

Sacred Cows  
and  
Golden Geese

*The Human Cost of Experiments  
on Animals*

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CONTINUUM

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basic differences between the physiology of laboratory animals and humans.”

Current estimates place the cost of developing, testing, and marketing each new drug at between 150 and 349 million dollars, the latter figure according to a 1993 report by the Congressional Office of Technology Assessment.<sup>116</sup> The drug companies pass the costs along to the patients and our insurance companies. Drugs are so outrageously expensive in the United States that the elderly and poor cannot afford them. In view of these staggering costs, measures should be taken to insure that only cost-effective and accurate tests are conducted. Not until the Congress and the FDA changes the way medications are evaluated prior to releasing the drug will tragedies stop and valuable therapies, previously withheld, reach the needy expeditiously.

More extensive preclinical testing on human tissue, more extensive clinical trials, and mandatory postmarketing drug surveillance would offer the general public much safer medications. These changes are long overdue and absolutely vital!

The only truly accurate knowledge about the positive and negative effects of medications on humans is acquired through *in vitro* testing, computer modeling, epidemiology, clinical observation, and autopsy of humans. Today's technology makes observations of compounds on human systems more and more easy. Nonetheless, animal testing persists. We explore why in the next chapter.

## chapter 5

### White Coat Welfare

Whenever people say, “We mustn't be sentimental,” you can take it they are about to do something cruel. And if they add, “We must be realistic,” they mean they are going to make money out of it.

—Brigid Brophy, British novelist and essayist in  
*Animals, Men and Morals*

There are, in fact, only two categories of doctors and scientists who are not opposed to vivisection: those who don't know enough about it, and those who make money from it.

—Dr. Werner Hartinger, M.D., German surgeon, 1989

**T**oday's medical research establishment has assumed a life of its own. Segmented but interconnected, it has tentacles extending into every aspect of our lives. Composed of researchers, medical associations, pharmaceutical companies, purveyors of research equipment, government agencies, publishers, lobbyists, and public relations companies, its aspects are sometimes good, sometimes bad, and frequently entirely neutral, *except for their cost.*

Gertrude Belle Elion was a Nobel laureate scientist, an esteemed figure in the medical research establishment. Now deceased, Elion used to insist that all her research be applicable, and she demanded the same of her peers. Elion time and again asked, “If we carry out these experiments, how will we use the information generated, and where will this lead us?”<sup>117</sup> Far too few scientists share Elion's stipulation, particularly in regard to animal experimentation. Their cavalier disregard for accountability corrupts the Hippocratic obligation to save lives and nurture health.

We have described how the predilection for animal experiments gathered steam and became law, and how the animal-model protocol pro-

fects drug companies and the government from liability in the event of unforeseen side effects or deaths from medical innovation. In addition, other businesses and the government also use animal experiments to prove or disprove claims against them.

Even though animal experimentation is now used to prop up questionable commerce for many contingencies, its ineptitude has never been a secret. Knowledgeable scientists and industry business people have always known that many animal tests are performed strictly because of the legal system. Even by 1964, Dr. James G. Gallagher, Director of Medical Research, Lederle Laboratories, stated,

Another basic problem which we share as a result of the regulations and the things that prompted them is an *unscientific* preoccupation with animal studies. *Animal studies are done for legal reasons and not for scientific reasons. The predictive value of such studies for man is often meaningless—which means our research may be meaningless.*<sup>2</sup> (Emphasis added.)

Top personnel at leading pharmaceutical companies knew animal data was meaningless as long ago as 1964. Nonetheless, despite widely held doubt that animal testing provides any assurances whatsoever, no one has ever been eager nor even willing to give up this legal safe harbor.

This chapter examines the tightly knitted machinations that sustain animal-modeled medical research despite this meaninglessness. The rest of this book documents the deception, but here we explain just how medical research turned into this colossal, intransigent, and often corrupt force. By providing insight into the agendas that propel scientists, institutions, business, and government, we hope to illuminate possible justifications for their refusal to reform.

One only has to follow the money.

### The Engine of Higher Education

Our ivory-towered research institutions are sacrosanct. Most Americans are idealistic about scientists in laboratory settings, picturing purists doggedly pursuing “true knowledge” in their respective fields. No one seems as respect-worthy as these disciplined white-smocked savants. Surely they must be impervious to mundane concerns such as money and prestige.

Well, scientists too have mortgages and children and dreams. Scientists are just like the rest of us, materialistic and opportunistic. They, too, struggle to survive and excel in a competitive world. As Irwin Bross, PhD, former Director of Biostatistics at the Roswell Park Memorial Institute for Cancer Research, put it: “They may claim to love truth, but

when it is a matter of truth versus dollars, they love the dollars more . . . Money talks.”<sup>3</sup>

Rivalry for research dollars is fierce. Less than fifteen percent of all medical grant applications are funded. So, replace your image of altruistic savants with one of PhDs rattling their beakers while panhandling for grants. You will be far closer to the truth. Researchers who do not crank out papers with great regularity find themselves not only untenured but also unemployed. “Publish or perish” may be a cliché. But it is the pivotal admonition in academia.

With the threat of perishing omnipresent, people tend to choose the path of least resistance. And what is the easiest and fastest way to produce and publish papers in medical science? Animal experimentation. It is a time-honored convention. Laws require animal tests. Government agencies and charities fund them. They generate, if not applicable results, at least results. Scientific journals are fully receptive to publishing the results. Publishing leads to promotions, and more grant money. And quantity of experimentation wins over quality every time. The cynic who quipped, “the rat is an animal which when injected, produces a paper” was on target.

First, animal experimentation is tidy. The lovely thing about rats is that you can go home on Friday night and rest assured that they will still be in their cages when you get back on Monday. On the other hand, clinical research on humans can be tricky, or as Judith Vaitukaitis said in *Clinical Research*, “Nothing is more demanding, more difficult, more frustrating, more time-consuming, and requires more creativity than clinical research.”<sup>4</sup>

Clinicians have no control over their subjects, who may not return for follow-up appointments nor follow instructions. Human subjects may even be dishonest about their lifestyles. You can addict monkeys to crack cocaine or heroin in your nice clean lab. If you want to study human crack or heroin addicts, you may have to interact with potentially nasty and even dangerous people.

