
Public Testimony of

Theodora Capaldo, EdD

President/Executive Director

New England Anti-Vivisection Society (NEAVS)
Project R&R: Release and Restitution for Chimpanzees in U.S. Laboratories

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Question

What criteria must be met to consider the chimpanzee a scientifically valuable model for studying a particular disease or testing a novel drug vaccine?

Testimony

Humane and ethical considerations of chimpanzees' psychological well-being must be met, and the stress, harm and suffering they endure cannot be left out of scientific discussion.

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Introduction

I am a licensed psychologist with more than 35 years of experience. Currently I serve as President and Executive Director of the New England Anti-Vivisection Society (NEAVS), Boston, Massachusetts. Founded in 1895 to “to expose and oppose secret or painful experiments upon living animals, lunatics, paupers or criminals,” NEAVS is one of the oldest animal protection organizations in the country. Our founding mission highlights the ethical basis of our incorporation and the breadth of those for whom we have concern. At the time, vivisection was practiced on an array of humans considered somehow inferior to those for whom society afforded protection. While such practices would today not be permitted in the U.S. and strict ethical and legal guidelines determine what can and cannot be done to humans in research, when NEAVS was founded no such protections existed anywhere in the world. There are few among us who do not consider what was done historically to humans in science as anything less than egregious, despite possible scientific usefulness.

Today, NEAVS continues to work on behalf of the remaining charges of our mission—animals—for whom few protections still exist. However, given more than 100 years of scientific advances, we no longer position our arguments strictly or solely on ethical grounds. We now find ample and growing scientific evidence to support our mission to end the use of animals in research and replace them with scientifically superior methods that we believe are more humane and more productive for the humans awaiting preventions, treatments and cures for disease. We are not anti-science, nor anti-human. We merely believe there is better and more humane science for all. (*See Appendix 1 for more general background information on our chimpanzee work.*)

As the crux of our public testimony, we will argue that imposing an artificial dichotomy between ethical and scientific arguments is a distortion of the facts and something this Committee, with its historic and precedent-setting directive, cannot afford to do.

The Committee has been directed by the National Institutes of Health to not consider ethical arguments against the use of chimpanzees. This testimony hopes to convince the Committee that humane, ethical concerns have clear and major implications for research findings and therefore cannot be left out of scientific discussion. To do so would be shortsighted and run the risk that any conclusions reached were based on limited, incomplete information and not from a thorough look at the whole scientific picture.

While some of us feel that ethics alone, as some countries have decided, are sufficient argument to discontinue chimpanzee use and housing in U.S. laboratories, others need hard scientific data to arrive at this conclusion. Such important scientific data comes from the effects of confinement and use on chimpanzees—a highly intelligent, social and emotionally sophisticated species—and must be factored into a discussion of whether they are or ever could be of benefit to biomedical research.

The Effects of Stress on Research Data

The Committee is likely aware of the scientific literature attesting to the negative impact stress in laboratory animals has on research data. In fact, your own Dr. Robert Sapolsky puts it this way in Why Zebras Don't Get Ulcers: "...the brain has a vast potential for sticking its nose into the immune system's business" (p.126). In this one-liner, Dr. Sapolsky captures the essence of the scientifically supported reality that "there is a strong link between the nervous system and the immune system" (p.127). Sapolsky begins his case by referring back to the work of Hans Selye, "one of the godfathers of stress psychology." He notes that:

To be only a bit facetious, stress physiology exists as a discipline because this man was both a very insightful scientist and rather inept at handling laboratory rats. (p. 8)

Selye methodically explored the effects stress in his laboratory rats had on his findings. "Selye was the person who, searching for a way to describe the non-specificity of the unpleasantness to which the rats were responding, borrowed a term from engineering and proclaimed that the rats were 'undergoing' stress" (p.9)...and that their stress affected his data.

In further support of this now well accepted finding, an article, "The Trouble with Animal Models" in *The Scientist* noted:¹

"Many of the underlying limitations associated with mice models involve the inherent nature of animal testing. The laboratory environment can have a significant effect on test results, as stress is a common factor in caged life. Jeffrey Mogil, a psychology researcher at McGill University in Quebec, demonstrated last year that laboratory mice feel "sympathy pains" for their fellow labmates. 'In other words, seeing another mouse in distress elevates the amount of distress the onlooker displays. The average researcher, when testing for toxicity effects in mice for example, likely assumes that they are starting at a pain baseline, when in truth the surrounding environment is not benign and can significantly affect results,' Mogil says. ..."

