboratories that use mice and rats, are control over the animal and speed in killing. The greater the control over the animal when it is being held, the more effective will be the sacrifice. For instance, if a mouse is not held properly as its head is being inserted into a guillotine, the sacrifice may fail, and its value for the experiment will be lost. In some experiments, there is concern that the sacrifice be of short duration for the purest results. For example, in an immunology laboratory, mice were killed by cervical dislocation for antisera production. Technicians and scientists wanted the best “harvest” in terms of the size of a mouse’s lymph nodes and the number of cells. A poorly executed cervical dislocation might not kill the mouse quickly, causing extensive internal bleeding, which obscures smaller nodes. Other forms of sacrifice also may be chosen for the purest results, since that is the scientific necessity or imperative. For instance, animals sometimes are anesthetized or tranquilized before sacrifice, but there are occasions when this is not done because of the needs of the experiment, even if the animal undergoes significant discomfort during sacrifice as a result. In one laboratory, rabbits were “bled out” by cardiac puncture in order to obtain an important blood product needed for transplant experiments. Despite criticism from the veterinarian, technicians in this laboratory
exsanguinated these rabbits without any tranquilizer or anesthetic because they believed that the most important thing was to collect the largest possible quantity of blood. Tranquilizers or anesthetics would have slowed down the circulatory system and reduced the blood volume that they could retrieve.

Sometimes, animals die before they can be sacrificed. When this happens, they cannot become part of an experiment. Accidents or lack of skill can cause these mistakes, and they are troublesome for those involved. The concern is for the loss of animal tissue or scientific results and for the wasted human effort and expense; the actual loss of the animal’s life is not the issue when the death is seen according to scientific necessity. Such experimentally premature death is disturbing, while death of the same animal, if properly sacrificed, would not be. For example, by the end of one week in the nuclear-medicine laboratory, three dogs had died because of mistakes, and no data could be collected. Tempers flared among technicians, and between technicians and scientists, as they accused one another of the failure to catch and repair a “left arterial line bleed out,” the administration of too much anesthesia, the use of too many intravenous lines, poor computer maintenance, inadequate leadership, and slow surgery. Their rage focused on the “bad data” gathered from each of these three unintentional deaths. As the chief technician bemoaned, “the data was bad, no numbers were valid. The data just wasn’t useful.” When members of this laboratory were asked if they were upset over the loss of the dogs’ lives, their reply was negative; it was the “bad data” that bothered them.

New technicians and postdoctoral fellows are eased into doing their first sacrifice by being encouraged to think of it as a rite of passage. There are several stages in this rite of passage that establish the scientific necessity of sacrifice and socialize the novice into viewing sacrifice as a technique indistinguishable from any other specified in the protocol. First, the ability to sacrifice animals allows the technician or fellow to do his or her own experiments in laboratories that use mice and rats, where it is common for one person to do all the steps of an experiment alone.

Second, new people wonder about questions such as whether the animals die quickly or suffer when they are sacrificed. Such questions presume that animals are animate, sentient creatures, and the minimization of suffering and pain is essential to the objectification of the victim. Beginners are reassured, for example, that the sacrificial mouse does not feel pain when its neck is broken and that spasms after cervical dislocation are mere muscle contractions following death.

Third, new people, especially those who work with smaller animals, invariably kill animals by mistake. At their first lethal mistake, they are usually reminded by those more experienced that it is upsetting to lose an animal before it is intended. In the immunology laboratory, for instance, a postdoctoral fellow was learning how to do splenectomies on mice to collect lymphocytes and spleen cells. This procedure normally would not kill the mice, which were to be used later in a skin-grafting experiment, where they would be sacrificed. However, the fellow killed a mouse by “putting it under too deep” (i.e., giving it excessive anesthesia). Annoyed at himself, he was comforted by a technician who turned to him and observed, “When you kill your first mouse accidentally, it is very upsetting. People have strong reactions. You can hold them the wrong way and kill them. It’s really traumatic. It’s different if you have to kill it on purpose.”

And, finally, completing the rite of passage, learning how to sacrifice animals in order to collect tissue or data separates these people from others. When sacrifice is not consequential, it does not matter who does it or how they do it. For instance, once experiments were completed, dogs were often still alive, although unconscious from the anesthesia. In these cases, the specific mode of sacrifice did not seem to matter, depending more on the ritual practice of the laboratory team and the conscientiousness of the technicians or postdoctoral fellows involved. On several occasions, the technicians balked when asked how dogs in such a situation would be sacrificed. They had not thought about it, and the procedure was not formalized. Often, they would turn off the respirator and assume that death would follow shortly. Some would also increase the intravenous flow of anesthetic, while others would inject “euthanasia drugs.” Usually, a novice technician would flick the switch to turn off the respirator as part of the
cleaning-up stage and disposal of the body. Although a sacrifice in a technical sense, it was certainly not a rite of initiation to do this killing, as it was in the case of sacrifice preceding data or tissue collection. For other species, such as mice, there were still cases, if infrequent, where the animals were thrown out with the garbage while still alive, despite specification in the protocol for their death after use in an experiment. In one instance, a technician in a psychology laboratory who was throwing out trash discovered a dozen live mice inside a bag deposited in a basement dumpster. The manner of the mice’s death was inconsequential because scientific necessity no longer guided their use.