In 1998, a National Institutes of Health panel noted with alarm declining numbers of clinical research grant recipients. It attributed this decline to several factors—the long timeframe required by many studies, the complexity of working with human subjects and the difficulties of involving and crediting multiple investigators.

Not only easier, animal experiments are also much quicker than human studies. A rat’s generation time is weeks, not decades. By the time a clinician publishes one good paper, an animal experimenter can publish at least five. The easiest way to publish is to take a concept already published and change something, the type of animal used, the dose of the drug, the method of assessing the results, or some other variable. This way, the concept has already been milled and all the researcher has to do is follow the template with new grist.

Neal Barnard, MD, president of the Physicians Committee for Responsible Medicine, once likened animal experimentation to a man searching for his lost keys. After losing the keys on a street without a street light, the man searched there for awhile, but did not find them. He then moved over to the next street, because it had a street light. He found the searching much easier on that street because of the light. Of course, he did not find his keys on that street because he did not lose them there. But it certainly was easier to look. Such is the case with animal experimentation. It is easier than studying humans, but it does not work. The real strides in medicine have not come from the animal laboratory but from clinical research, and other non-animal methods.

Losers seeking keys notwithstanding, at its very core, the education process itself perpetuates animal experimentation. Early on, every student in America is inculcated with the notion that animal models count. Basic science researchers write basic science textbooks for high school, college, and graduate students. Clinicians, who are absorbed in human study, do not. Most of these same researchers are performing experiments on animals; indeed that is how they earn their livelihood. From frogs and fetal pigs forward, all American students are exposed only to the one perspective, and the animal experimenters themselves make more money from writing the textbooks.

Not until later in medical school do textbooks written by clinicians appear. These delineate the actual nuts and bolts of human care—how to treat illness, perform surgery, administer anesthesia, read MRI scans, and so forth. These books contain very little if any, animal data. But by the time the clinical books are in front of them, medical students are too busy absorbing and mastering complex data and procedures to notice, much less question, the largely nonintersecting trajectories of animal and human diagnosis and treatments.

Most medical education is rote memorization. Original thinking is neither required nor welcomed when exhibited. Those who question procedures routinely hear “that’s how we do it here.” In the early part of the twentieth century, Dr. Walter Hadwen summed up the “inside the box” thinking that still persists:

No medical man during his student days is taught to think. He is expected to assimilate the thoughts of others and to bow to authority. Throughout the whole of his medical career he must accept the current medical fashions of the day or suffer the loss of prestige and place.<sup>5</sup>

Acceptance is just part of the picture. Participation is the other half, as Dr. E. J. H. Moore concurs, “The pressure on young doctors to publish and the availability of laboratory animals have made professional advancement the main reason for doing animal experiments.”

As in most professions, science and medicine do not turn on ingenuity. They are about toeing the line.

Beyond physicians, who may be just too busy to appreciate the lack of connection between basic science instruction and the careers they have undertaken, science majors who go into research have persuasive reasons for overlooking the deception. They are repeatedly reminded who butters their bread, even from the beginning. Graduate students in science fields such as physiology, pharmacology, and psychology learn animal experimentation techniques—and although doing grunt work—get their name on a few of their professors’ articles. When they themselves apply for a grant in their new job, they simply rearrange a few details of their previous research and give it a new slant that corresponds to whatever medical concerns are presently pressing enough to fund. As Dr. Julius Hackethal stated, “Today I abhor animal experiments. But there was a time when I performed them, simply because I wanted to become a professor.”<sup>6</sup>

In days of yore, most scientists did not expect to get rich from their work. They were smart, curious people who wanted to make a contribution to society. Today is different. Frank Solomon, a biology professor at MIT, commented,

Good young people and good older people are going without funding, and it creates an environment which is amenable to all sorts of corner-cutting . . . For example, no one ever thought that you could get rich doing biology, and now I am the only biology professor without a Saab . . . The whole tempo has changed. It is possible to become quite well-known doing biology. And our students learn those lessons quickly.<sup>7</sup>

At a conference dedicated to exploring the value of animal experiments in the field of carcinogen testing, Dr. Frederick Coulston of Albany Medical College, noting the absence of reporters, asked for candid views on the relevance of animal-derived data to humans. Coulston himself expressed skepticism and his colleague Dr. Philippe Shubik of the University of Nebraska agreed, stating, “Clearly, right now our animal models are totally and absolutely inadequate to answer all the obvious questions before us.” In another quote from the conference proceedings, Dr. William M. Upholt concurred that “extrapolation [from animals to humans] is unscientific.”<sup>8</sup>

As noted, researchers are carried forward, both in terms of promotion and in terms of funding, by the number of articles they publish. Not the *value* of research, just the *number*. That in and of itself explains the large amount of garbage in the literature. Many academics list greater than a hundred articles on their *curriculum vitae*. Rest assured, professionals spew out articles to get through their certification process or

promoted, not for the sheer thrill of sharing new discoveries. Dr. Edward H. Ahrens, prominent in the field of medicine for decades, wrote in *The Crisis in Clinical Research* in 1992, "The most research-intensive schools employ only one yardstick for measuring the contributions of the entire staff: the number of articles reporting research results. Clearly this is an inappropriate yardstick."<sup>9</sup>

Researchers are paid, but whether or not the knowledge is worth paying for is another question entirely. Their animal study will have no application to humans, but they did not say it would. They only said it would "advance knowledge," not the type of knowledge that will cure or curb disease. Researchers have admitted that most research is of no importance. "Most research is trivial and never cited anyway."<sup>10</sup> So why do it? Because, as Dr. Philippe Shubik put it at the aforementioned conference, "The chief objective here is to keep us all employed."<sup>11</sup>

As the caveat "publish or perish" propels animal experimenters, it also keeps hordes of scientific journals in print. Consider this: In 1665, the first journal devoted to science was founded. Even by 1880, the number of such journals was only 100. In a mere twenty years, by 1900, the number had risen to 10,000 and today there are approximately 100,000. Granted, knowledge has increased in the last 100 years but not enough to constitute this exponential rise in journals.