It is from this departure point that we must look closely at what we know about the incidence, degree and impact of stress on chimpanzees in laboratories...many for whom decades, even their entire lives, behind laboratory walls has taken its toll on both their physical (as autopsy results show—in particular damage to liver, pancreas, trachea, intestines, heart and abdominal adhesions) and their psychological well being, with all of its implications for their usefulness or inappropriateness as a research model. The potential impact of stress on research findings is further confounded by the inability of researchers to control for both the known and unknown variables that contribute to the chimpanzees' stress and that may be impossible to eliminate by virtue of the sensibility and needs of chimpanzees as a species—not unlike the stress and effects that confinement and use would have on humans. Further, the impact of stress on chimpanzees includes internal and biophysiological psychogenetic injury (or imposed internal injuries from previous protocols or routine laboratory procedures). It is precisely at this intersection where humane/ethical issues collide head on with scientific arguments for or against the use of chimpanzees in all areas of research (and most glaringly in disorders directly related to or effected by immune function.)

¹ <http://tiny.cc/j1opm>

Research on laboratory rats, mice, rabbits, hamsters, various birds and monkeys, for example, has shown that common laboratory routines, such as simple handling, moving and cleaning cages, through to more invasive techniques such as blood collection and orogastric gavage causes animals to exhibit rapid, pronounced, and statistically significant elevations of physiological stress indicators such as heart rate, blood pressure and a variety of hormone levels (including cortisol), indicating significant fear, stress and distress (1, 2). This “direct” stress is compounded by the standard laboratory housing conditions of animals, which impose unnatural levels of confinement and commonly deprive the occupants of opportunities to engage in essential natural behaviors. In many cases, social interaction with other members of their own species and the stress relieving comforts primates can and do provide each other are not possible (3, 4). Marmoset monkeys resolutely try to avoid capture from their research cages, during which they “easily become stressed and agitated and can cause harm to themselves”...and such routine capture “has been associated with increased cortisol, signs of distress and decrease in other hormones in various nonhuman primate species” (5). Similarly, chimpanzees placed in a standard laboratory squeeze cage, in their impotent attempts to escape, thrash frantically, scream, fear grimace, defecate and manifest a full range of fearful, panicked behaviors and, if measured, accompanying biophysiological stress indicators. This huge degree of stress that they are subjected to is then followed by a blood draw, administration of a virus, or other experimental protocol for which the resulting data does not, because it cannot, account. Examples of typical lab procedures like the use of a squeeze cage come most recently (2010) from footage from New Iberia—footage which also shows injury and disfiguring absence of hair from excessive grooming, another measurable and sure sign of high levels of stress in chimpanzees and other primates.

One study warns that “...animals subjected to the environmental changes that occur during transportation... react with changes in their physiology, such as body weight, plasma hormonal levels, heart rate and blood pressure changes... When measurements of physiological parameters are performed using conventional measurement techniques, the results must be interpreted with caution as these conventional techniques also have effects on the animals...” (6). Pointedly and succinctly, “Suffering in animals can result in physiological changes which may increase the variability of experimental data” (7). Many scientists are actually well aware of these effects and considerations, and have cautioned against disregarding them (8-10), while accepting that the negative effects of pain, stress and distress and their influence on study outcome are often not reported or underreported in published scientific papers (11).

The Effects of Stress on Chimpanzee Biology and Consequences for Research Data

The work that I authored with two other psychologists and a chimpanzee sanctuary founder/director (Bradshaw, G.A. *et al.* (2009) Developmental Context Effects on Bicultural Posttrauma Self Repair in Chimpanzees. *Developmental Psychology*, 45(5), 1376–1388; and Bradshaw, G.A. *et al.* (2008) Building an Inner Sanctuary: Complex PTSD in Chimpanzees. *Journal of Trauma & Dissociation*, 9(1), 9-34) as well as the work of others, have established that chimpanzees suffer from PTSD, depression and other psychological maladies as a result of their traumatic experiences in the lab, much as human survivors of traumatic events do (12). They manifest symptoms consistent with human symptoms and criteria as described by the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (13); and the prevalence of PTSD and depression is widespread among chimpanzees from research as compared to those from the wild (14).