Any veneration of the animal’s body prior to sacrifice is abandoned after tissue and data are collected. As sacred as results become, the remaining body becomes a profane object. The profanity of sacrifice, when it is no longer tied to the experiment, is also a product of situational definition. Aside from indicating the last stage of the protocol, death, to technicians, may represent the end of their work day, the beginning of laborious harvesting of tissues, or the messy disposal of carcasses and cleaning up. Delicacy in performing surgical work is waived, as parts difficult to excise are removed, often by less experienced technicians, with tools and brute force. Cutting the brains out of a rabbit, for instance, requires sharp tools and physical strength. After some animals have been harvested fully for a laboratory’s own experiment, “scavengers” may be allowed to remove additional parts needed in other laboratories, so that extra animals do not have to be purchased and sacrificed. Usually, novice technicians are sent to scavenge; it gives them an opportunity to practice. There is no supervision of their work nor are such steps mentioned in any protocol or institutional review. One laboratory that used many dogs for cardiology experiments was deluged by such requests; sometimes, as many as four different laboratories would remove various parts from the same greyhound, leaving the animal gutted.

The results of the experiment and not the animal per se are sacred. Scientific necessity dictates that the moral status of the animal is elevated after death by the attention focused on those parts of its body that are used for analysis or needed to perpetuate experiments and produce data. The remains and the results of sacrifice become “affectionate” objects. Scientists and technicians use a highly evaluative language to describe the transformed state of laboratory animals. They speak of a “good” carotid artery from a sheep with “hot” (not merely radioactive) platelet adherence to a “very friendly” surface. “He’s great!” refers not to the behavior of dog-1433 but rather to the “most beautiful” radioactive images obtained from the infarcted surface of the dog’s heart. “This dog is dynamite!” reflects enthusiasm not for the animal but for the patterns of small white dots on the computer screen sought for months by researchers in this laboratory.

**Personal Necessities**

The conversion of laboratory animals into objects through the scientific necessities of experimentation is a precarious transformation. In any laboratory, at any moment during sacrifice, personal necessities may intrude and remind all those present of the ambivalence of the act.

Technicians, perhaps less guided by scientific necessity than are scientists, may blanch at their first sacrifices. One technician could not do cervical dislocations on mice with her hand, so she would hold a pencil to the back of the mouse’s neck to avoid direct contact. Some refuse outright to use methods such as cervical dislocation, opting for other methods, such as the “ether bowl,” that are aesthetically easier to perform.

Some technicians object less forthrightly, fearing criticism or the loss of their jobs, and deal with their reluctance to sacrifice by other means. One new technician was assigned the job of sacrificing large numbers of mice and rats in garbage cans. Although she forced herself to do this, she could not continue because of the suffering that she saw in the animals. She cajoled an experienced coworker to do the job for her. Another technician asked for a transfer to the cell-culture laboratory.

The personal necessities of experimentation enjoin people to minimize the suffering of animals precisely because they are killing them. Technicians may develop strategies to minimize
suffering. One technician, concerned about whether fast or slow gassing would be more humane, pursued this question with doctoral-level researchers. Another refused to “pour” large numbers of mice or rats into a single gas chamber, fearing that they would just struggle and die a slow death, and instead placed a fraction of the number into the chamber at one time. One group of animal-care technicians, who refused en masse to perform sacrifices, insisted on being present when they were done to ensure that the animals were comforted and sacrificed as humanely as possible.

Personal necessities may override scientific necessities when a particular animal defies objectification at sacrifice. Sacrifice can represent killing “someone very special,” a “friend,” or a “good companion.” The most intense conflict arises over the killing of particular animals to which attachments have been formed and that have become objects of affection. This was evident in the martyred-pet discussion above. Others have reported similar findings (Carmack and Becker, 1988).

Objectification may also be defied when animals act in ways that unquestionably reveal their animate nature. Conflicted feelings are felt at sacrifices of dogs, for example, when they show evidence of former human ownership as pets. The dog that gives a paw to a technician, has a license around its neck, is pregnant, or sits on command stirs feelings among laboratory staff and disrupts the sacrificial routine. There may be some heads shaken in disbelief, a few words acknowledging the animal’s former status as a pet, and perhaps a comment about wanting to take the dog home. Devereux (1967, 235) cites a somewhat more extreme case:

*They found it particularly distressing to operate on lost pets, who made pathetic efforts to ingratiate themselves with everyone. One kindly physician felt so conscience-stricken for having excised part of a lost pet’s intestines, that he eventually took the dog home and made him his family’s pet.*

Conflicted feelings are also felt during a sacrifice when the animal’s movements or sounds suggest suffering. One technician said that the only time a sacrifice upset her was if she thought that she had hurt the animal. She gave the following example: “I had to sacrifice a dog…put him to sleep. When I did this, he had massive contractions. Air shot out from his mouth. I started crying. I thought I hurt him.” Several respondents reported that rabbit “screams” were unsettling.