There are simple reasons for this. If journals were limited in number, then only the important papers would be published. Researchers want tenure, and need to publish to get it. Fewer journals mean more rejected articles. So researchers have demanded that more journals be started, often times with colleagues as editors. It is the "I scratch your back . . ." routine.

A proliferation of journals has diluted even good journals with mediocre or poor articles. Perhaps the most influential critic of the "publish anything" practice has been the deputy editor of the *Journal of the American Medical Association*, Dr. Drummond Rennie. He wrote, "There seems to be no study too fragmented, no hypothesis too trivial . . . no design too warped . . . no methodology too bungled . . . no conclusions too trifling . . . for a paper to end up in print."<sup>12</sup>

Yet, it is nearly impossible for those against the animal model to publish their views in the scientific literature. The editors and scientists who review articles for publication are usually animal experimenters themselves. They have earned a reputation and tenure because they perpetuate the mass delusion. They will do anything to prevent the lack of basis in their research from being exposed. Moreover, many medical journals rely on advertising dollars from pharmaceutical companies and others that make products for experiments on animals.

Recently *Scientific American* (February 1997), a magazine that circulates among scientists as well as nonscientists, published "Animal Research: Wasteful and Misleading," an article by Neal Barnard and

Stephen Kaufman describing the anti-animal experimentation position. This piece brought an avalanche of criticism from subscribers and other science publications such as *The Scientist* and *HMS Beagle*. It struck a nerve.

We should add, though, that there are many excellent journals of clinical medicine, such as *New England Journal of Medicine* and the *Journal of the American Medical Association*, devoted mainly to describing research achievements made on human models. Nevertheless, they are in the minority. The vast majority of scientific journals purporting to advance medical science are predisposed to animal experimentation.

### Stoking the Engine

As the animal experimentation status quo is, everyone profits. Money drives education. Money drives research. Money drives industry. Money drives the media. Hence, money is the reason that animal experimentation exists. Whose money is this?

Yours.

We Americans foot the bill for animal experimentation every time we buy a drug, every time we pay our insurance premiums, every time we visit a physician or a hospital or a clinic. We pay exorbitantly. More about these ancillary expenses in a few pages. For now, let us discuss our abundant support of animal models through tax dollars and charitable donations.

The largest single provider of funds to medical research institutions in America is the National Institutes of Health (NIH), located outside Washington DC. It grants approximately one-third of the medical research money in the United States, doling out billions of taxpayer dollars each year. The NIH goal, according to a government publication is:

to improve the health of our nation by increasing the understanding of processes underlying human health, disability, and disease, advancing knowledge concerning the health effects of interactions between man and the environment, and developing and improving methods of preventing, detecting, diagnosing, and treating disease.<sup>13</sup>

Put more simply, the NIH mission is to do and fund research that will prevent, diagnose and treat disease.

The most frequent NIH grant is for so-called R01 research projects. These are "investigator-initiated," meaning a primary scientist steers the request for funding. Dr. Ahrens' book explains R01 grant allocations:

No matter how many extramural scientists and other personnel are paid on any one NIH grant, there is only one PI [primary investi-

gator] per grant; and all transfers of funds are made not to PIs personally, but to the *institutions in which they are employed*. All NIH awards consist of direct cost allowances for salaries, permanent equipment, supplies, travel, and publication costs, but also of indirect cost allowances for administration, energy, security, library, and custodial services. Thus, direct costs support the research institution of the PI, while indirect costs are paid to meet the overhead costs of the institution in which the PI works.<sup>14</sup> (Emphasis added.)

So, the traditional R01 grant supports the researcher and the university or institution where he or she works. Universities and institutions are grant guzzlers. Over the last several decades, the cost of electricity, water, security, administrative services, and so on, has risen to more than the amount needed to actually do the research. In some cases the institution receives more money from the grant than the researcher.<sup>15</sup> One can understand why acquisitive institutions frown on rogue researchers who speak out against the tried and true cash cows of animal experimentation. They are usually encouraged to quiet down and are sometimes even dismissed.<sup>16-19</sup>

Donald Barnes, an Air Force researcher, was fired, as have been many others, after speaking out on the futility of animal experimentation. He likens the process of learning to perform animal experiments in graduate school to brainwashing:

When I first left the laboratory, I remained skeptical, stating 'there are some good experiments to be sure, but the majority are worthless,' or words to that effect. Now after years of looking for those 'good' experiments, I have long since concluded that they do not exist. But I had to do the looking for myself. I was simply too conditioned to the 'Party Line' to accept anyone's word for this.<sup>20</sup>

It should be noted that *any* grant adds money to the university budget. Hence, universities often overlook unethical research. A 1991 federal Office of Technical Assessment (OTA) report reinforced this fact by stating:

Since most overhead is brought into the university by a small number of research professors (at Stanford, five percent of the faculty bring in over one-half of the indirect cost dollars), proposals to reduce research output are not looked on with favor by many university administrators.<sup>21</sup>

Even when universities fund beginning researchers with a starter grant out of the university budget it is an investment. The money they give the researcher will come back one hundred times in grant money, alumni

donations, and support from pharmaceutical companies if the researcher is at all talented at playing the game.

Before identifying where grants go, it is important to recall our terminology. Remember, a clinical investigator or researcher is a scientist who studies disease and therapies in humans. In 1979, Dr. Wyngaarden, director of the NIH, called clinical investigators an "endangered species."<sup>22</sup> And he was not kidding. Between 1977 and 1987, only 7.4 percent of the NIH's R01 funding went to basic patient-oriented research.<sup>23</sup> The largest percentage of awards went to animal experimentation. In other words, in that decade Americans funded more grants for sick lab animals than for sick humans.

Two reports, straight from the federal government, document the fact that the NIH under-funds patient-oriented clinical research.<sup>24,25</sup> In other words, the NIH intentionally selects for applications that do not include clinical research. Consider the following: "Only one-third of NIH competing research grant applications include *human* subjects."<sup>26</sup> (Emphasis added.)