Recently, a study by Ferdowsian *et al.* (14) (available online) offered a quantitative look at the incidence of trauma and psychological symptoms in chimpanzees from research, adding further evidence to arguments that they do suffer psychologically and that their suffering often is lifelong. The study found that:

58% of chimpanzees living in sanctuaries met the set of alternative criteria for depression, compared with 3% of chimpanzees in the wild ($p = 0.04$), and 44% of

chimpanzees in sanctuaries met the set of alternative criteria for PTSD, compared with 0.5% of chimpanzees in the wild ($p = 0.04$). (from Abstract)

Finally, a paper currently in review (Capaldo, T., Bradshaw, G.A. (2011) *Humanity, Reason, and Justice: Law of Psychiatric Injury and the Bioethics of Great Ape Wellbeing*) asks the important question, can the psychological well being of chimpanzees, as required by the Animal Welfare Act, ever be met in traditional laboratory settings? (*See Appendix 2 for more background information on PTSD and chimpanzees*)

The stress induced by the circumstances of laboratory use and confinement is not simply empirical, however—it is biologically measurable. Cortisol, produced by the body in many different species in response to stress in order to counteract its effects on the body, is a well-accepted measure of stress in widespread and routine use. Significant increases in cortisol occur in chimpanzees following anesthesia (a known stressor) that may be measured in their urine and feces for up to two days (15, 16). Chimpanzees are anesthetized for not only experimental procedures, but often for routine procedures, even including changing cages. Records indicate that some chimpanzees have been anesthetized more than 400 times.

Studies in human PTSD patients have shown acute stress to affect glucose metabolism, inflammation and various components of the immune system that are associated with type 2 diabetes (17). Diabetes manifests as a problem for chimpanzees from research and now in sanctuary. A study of gene expression in healthy human men indicated 49 different genetic pathways to be affected by stress, including genes associated with the immune system (18). Further studies promise to build on such findings and elucidate the human genetic response to stress in many tissues and organs (19). As a point of interest, and to further substantiate the effect of stress on the expression of our genes and subsequent modulation of biological processes, there is evidence to show that mind-body practices that elicit the relaxation response, characterized by reduced psychological distress, also significantly affect gene expression. One study demonstrated changes in the expression of thousands of genes due to the relaxation response, with long-term physiological effects that are likely to counteract the damage induced by chronic stress (20).

It has been shown that specific changes in the expression of particular genes in animals due to stress “cannot be readily translated to the human paradigm” (21, 22). However, while the specifics of which genes are affected and how they are affected by stress might be species specific, it is clear that in many if not all species, stress induces widespread gene expression changes that affect physiology, and notably the immune system. This has serious, inherent and unavoidable ethical and scientific consequences for the use of chimpanzees in biomedical research. All the information above demonstrates that a chimpanzee in a laboratory is inevitably a stressed chimpanzee—from the mere start of procedures associated with their confinement through and especially when being subjected to experimental protocols.

Stress-associated differences in gene expression must therefore be taken into account, which affect chimpanzees’ immune systems—crucial for the study of infectious diseases such as hepatitis C and HIV/AIDS—and many of their vital organs such as the liver—important for the metabolism of drugs being tested and central to the study of the effects of hepatitis C virus—the brain, in neuroscience research—and so on. The data—and therefore the use of chimpanzees—is therefore doubly flawed.

The salient point is that even if the results of chimpanzee research were applicable and relevant to human biology and disease (which we argue it is not), this relevance would be greatly and necessarily diminished and confounded by the inherent and intractable stress present in the chimpanzees used. Stressed humans would not be used in clinical studies due to concerns over adverse effects on the results, yet those with vested interest in continuing the use of chimpanzees remain entrenched in refusing to acknowledge and accept the limitations and dangers that come from the use of stressed chimpanzees.

Though chimpanzee researchers seem to want to continue to deny or minimize the humane/ethical concerns of psychological suffering in chimpanzees as well as its implications for science as one way to

continue to justify chimpanzee confinement and use to the public, the world of human psychology/psychiatry and scholarly ethics, as should this Committee find these questions of extreme interest, and of social and scientific relevance and importance.