Sometimes, it is not the animal’s history as a pet that disturbs the staff and reminds them of its animate nature but rather a “look” on its face. Far from accepting as fact the “dumb animal” of scientific necessity, one laboratory went so far as to call off an experiment when all the technicians were convinced that the dog to be sacrificed “knew what was happening.” The chief technician said that he felt “that this dog really seemed to know what was going to happen to him—there was something in his eyes and behavior—I just couldn’t use him.” Although these situations are more likely to occur with “higher” animals, they by no means are limited to such species. Rodent neonates, for instance, are among the hardest animals for some people to sacrifice because it is so difficult to objectify them.

Sacrifice is a particular problem for newcomers. Part of their emotional socialization is not only to learn the scientific necessities of sacrifice but also to accept that the personal necessities of sacrifice often must be kept in check. Objectification may be difficult for newcomers, but they rapidly see the need for it, at least to some extent, after they experience the distress of sacrificing an animal to which they have formed an attachment. They learn to separate victim from pet, head from heart, and to live with the ambivalence of sacrifice as “just part of the job.” Their socialization teaches them how to put aside empathetic attachment when it is necessary to kill. They learn when to “hold back.” For example, in one laboratory, a technician became attached to several of the monkeys with which she worked. She would spend extra time in the monkey room playing with them and getting to know them. Within several months, she started to find it hard to continue her experimental work because of the relationship that she had established with the monkeys. She could not deal with their sacrifice; allowing herself to interact with them as pets made each death painful. Soon, she restricted her time in the monkey room.
room to work, and she stopped using names to refer to the monkeys.

Finally, objectification of laboratory animals may be defied by what some scientists and technicians feel privately. Many revealed that they take the lead of either the chief technician or the principal investigator in terms of how they approach sacrifice, while maintaining contrary personal feelings. One technician contended that she felt better when she saw her principal investigator show stress through a quiver in the lips while sacrificing an animal. This acknowledged her own reservation and sanctioned the sharing of thoughts and feelings among technicians. In another laboratory, where the chief technician made no such acknowledgment, the same technician found the work experience unsatisfying and bothersome.

**CONCLUSION**

This paper argues that the laboratory animal is transformed into an object and pet. Animals of the same species, and of the same strain or breed, may become a source of data or attachment. If scientifically elevated, the animal’s meaning will be dictated by the general moral order of science. If personally elevated, the animal’s meaning will be derived from everyday life. One is affectionately an object, the other an object of affection.

Like the human cadaver to physicians, the living laboratory animal to scientists and technicians defies easy categorization. Hafferty (1976, 347) maintains that the medical community resolves the ambiguity of the status of the cadaver by not according it a “single, uniform, and unchanging status.” He describes the cadaver as an “ambiguous man,” a biological specimen, yet still human. Results of this study suggest that an “ambiguous animal” exists in experimental settings. This confusion of object and animate images is essential, according to Mauss (1972), for a total, single relationship to be constructed between persons and things involved in rituals of sacrifice.

The ambiguity of the status of the laboratory animal helps to explain why scientists and technicians are not riddled by conflict. Indeed, lay people often are puzzled by and suspicious of researchers who claim that they are compassionate and empathetic toward their laboratory animals. This popular perception stems from the idea, supported by social psychological experiments, that the moral worth of victims must be lowered by the aggressor, otherwise it would be too difficult emotionally to inflict harm (Cialdini et al., 1976; Davis and Jones, 1960; Sykes and Matza, 1957). Yet, contrary to the results of these studies, people in laboratories do not transform their victims into objects deserving injury or into objects that are derogated and disliked. Rather, as we have seen, the victim in science is transformed into a quasi-sacred object as well as a pet.

Although laboratory workers are not necessarily torn by contradiction, results of this study indicate that the personal necessities of animal experimentation entail substantial stress for some, particularly those who sustain long-term and emotional relationships with the animals. Research institutions would do well to address this problem by creating channels for scientists and technicians to express conflicts and concerns. Such outlets may be particularly important as new policies that require more sustained human contact with animals are put into practice. At a minimum, individual laboratories should adopt a moral attitude that sanctions the expression of emotion and condones the human side of scientific work. Rather than ignoring such sentiments and actions or trying to prevent them, they should acknowledge them as a legitimate and inevitable part of experimental practice in science.

**REFERENCES**


Sacrificial Symbolism in Animal Experimentation