Naturally, if you are a researcher and only have a one-in-nine chance of acquiring funding, and the funding institution nurtures a fifty percent or greater favoritism toward animal-based studies, and you need that funding so you can keep your job, pay your mortgage, and so on, would you not get busy with lab animals? Congressman Thomas Bliley stated, "It appears that the [medical establishment] system has changed from one of NIH giving grants for scientific research to one of scientific research being done solely to get NIH grants."<sup>27</sup>

In his book, Ahrens does not hesitate to expose the holes in NIH decision making,

By far the largest percentage of NIH support for new R01's . . . is awarded to applicants for studies of animal models of human disease. Yet, most experienced investigators realize that animal models of arteriosclerosis, diabetes, hypertension, and cancer are different in important ways from the human condition they are intended to simulate.<sup>28</sup>

Later in our book, we explain why animals do not get heart disease, and why cancer, diabetes, and other illnesses are not the same from species to species. For now, simply recognize the bias on NIH's part and on the part of researchers and institutions. Throwing money around like this would seem merely capricious if we could already cure the lethal diseases of our time. But we cannot, so it is scandalous.

To its most established researchers, the NIH gives "MERIT" awards. In 1987, only 7.5 percent of the NIH's MERIT awards were patient-oriented basic science research. Only 2.5 percent went to fund research on humans to study disease management. Thus, a vast majority of re-

search was not patient-oriented. If these "top guns" are performing primarily non-clinical research, what does that say about priorities? Studies from the same time period also revealed that more researchers were focusing on animal models of human disease than on humans themselves. We already know that researchers do not really believe we are more like animals than humans; they are just profiting from the convention.

The NIH's predilection for funding non-clinical research is not a new trend.<sup>29</sup> Nor is it necessarily a diminishing trend. According to "Models for Biomedical Research," a report from the Committee on Models for Biomedical Research, *scientists conducting research via animal experimentation received greater than fifty percent of all grant dollars from 1977 to 1983*.<sup>30</sup> From 1988 to 1992, the NIH again gave greater than fifty percent of your money to fund research on animals. The greater than fifty percent figure seems constant from year to year. It is difficult to determine exactly how much greater than fifty percent the actual number is. It could be 51 percent or it could be 85 percent.

In 1986, the president of the Institute of Medicine cautioned that medical research was leaning too heavily on basic animal experiments and not enough toward clinical observation.<sup>31</sup> He called it an "emperor has no clothes" scenario, meaning that no one among the powers could declaim animal experimentation for fear of jeopardizing their own power base.

According to an Institute of Medicine survey, the National Institutes of Health gave only fifteen to seventeen percent of total grant money in 1990 and 1991 to research that could be regarded as human clinical research. That this included research with human cells and tissues, from which so much can be gleaned, is disheartening indeed. Furthermore, only 4.5 percent of grants given the 1990–1991 year went to lab research involving humans. This means, again, that NIH-funded research on animals hugely outdistanced human clinical research.<sup>32</sup>

In 1992, the public, via the NIH, funded approximately \$12 billion in grants, a majority of which went to non-human research.<sup>33</sup> In 1993, the National Cancer Advisory Board declared that clinical research was in "crisis."<sup>34</sup> The next year the National Cancer Institute (NCI), a division of NIH, allocated only one percent of its total R01 funds to clinical research. Only one percent!<sup>35</sup> If they thought it was in crisis, why did they not fund more?

Although the largest, the NIH is not the only government agency funding grants. So that fifty percent of \$12 billion or greater is just a piece of total money exchanged in the animal experimentation industry. Fifteen other government agencies, such as the Department of Defense, also dole out taxpayer money. Together, these fifteen agencies represent approximately twelve percent of all research dollars in the United States. So we can ratchet up that six to eleven billion.

These figures do not include the money spent by private industry to test new medications, therapies, or other products on animals prior to testing them on humans. Americans pay those costs when we purchase them. Nor does this figure include dollars donated to charities that finance animal experimentation. Factor in these expenses along with the sums that the largest government institution representing your interests dispenses to animal studies.<sup>36</sup> Rat-injecting and other lab animal considerations are a colossal enterprise.

What is the process that keeps this enterprise turning? Normally, a scientist will submit a grant proposal to the NIH or other granting institution. A supposedly unbiased board of reviewers then weighs the proposal's merit.<sup>37</sup> Review panels are composed of researchers from universities, pharmaceutical companies, and other institutions. These people are experts; but they also tend to scratch each other's backs as well as the backs of junior scientists who perpetuate research that they themselves began. According to one congressman, the peer review process is "an old boys' system where program managers rely on trusted friends in the academic community to review their proposals. These friends recommend their friends as reviewers . . . It is an incestuous 'buddy system' . . ."<sup>38</sup>

Everyone is playing the same game. *Don't you veto my project, because then I will be obliged to veto yours. Then the university will fire both of us because it will lose the grant money.* The relationship between researchers and peer review committees is entirely symbiotic.

Grant getting is very competitive. As the OTA stated in the 1991 report,

There will always be more opportunities than can be funded, more researchers competing than can be sustained, and more institutions seeking to expand than the prime sponsor—the Federal Government—can fund.<sup>39</sup>

As mentioned, only around fifteen percent of all grant applications are funded. So, for every application funded, approximately eight were turned down. That's competition.

Our federal government should, of course, base its allocations on the likelihood of their leading to concrete results in eradicating disease. Since so few projects are funded, would you not hope that those most likely to benefit humankind would get the highest priority?

Agencies like the NIH should take their cue from respected scientists such as Ahrens, who wrote,

I have gained irrefutable evidence that the study of whole humans is indeed languishing today. But, in addition, that evidence is

strongly persuasive that this kind of research is absolutely essential in furthering the study of human health and disease.<sup>40</sup>

But they do not.

Eradicating disease may be way down the list of the NIH's reasons for being. As the studies in our book will often indicate, sixty to ninety percent of all disease is preventable. Even the Centers for Disease Control and Prevention states that seventy percent of premature deaths are due to lifestyle and environmental factors.<sup>41</sup> Yet, only a very small fraction of the NIH grant money goes to funding preventive medicine, education, and implementing programs that really make a difference.<sup>42,43,44</sup> Could this be because prevention does not keep the economic engine chugging along? It does not employ scientists, nor push scientific frontiers, nor justify research institutions. It just points people toward health.