Autopsy, Harm, Suffering and Poor Research Models

Years ago, Charles River Laboratories (CRL) joined in Massachusetts' successful efforts to repeal pound seizure laws. They argued that dogs and cats from the streets, with unknown medical, genetic or other histories could no more serve as appropriate research models than could rats from those same streets. From a scientific perspective, their position was entirely justifiable. However, in the case of chimpanzees, an expensive and limitedly available "research resource," science and its surrounding industries have been selective regarding when the purity of an animal model must be maintained, and when the physical and psychological condition of an animal may be ignored and they are used in one protocol after another. CRL, a leading breeder of rats and mice for research had a vested interest in closing the supply of former pets to researchers. Those holding chimpanzees have a similarly vested financial interest in ignoring the serious and real implications of the biophysiological effects of stress on their research results. Still they continue to use chimpanzees, advocate for their use, reap housing and maintenance dollars for holding, feeding, and housing them and refuse to let them go.

The ethical and humane concerns that animal protectionists bring to this debate are fraught with scientific implications. It is imperative that they be addressed and factored in to any conclusion about the current and future need and use of chimpanzees. Further, it is critical that in addition to the psychological injuries briefly included in this testimony, and in more detail in the attached and referenced papers, the internal injuries sustained by chimpanzees from routine laboratory procedures as well as from protocols must also be addressed for both humane/ethical and scientific reasons.

Over the years at Fauna sanctuary (where the first HIV infected chimpanzees rescued from a U.S. lab were placed in 1997), one-third of the chimpanzees formerly of the Laboratory for Experimental Medicine and Surgery in Primates (LEMSIP) have died. Necropsies have been performed on all the chimps. In all cases, the degree of internal injury that the necropsies evidenced provides further ethical argument to end their use, and a scientific argument that chimpanzees now held in labs with decades of research history and laboratory confinement are likely to be in a similarly poor condition to the present and deceased LEMSIP chimps at Fauna. Like them, the vast majority of the current population, given the years they have been in a laboratory, the multiple labs they have been in and the multiple protocols they have been used or leased for, are too damaged by previous protocols and routine laboratory procedures to serve as an appropriate model for any biomedical research. Here, too, is an area where ethics impacts scientific validity. We provide the following example to stimulate Committee discussion:



Tom in sanctuary
Photo Credit: M.Seres

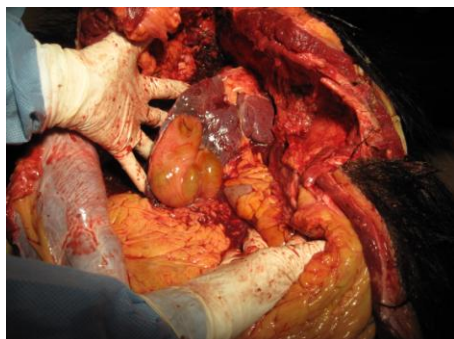
Tom died in sanctuary in 2009. His autopsy results are a compelling example of the degree of suffering he endured and his unsuitability as a "research model" —years before his actual retirement. Tom's autopsy findings were not atypical. Necropsies, as well as the health problems of the remaining former research chimps at Fauna and of other chimpanzees from other labs at other sanctuaries, all testify to the degree of harm and suffering those chimpanzees sustain over decades of use. This illustrates the inhumane nature of their use, and invalidates any scientific application of results from it.

Tom was born in or around 1967 and was a wild-caught chimpanzee (based on information gleaned from his records.) Before arriving at LEMSIP in 1982, Tom had already spent sixteen years at other research labs. He was

used hard for much invasive research including being infected with HIV. In his 15 years at LEMSIP alone, he was knocked down at least 369 times. Unlike others who submit from losing the strength to fight or who find a way to make cooperating lessen their struggle, Tom, with his alpha nature was described as “completely uncooperative” in the lab. His persistent and rightful resistance meant he had to be knocked down even for cage changes. Finally, after enduring some additional 56 punch liver biopsies, one open liver wedge biopsy, three lymph node and three bone marrow biopsies among a myriad other procedures, Tom finally gave up. His physical condition was worsening—his helplessness was becoming a reality he could no longer fight against. Tom found himself able to resist only by vacillating between profound withdrawal and, when he had the strength, incessant banging on his cage. The toll taken on his health would be unequivocally revealed on the day of his autopsy.