Few scientists stop to reflect whether consumers are getting their money's worth as long as they themselves are making money. Those who do speak out at their own risk. Still, a rebellious few insist that human lives have been lost needlessly through the delays in treatment and from fallacious results of animal studies.<sup>45-50</sup>

Their peers and the supposedly neutral scientific and medical associations are nearby to squelch their objections, as is the lobbyist machine which we will explain momentarily.<sup>51-55</sup> Information in support of the animal model from the American Medical Association, Stanford University, and the American Veterinary Medical Association—America's most august medical institutions—goes a long way in overturning any dissent.

However, look more carefully at these respected institutions and the professionals within them. Those who decide whether animal lab experiments are meaningful make their livings, directly or indirectly, from the animal lab. Their reliance on the animal experimentation convention has them all but on the dole, hence their enthusiasm for attributing all major medical progress to our furry friends. Crediting our medical acumen to the animal model supports their facade.

This facade cannot suffer any chinks; therefore, they will even resort to the "knowledge for knowledge's sake" rationale. This basic research defense is really the last refuge of the mad scientist. Especially in the field of medicine. We throw inordinate amounts of money at health-care research each year. Yet, millions of people continue to grow feeble and die from diseases that only vaguely resemble those conditions conjured then cured in compromised animals.

If it were true that animals mime human beings, the animal experimentation industry would have numerous examples of the cures the animal model has wrought, or at least an accurate accounting of what our dollars have purchased. As the data in this book will prove, there are few, if any, real examples. And, unfortunately, since so many institutions

and researchers and pharmaceutical companies are profiting so immensely, accountability is a non-issue.

### In the Grip of Big Business

An idea with as many holes in it as that of using animals for human medical research requires ceaseless vigilance to keep afloat. Realizing this, one of the largest lab animal-breeding facilities in the world, Charles River Laboratories, formed the Association of Biomedical Research to lobby for animal experimenters in 1979. The multinational optics manufacturer, Bausch and Lomb, who purchased Charles River Laboratories in 1984, now controls the lobbying group. (A July 26, 1999 press release stated that Bausch and Lomb was selling Charles River to Global Health Care Partners.) In 1985, the Association of Biomedical Research pooled resources and merged with the National Society of Medical Research, an organization formed after World War II to promote the animal model. This union resulted in a leviathan political lobbying organization, the National Association of Biomedical Research (NABR), complete with an educational arm called the Foundation for Biomedical Research.

NABR claims over 500 members, all corporations and organizations using lab animals, with annual dues ranging from \$500 to \$12,000. The president of NABR, Frankie Trull, also works independently as a lobbyist, through Policy Directions, Inc., for several companies that sell or use lab animals. These include Charles River Laboratories, Athena Neurosciences, Carnation Nutritional products, Gynecare Inc., and the State University of New York at Albany.

NABR newsletters feature stories about how to controvert the facts we present in this book. Truth is not on their agenda; money is. We invite you to read their claims as published in books like *Animal Research and Human Health*. Examine these against the medical literature we quote and see which is accurate and which is fabrication of data.

The NABR's educational division, the Foundation for Biomedical Research, is a slick PR operation with a penchant for emotional appeal, distortion and prevarication. The unwitting onlooker is easily captivated by their advertisements.

The propaganda machine kept in spin by Foundation for Biomedical Research and other vested organizations and lobbying groups is fierce. All devote as much energy as required to parry those scientists who speak out against animal experimentation. It takes little more than a flick from highly respected institutions such as the AMA or Stanford to discredit these brave few, and no one ever stops to ponder that the plethora of AMA members and Stanford personnel depend, directly or indirectly, on animal experimentation for their very existence.

Vivisectionists waggle all sorts of falsehoods to rally support around their nugatory science. Their propaganda is often just sheer fluff. For instance, Foundation for Biomedical Research produced an ad featuring animal rights protesters with the caption, "Thanks to animal research, they'll be able to protest 20.8 years longer." It is not animal experimentation that has increased life spans. It is sanitation, clean water, decreased poverty, and sound science. Unfortunately, the viewing public does not pause to think claims through to this extent.

One of our favorites is lobbyists' claim that Nazis experimented on Jews because it was illegal to experiment on animals. This assertion would have impressed even the Nazis. As we know, Nazis were masters of propaganda. They frequently stated absolute falsehoods. As the animal experimenter says he cares deeply for the animals he experiments on, Hitler's protégé Eichman said he had many Jewish friends.<sup>56</sup> True, Nazi law forbade animal experiments unless they were "needed."<sup>57</sup> But a perusal of *Pfugers Archiv für die Gesamte Physiologie*, a major science journal of the time, reveals that animal experiments thrived under Nazi leadership. The laws regulating animal experimentation were equivalent to those in England at the time. Nazi Germany records substantiate this. If anything, experimentation on animals led to the Nazis' experimentation on Jews and others.<sup>58-62</sup>

Then there are the skewed studies. Nowhere is the bias for animal experimentation more evident than the Comroe Dripps Report of 1976.<sup>63</sup> This report, touted as disclosing the top ten research contributions to the fields of cardiac and pulmonary medicine from 1945 to 1975, was hoisted as evidence of animal experimentation's merits. Its partiality was so evident that many immediately declared it unscientific.<sup>64</sup>

Drs. Comroe and Dripps were animal testing enthusiasts. They had criticized President Johnson's administration for coming out in favor of clinical, not basic (meaning animal) research. They also criticized the first heart transplant surgeons for failing to publicly state that the operation was only possible secondary to animal experiments.<sup>65</sup>

That heart transplants relied on animal experiments was blatantly false, as you will read in Chapter 9 on cardiovascular disease. There was no mention of the animal model, because it was not true. Many scientists have stressed the clinical discoveries that made the operation possible. Comroe had also written a critique of medical progress stating that all major discoveries had been a result of basic research involving animals.<sup>66,67</sup>

The pair surveyed the "scientific community" to determine which discoveries were important. They sent approximately half of the surveys to scientists performing basic science experiments on animals. Not surprisingly, these scientists concluded that basic science animal studies had been invaluable.<sup>68,69,70</sup> As the assistant editor of the *British Medical Jour-*

*nal* pointed out, the report entirely left out the clinical discovery of the effects of smoking on heart and lung disease, though this link was the "most important therapeutic maneuver for most doctors treating lung and heart disorders." (Emphasis added.)

The Comroe Dripps Report, cited by the animal experimentation lobbyists, was and still is criticized by numerous scientists and clinicians for faults of methodology and bias.

Nonetheless, for the most part, lobbyist efforts such as these pay off. The very government agencies designed to protect citizen health and finances churn out support for their bad grant funding and keep up the deception in the form of policy and propaganda. A U.S. Department of Health and Human Services document called *Animal Research: The Search for Life-Saving Answers* states, "Throughout the last century, medical scientists have depended upon the use of animals for the development of virtually all vaccines, medications, and treatments."

It is easy to get swept up in this message and overlook the way it manipulates the facts. Yes, virtually all medical scientists have used animals; in most cases their education process and even lab experiences required them to use animals. But did their innovations really depend on animals? No. The bulk of this book is devoted to explanations of how animals were not necessary for specific discoveries. Other methods, noninjurious to humans, were available. So yes, they used animals. But when they did they either got misleading results from the animals or when they did not there were other more reliable non-animal methods available. Safe, ethical research on humans and human tissue can always provide better, less flawed results.

The size and force of their propaganda avalanche suggest that animal experimenters are resting on uncertain foundations. If animal experiments are so great, why then protest so much and expensively? They have to, because keeping the truth quiet is costly.

That is incidental, however, because the economic motor supporting the animal experimentation lobby is vast. U.S. Surgical, a manufacturer of surgical equipment, and other companies like it, sponsor the Americans for Medical Progress, a supposedly unbiased consumer group. Founded in 1992 and run by former president Susan Paris, and current president Jacquie Calnan, AMP actively campaigns in support of animal tests. For example, the AMP ran a slanted series of infomercials called *Breakthroughs in Medicine* and a syndicated cartoon called *Heroes of Medicine*. Why? Because U.S. Surgical has a vested interest in the animal experimentation industry. It uses thousands of animals yearly to promote their expensive medical equipment. AMP is sarcastically referred to as "Americans For Medical Profits" because their lobbying efforts are so forceful.

What other businesses profit from animal experimentation and support lobbyists to defend their profits? Beyond the animal breeders and

vendors themselves, there are manufacturers and purveyors of cages, isolation cages, syringes and needles, scales, specialized surgical equipment, animal tissues, organs and blood, animal food, watering devices, equipment to kill the animals in a specific fashion, chemicals, microscopes, magnifying devices for microsurgery, scalpels, electrical equipment, blood testing equipment, stereotactic equipment, and so on. The list is almost endless and each item sells at a premium. *Lab Animal* magazine's annual buying guide has over a hundred pages of animals, cages and equipment. Here are just a few:

- ✓ • Cedar River Laboratories—cages and animals. They specialize in selling cats. Animals less than sixteen weeks old usually sell for \$225.00 according to their literature.
- PerImmune Inc.—chemicals used to analyze rodent blood and tissue.
- ANCARE—cages, bedding, watering equipment and other products needed for animal experimentation.
- ThermoCare Inc.—heated intensive care systems ranging in price from \$980.00 to \$4,750.00 according to their catalog.
- Therion—DNA analysis of lab animal blood samples.
- ✓ • Hilltop Lab Animals—numerous animal strains, breeds and species.
- Lab Caster Specialists—casters for lab animal cages and carts.
- ✓ • Marshall Farms—beagles, a very popular research animal.
- ✓ • Moulton Chinchilla Ranch—chinchillas.
- ✓ • Davidson Mill Breeding Labs—supposedly viral free guinea pigs.
- ✓ • CAMM Research Lab Animals—“high cholesterol” rabbits. (As we point out in Chapter 9, high cholesterol in a rabbit does not mean heart disease like it does in humans.)
- ✓ • Lomir Biomedical Inc.—animals and biomedical equipment for animal experimentation. Equipment includes jackets for immobilization of animals, pumps for force-feeding and gloves to provide protection from animals that bite when force fed.
- ✓ • Convanee—rabbits, dogs, primates, rodents and pigs.
- ✓ • Harlan Sprague Dawley—numerous species, strains, and breeds of animals.
- Charles River Laboratories—\$14-inbred mice, \$56-inbred rats, (It is estimated that up to 100,000,000 rats and mice are used in research each year.) \$123 guinea pigs and \$720 miniature swine. (1997 catalog) In 1983, Charles River sold at least 22 million animals to researchers.<sup>71</sup>
- ✓ • Primate Products Inc. of California and Osage Research Primates of Missouri—monkeys and other primates costing in the

thousands and the equipment used to restrain them, which also costs thousands of dollars.

- Hazleton Laboratories—chemical and pharmaceuticals.

The aforementioned companies and many others profit directly from animal experimentation. It is big business! Total money spent on animals and animal support products is difficult to estimate since frequently the companies are private and unwilling to divulge figures. By estimates, the industry grosses between one hundred billion and one trillion dollars per year worldwide. This includes the direct employment of hundreds of thousands of individuals. Indirectly, the industry affects thousands if not millions of people who manufacture steel, plastics, and other materials. Animal experimentation does nothing for your health but it does help keep the economy going.

Pharmaceutical companies and manufacturers of medical equipment benefit indirectly too, and it is not an exaggeration to say that they rely on animal experimentation. For example, let us say a company designs a wonder drug that it wants to sell as a cancer cure. No problem. Just give a university or research institution a few million dollars to “study” the medication. Researchers do tests and more tests on different animal species. Eventually, they either find or create a species that has a cancer and will respond to the drug. Then the drug can proceed to human trials and from there to profits. And in the meantime, the universities and research institutions grow plump.

Same goes for the United States military. In 1994 alone, the Department of Defense funded the following experiments (as extracted from the DOD Biomedical Research Database). All attempted to mimic information already exemplified in humans:

- \$23,000—Extend previous model of battle fatigue established in hamsters to rats.
- \$74,942—Test acupuncture and drugs in ferrets that are routinely used to control vomiting in humans.
- \$17,144—Test the effect of the drug Motilin on dogs that have undergone abdominal surgery.
- \$395,500—Demonstrate the effects of a chemical warfare agent antidote in non-human primates.
- \$626,000—Evaluate the potential of vitamin E to reduce nicotine-associated periodontal destruction in rats.
- \$136,000—Determine if nutrients alleviate stress in rats.
- ✓ \$232,515—Test the efficacy of drugs on dogs and primates that are irradiated until they vomit and bleed.