Even after years in sanctuary, Tom continued to be plagued with physical problems that resulted from injury and use, or from the psychogenic illnesses borne from stress and suffering. Tom had constant diarrhea—every day, for his entire life in sanctuary and at LEMSIP—that no food changes, medications, or stool analysis could help or ameliorate. A researcher once said that “monkeys having diarrhea all the time is normal....” which may provide some insight into how much suffering is tolerated by researchers and caregivers in a lab, and how much apparent ill health may be ignored despite possible implications for the animal’s well being or for the study. The diarrhea Tom had was not normal, and put him at risk from dehydration, for stomach and intestinal cramping, from feeling ill or at least uncomfortable every day. His stools were watery and came with an intensity that is often referred to as “projectile.” In sanctuary, Tom had the option to choose from a variety of fruits and vegetables at every meal. In his wisdom, Tom would always include several heads of iceberg lettuce a day and would typically choose fruits and vegetables high in water—keeping himself well hydrated. Before this for 15 years at LEMSIP, his diet was predominantly “chow” biscuits (oily, dry, and fibrous) and one, maybe two, fruits or vegetables a day ... typically a carrot or cabbage... not one’s first choice in an ideal diet for intestinal distress. In addition to his persistent diarrhea, at the start of every day, Tom spent several minutes gagging, yet another sign of his distress for which neither the cause nor treatment could be ascertained. The reasons for so many of Tom’s physical symptoms like the diarrhea and gagging would be apparent from his autopsy.

Despite his many untreatable health problems, Tom’s emotional healing was clear. He came to establish close ties with both human caregivers and other chimpanzees. Despite his social isolation and “uncooperativeness” in the lab, his sanctuary care and his own character supported him in creating a daily life that included essential ingredients for a chimpanzee’s psychological well being. Then in 2009, Tom died suddenly and unexpectedly. The following excerpt from his autopsy report is a compelling argument for the degree of damage chimpanzees like Tom endure as a result of routine laboratory life, procedures and research protocols, and shows not only how unsuitable he was as a viable research subject, but, as importantly how much he suffered—offering us a poignant interface of science and ethics. (*For other chimpanzee stories from the PTSD studies please see Appendix 3.*)



Removal of Tom’s heart at autopsy

Photo Credit: Fauna Foundation

tissue associated with the surgical history of this animal. There adhesions were likely to be associated

The liver, spleen and multiple loops of bowel are adhered to the body wall....The liver is adhered to diaphragm.... the liver appears to be enlarged.... The pancreas is severely atrophied, has abnormal colour and texture. Spleen adhered to body wall. Kidneys: Dark discoloration at the cranial pole of the left kidney. Band of dark discoloration of the right kidney near the caudal pole (infarcted)... Extensive lesions of multifocal to coalescing interstitial fibrosis are present in the myocardium....The areas of fibrosis...are associated with a significant loss of cardiac muscle... the fibrotic lesions present in the cardiac muscle were clinically significant and most likely the cause of the death of Tom...The adhesions observed during the macroscopic examination were chronic in nature and probably represent scar

with some level of discomfort for this animal. (*Université of Montréal, Rapport de Biopsie, Faculté de Médecine Vétérinaire, December, 2009.*)

Conclusions

While some will require “further study” into the psychological and physical suffering endured by chimpanzees in U.S. laboratories, this testimony is an attempt to help the Committee arrive at not only an intellectual but also an emotionally informed decision that the humane and ethical concerns that surround the use of chimpanzees in U.S. laboratories cannot be put aside—for scientific as well as ethical reasons.

Please include ethical and humane considerations as part of your debate...they will enlighten, inform and help direct the better science that will follow.

Appendix 1

General Background Information

Prior to the launch of NEAVS' campaign (Project R&R: Release and Restitution for Chimpanzees in U.S. Laboratories) to end the use of chimpanzees, we gave serious thought to the question of whether or not chimpanzees were an appropriate and timely target, that would be both supported by the public and scientific evidence. In 2005 we commissioned a public opinion survey*. The results were impressive and indicated that a large percentage of the American public would be behind ending the use of chimpanzees. Among the important findings that encouraged us in our campaign were the following:

- Four in five Americans support limiting or eliminating research using chimpanzees. 78% are completely opposed or say they only support chimpanzee research “somewhat or sometimes”
- Americans favor 10-1 the use of alternatives to chimpanzee research. Only 7% say they “never” support the use of alternatives
- Americans disapprove 3-1 of using the same chimpanzee for multiple experiments. Only 18% say “yes,” they do approve of using the same chimpanzee for multiple experiments
- Three in four Americans support permanent retirement for chimps no longer used in experiments. 74% support “permanently retiring them to a sanctuary” vs 2% who said “warehouse them in laboratories”
- Seven in ten Americans favor retirement of chimpanzees used in research for more than 10 years. 71% say that if a chimpanzee has been used for more than 10 years, they should be retired; only 7% say “no”
- Two in three Americans support permanent retirement for chimpanzees who are ill or weakened from experiments.
- Nine in ten Americans know that chimpanzees are highly intelligent and live in social or family groups
- Three in four Americans know that chimpanzees express emotions similar to humans like laughing or crying

*In total, 1,678 U.S. adults (age 18 and over) completed the survey with valid responses, resulting in a margin of error of about +/- 2.4% (at a 95% confidence level). The survey was conducted online with controlled distribution to ensure representation of U.S. adults and was completed with the assistance of Survey Sampling, Inc. (SSI). The invitations were sent using balanced sampling procedures for distribution across age and gender, which in actuality resulted in a slightly higher-than-expected 54% female response base. HRC opted not to apply any weighting during the analysis to account for this difference because we do not believe it would have a significant impact on the results. Humane Research Council

Given the support we found for ending or limiting chimpanzee research among the American public, we next commissioned the services of a science consultant to answer our questions regarding the effectiveness, usefulness and prevalence of findings from the use of chimpanzees to study human biomedical research questions. That individual, Dr. Jarrod Bailey, a geneticist, submitted testimony at the IOM's spring meeting. The scientific papers reporting his findings have been submitted to the Committee.

To summarize some of his key findings:

From 749 studies of captive chimpanzees published from 1995 – 2004 inclusive, 95 randomly selected papers were subjected to a detailed citation analysis:

- 49.5% (47/95) of papers had not been cited at the time of this study
- 38.5% (34/95) were cited by 116 papers that did not describe well-developed methods for combating human diseases
- 14.7% (14/95) of these chimpanzee studies were cited by 27 papers describing well-developed prophylactic, diagnostic or therapeutic methods for combating human diseases
- Close examination of these 27 human medical papers revealed that *in vitro* research, human clinical and epidemiological investigations, molecular assays and methods, and genomic studies, contributed most to their development. Duplication of human outcomes, inconsistency with other human or primate data, and other causes resulted in the absence of any chimpanzee study demonstrating an essential contribution, or, in most cases, even a significant contribution of any kind, towards the development of the described human treatment

Next we asked him to review chimpanzee use in major human “killer diseases” like AIDS and cancer as well as their use in hepatitis C research, to support or counter current claims of chimpanzees being of major importance in this area.