In 1997 alone the National Center for Research Resources allocated \$114,502,974 to seven different institutions for the study of primates. Eighteen thousand two hundred primates were involved. According to some sources, government agencies such as these sometimes encourage biotech lobbyists to discredit the criticism of animal experimentation because they too are vested in maintaining the status quo. Frederick Goodwin, a federal official, was quoted as saying, "We're not allowed to lobby. There's a law against it. [But] all federal agencies have linkages to various advocacy groups interested in the business of that agency."<sup>72</sup>

Many diverse enterprises profit from the animal experimentation industry. Each has an emperor's new clothes-style complicity. The aforementioned Dr. Irwin Bross described the way this "consensus of authorities" agree to overlook the naked truth together for mutual profit of orgiastic proportions.

It has been historically true in general that "he who pays the piper calls the tune." So what is deemed "officially true" is what is in line with the sponsor's policies, not necessarily what is in line with the facts. Moreover, the "authoritative opinion" nearly always supports the policies of its sponsors. Hence, the decisions in official science are political decisions that only masquerade as scientific ones. Those in official science have the illusion that they are not politically controlled, and at times the public may share this illusion. Whatever may be said, when the time comes to act, the actions are in line with the official policies. . . . Consider, for instance, the fact that the National Cancer Institute has spent billions of dollars on animal experimentation. The myth that such research produced the main chemotherapeutic drugs supports the continuation of this funding. The medical schools and research facilities of the biomedical establishment that share in this bonanza are certainly not going to let mere facts interfere with this lucrative business. So even though the historical facts here show that animal experiments were worse than useless in selecting clinically effective cancer chemotherapies—they were consistently misleading—the "consensus of authorities" will continue to say just the opposite.<sup>73</sup>

The animal experiment convention has become an enabler of unethical business activities of every stripe, a grab bag of lame excuses for every sort of treachery. Government and industry request and buy results from animal experimenters to support any questionable product or situation. If testing one species does not produce the desired result, they prod researchers to find one that does. Bross described the situation thus:

Whenever government agencies or polluting corporations want to cover up an environmental hazard, they can always find an animal study to "prove" their claim. They can even do a new animal study

which will come out the way they want by choosing the "right" animal model system.<sup>74</sup>

An example is the exhaustive Philip Morris campaign to persuade the public that smoking decreased the aggressive tendencies of humans. Here is a memo from Philip Morris in 1975: "We have had a guiding hand in designing studies of the influence of injected nicotine upon the predatory attack of cats upon mice."<sup>75</sup>

A "guiding hand"? Philip Morris makes it sound as if it had done both mice and us a favor. The Council for Tobacco Research (CTR) awarded over twenty million dollars in grant money per year.<sup>76</sup>

Not until 1997 did the CTR fold up shop, as the multibillion dollar settlement proposed to compensate states for tobacco-related illnesses seemed to suggest that, predatory cats or no, too many feel that tobacco is harmful for it to continue to buy researchers to say otherwise. Their statement: "It seems imprudent to make new grants at this time."

Any big company wanting to prove their product lives up to its claims can probably find an animal "model" to fulfill their expectations. Drug companies and other manufacturers know exactly how to buy "independent" testing for their products. It stands to reason that researchers who receive money from drug companies whose products they study are far more likely to supply a favorable review than those who were not receiving financial support. Of course. Money talks. The *New England Journal of Medicine* examined this conflict of interest in a recently published report.<sup>77</sup> The article pointed out evidence that scientists with financial ties to pharmaceutical companies were much more likely than those without to report favorably on the product being studied. The *Wall Street Journal* reported that in only 0.5 percent of 62,000 articles reviewed had the authors reported their possible financial ties to the institution with a vested interest in the outcome of the research.<sup>78</sup>

Even more unsettling are the perks described in the *Journal of the American Medical Association*. Forty-three percent of more than 2,000 researchers surveyed at the top fifty US research universities stated they had accepted gifts in the past three years. In addition to gifts of trips and equipment, the researchers also accepted cash. Some accepted these gifts even when the giver attached strings such as prior approval of the results of the research being conducted.<sup>79</sup>

So, in addition to contributing little that is positive to medical knowledge and much that resulted in human suffering, white smockers are not always above bribery.

Note this quote from Daniel N. Robinson in *Aping Science*:

. . . despite the often sentimental humanitarianism of the scientific community, the basis upon which research programs are actually defended are often financial and careerist. For many years scientists

engaged in what is called "pure" research regarded it as impertinence to be asked if any actual benefit to mankind or daily life might be forthcoming. As the general population has become more educated and impatient, as the national deficit has taken on galactic proportions, the scientists and their university agents have begun to issue promissory notes in return for their massive subsidies. Meanwhile, as financially strapped universities look to their science (and athletic) departments to underwrite major portions of university expenses, administrators are pushed by their Boards of Directors to secure grants, and individual scientists are spurred by administrators by having their professional status and even income tied to grant application success. George Roche's recent *The Fall of the Ivory Tower*, documents the effect of these grants upon the integrity and independence of the academic world. Thus, beyond the range of problems so precisely addressed in *Aping Science*, the Big Science movement in America has left a trail of broken promises and disasters large and small in its wake . . . The noble goal of relieving suffering and prolonging life prosecuted in a manner that does not strip life of a meaning richer than mere biological survival. It cannot be in the public's interest for its assets to be squandered in support of Big Science peddlers who promise short-cut solutions to societal problems that are at once medical, sociological, political, and in larger sense moral. It cannot be in the public's interest to expend fortunes on oversold "biomedical research" undertakings marred by confusion and occasional fraud.<sup>80</sup>

### Becoming a Discerning Citizen and Consumer

The powers that be lull even animal lovers into reluctant support with their claims, perpetrated through the lay media. The media routinely reinforces white coat capers with uplifting articles about mouse cancer cures and rats with lowered cholesterol, and drugs that look like they will alleviate neurologically devastating diseases like multiple sclerosis or Alzheimer's in mice. These are "news." They sell papers and capture public sentiment. As we have pointed out, no one ever seems to get around to confirming when or if *humans* will benefit from these rodent-based revelations.

Further the animal experimenters' public relations engine pounces on any and every opportunity to keep their position in spin. In a recent example, the media quoted Paul McCartney as saying that his wife's cancer medications had to be tested on animals. Taken out of context, this appears to be an endorsement of animal testing by a celebrity whose wife's illness seems to have changed his known aversion to vivisection. In actuality, McCartney's position against lab animal use is stronger than ever. The medications Linda McCartney took had to be tested on animals because *the law required them to be*, not because doing so made

the medications safer for human consumption. The animal experimentation front and the media will always be accurate, as long as regulations demand animal testing, in saying that drugs were tested on animals. For reporters and for the public that is uninformed as to the deceptive role of animal testing, this is too subtle a point. This subtlety works to the benefit of the vivisectionists and makes the job of outspoken critics such as McCartney very difficult.

In the area of science and medicine, most reporters, though not all, are either uninformed or biased or both in their interpretation of the facts of animal experimentation. To be fair, they too were brought up and live in a society that perpetuates the animal-model delusion. Very few have the background and expertise to discern what is meaningful. Reporters cultivate and mine relationships with their favorite scientists, ask their opinions and report accordingly. We grant many interviews from the media and find that most do not understand the problem nor do they have the time to allow us to explain it. Just as is true in science, the pace, pressure and money machine of journalism does not allow in-depth reporting and exposés that may endanger advertising. Sound bites seldom do justice to science.

Therefore, it is not easy for the layperson to get his or her hands on comprehensive information. Without voluble public outcry, the animal testing machine, now large and in perpetual motion, will be difficult to stop. Anytime animal testing is questioned, there are outcries from many vested quarters. Scientists. Physicians. Hospitals. Bureaucrats. Pharmaceutical companies. Medical conglomerates. Politicians. Animal farmers and vendors. Lawyers. News media. All hasten to shore up their positions and keep clear of litigation.

The interdependency between these various constituencies works like a finely tuned ruse: The more animal experiments the researcher does, the more articles get published. The more articles he publishes, the more grant money he receives. The more grant money he receives, the more money the university receives. The more money the university receives, the better its reputation. The better its reputation, the less liable big business is when the university safely tests its new product and hence the more products they can sell. The more big business sells the more money for advertising and hence the more compliant is the media. And on the other side of this cabal is the unwitting American consumer, paying through the nose for, at best, nothing and worse, ill health. This is not a conspiracy, this is simple greed.

Trillions of taxpayer and charity dollars continue to funnel into wasteful experiments which are of no use to the consumer who supports them. That is why we call animal experimentation "white coat welfare."

We must shake our tacit acceptance of all animal-based medical research! The public who is both benefactor and would-be beneficiary must demand human solutions to our health dilemmas. Are these pro-

professionals somehow exempt from the criteria that govern the rest of us? Would your employer allow you to be this unproductive and maintain your job?

We do not have unlimited time, money and scientists. (Even if we did, research on animals would still be bad because of all the misleading data and human suffering it creates.) If the trillions of dollars wasted on the animal model had, instead, gone to human-based alternatives, who knows what could have been accomplished by now?

In this era of budget constraints, science should focus on experiments more likely to yield tangible benefits to humans. We consumers should demand, as Gertrude Elion did, applicable results. Why support animal experimentation when other methods provide real avenues to better health?

## chapter 6

# Alternatives

The future of biology is really going to be [human] systems analysis.

—Dr. Leroy Hood, University of Washington

Say we open the cages and let loose the lab animals. Then what? If we do not experiment on animals, on whom? How will we derive our discoveries, our cures?

Animal experimenters would have us believe that scientific innovation would come to a great, grinding halt if animals were let out of the lab, or as the Foundation for Biomedical Research publication *Animal Research Fact vs. Myth* puts it: “There are no alternatives to animal research [for human disease].”

As scientists, we find this insulting and ridiculous. Yes, if we abandoned the animal experimentation protocol, many researchers would have to scramble to learn other, more predictive methodologies; and certainly there would be major adjustments in publishing and drug approval. However, there are compelling reasons to believe that scientific innovation would get a big boost if medical research were devoid of animal models. Other, more rewarding techniques would gather strength under augmented effort, and maybe we would then find cures for today’s most challenging illnesses.

There is an even more ludicrous scare tactic perpetrated by animal experimenters and their lobbyists. That is the claim that if there were no animal experiments we would have to experiment on humans. Human experiments, yes, but not on caged humans, nor prisoners, nor the mentally disabled, nor lab humans, nor any unwilling experimental humans. We would conduct experiments on human cells and human tissues, examine and document humans at autopsy, tally and analyze the results of human epidemiology studies, more carefully observe humans in the clinical setting and spread the word among humans on preven-

your family's lives, your friends' lives. Only by increasing the volume of discussion around the animal-experimentation issue can we hope to break down the conventions that propagate it. Action will contribute to change and the transformation will benefit everyone. Stopping animal experimentation will increase resources for bona-fide science with always applicable results and for prevention that will limit the incidence of disease. And when medical researchers use human-based science, these so-called alternatives to animal experiments, then we can have confidence that we are doing the utmost to ease human suffering from disease.

## Postscript

**T**he high standard of medical care we enjoy today was made possible by:

1. Clinical observation and research
2. *In vitro* research with human tissue
3. Postmarketing drug surveillance
4. Serendipity
5. Mathematical modeling
6. Autopsies
7. Computers
8. Epidemiology
9. Pathology
10. Specialization of medical care
11. Specialized areas of hospital care
12. Technology
13. Genetics
14. Basic science research in fields such as chemistry, mathematics, and physics
15. Prevention

We hope we have proved that:

1. Experimenting on animals for human benefit is not *science*.
2. Extrapolating results from animal to humans has misled scientists, delayed therapies, *not* prevented dangerous therapies and techniques from being implemented, and has directly harmed humans.
3. Discoveries made via past experiments on animals could have been found without them.
4. Experiments on animals waste time, money, and personnel that should be devoted to methods that have a proven record of success.