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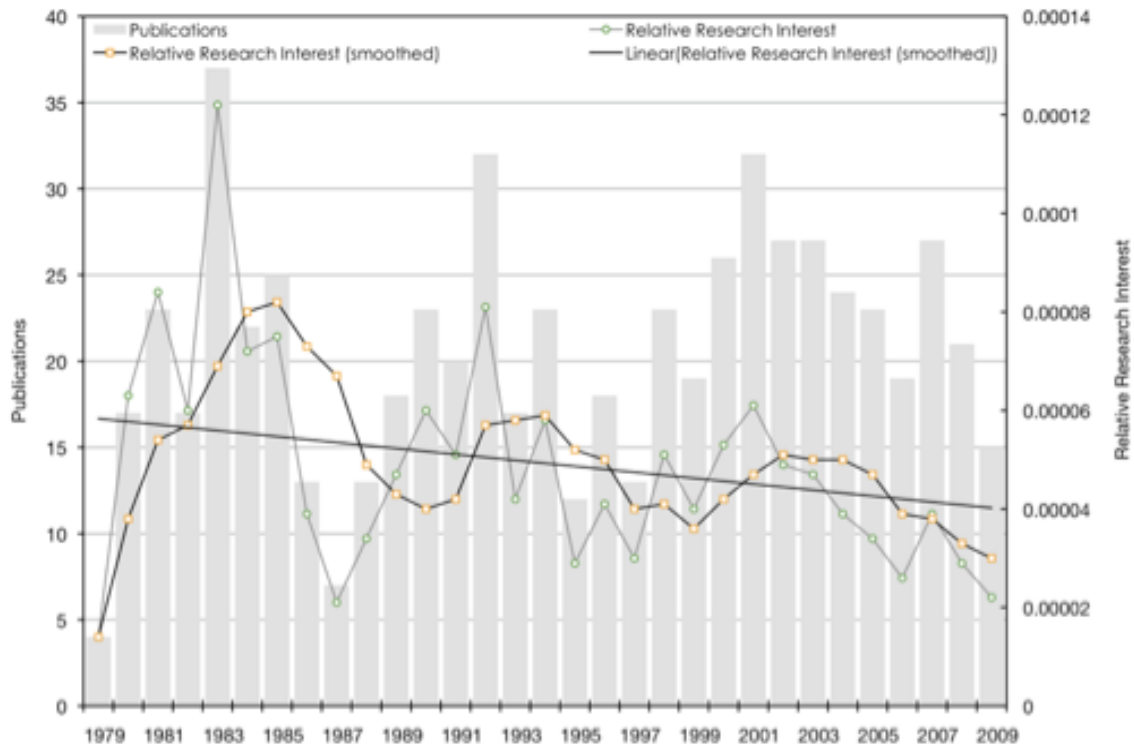
Included in Dr. Bailey's findings are the following:

- HIV/AIDS—Despite 85 different vaccines shown to be safe and efficacious in chimpanzees and monkeys, when tested in 197 clinical trials, protection and/or significant therapeutic effects had not been demonstrated by any vaccine to date in humans
- CANCER—Chimpanzees have scarcely been used in any form of cancer research; chimpanzee tumors are rare and biologically different from human cancers; papers describing potential new cancer therapies noted significant concerns regarding the chimpanzee model; other studies described interventions that have not been pursued clinically. Finally, available evidence indicates that chimpanzees are not essential in the development of therapeutic monoclonal antibodies
- HEPATITIS C—A significant decrease in their use accompanied by a significant increase in the use of non-animal alternatives

Graph A

Chimp HepC Research '79 – '09

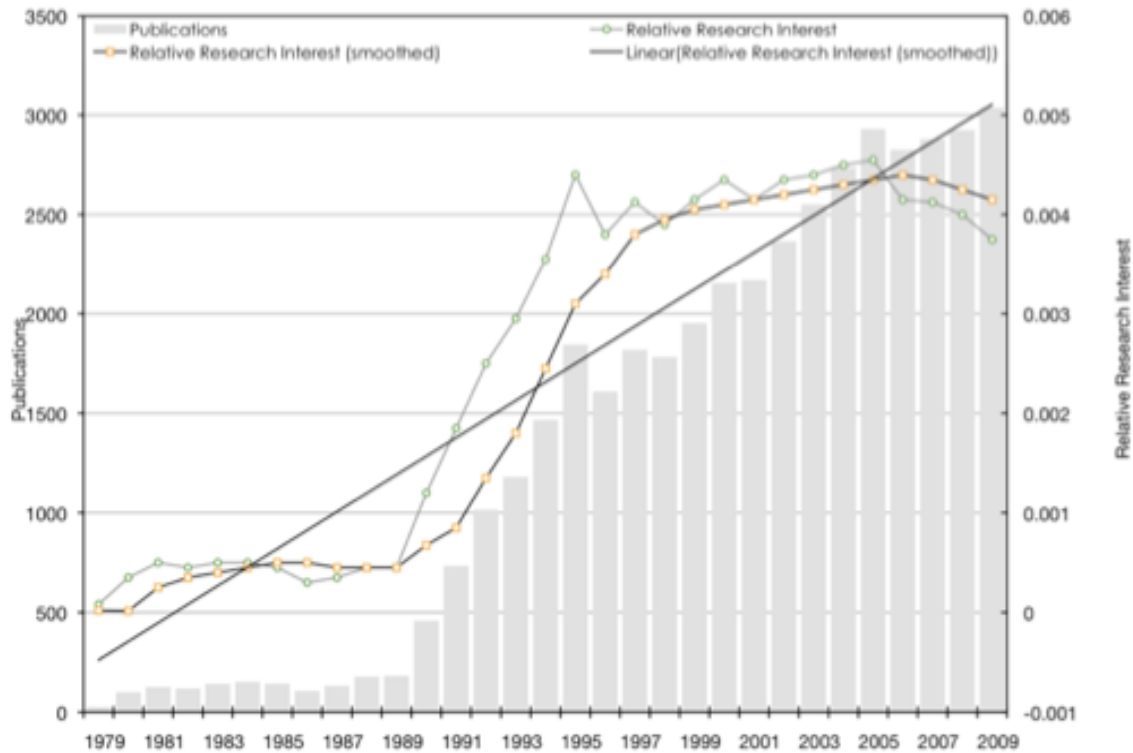
- Initial steep rise in chimp use from 1979 to mid 1980s
- Downward trend: current RRI (2009) approaching 1/3 peak value in 1985 and historical low



Graph B

Human/*In Vitro* HepC Research '79 – '09

- Rise in hepatitis C research not involving chimpanzees/other animals: ~80-fold in last 30 years



From Dr. Bailey's critical scientific evaluation of the last 30 years of chimpanzee use in extremely important areas of research to benefit humans, there is at very best a dubious argument, if any argument at all, of their efficacy, necessity or benefit. Given his scientific conclusions, the ethical justification for their continued use would be difficult to support. The suffering, waste of tax dollars, concerns of the American public and other factors must lead one to conclude that without overwhelming scientific evidence of their enormous efficacy and indispensability, the practice, in a compassionate world, would have to end. However, even if Dr. Bailey's conclusions are suspended for a moment and it is assumed that chimpanzees may have in fact been useful, it would still be critical for the Committee to consider arguments of this testimony which challenge scientifically relevant aspects of an ethical imperative to continue or end their use.

Appendix 2

PTSD and Chimpanzees Background Information

I came to know chimpanzees like Tom, Billy Jo, Jeannie and Rachel from building a close association with the Fauna Foundation sanctuary in Quebec, CA. Fauna is home to the first HIV-infected chimpanzees to be released from a U.S. laboratory (the Laboratory for Experimental Medicine and Surgery in Primates /LEMSIP, NY). Founder/director Gloria Grow would tell me stories about the Fauna chimps, well aware that she was talking to a psychologist who had worked successfully for decades with humans who suffered from depression, Post Traumatic Stress, and other psychological maladies that were the result of previous experiences, and at times, influenced by genetic predispositions. Gloria was eager to get my perspective on many of the behaviors and symptoms her chimpanzees had when they first arrived from LEMSIP and were still lingering to various degrees. Some she noted had partially resolved from years in safe and caring sanctuary; others were firmly entrenched and appeared to be of an intensity that left her wondering if all she could hope for were less frequent occurrences or occurrences of less intensity.

Gloria and I were both knowledgeable about the range of behavior, both adaptive and maladaptive, recorded for decades by field researchers on free-living chimpanzees in Africa. We were painfully aware that the behaviors of the Fauna chimpanzees as well as chimpanzees from research in other sanctuaries were outside of any normative range for chimpanzees in the wild, even with the social and environmental stressors that are part of their worlds. Our on going discussions culminated in my inviting Gloria to attend a two-day Harvard Medical School sponsored continuing education seminar on Post Traumatic Stress Disorder in humans. What I was hearing about the chimpanzees, if I ignored the fact that they were another species, sounded not just similar to but actually replicating of what I had seen and experienced over the years with my own patients suffering from PTSD and/or depression. Having extensively studied the effects of trauma, especially repeated, relentless or inescapable trauma, I was well aware of its potentially devastating effects on long-term psychological well being. My invitation was an attempt to help Gloria begin to learn the language of psychology and diagnostic nomenclature used in the fields of human mental health. I was eager to see if she saw what I was seeing: that chimpanzees and humans are identical in their vulnerability to trauma and manifest a range of symptoms uncannily the same.

Our question was: would chimpanzees, if evaluated by the same Diagnostic and Statistical Manual criteria (the bible for diagnoses in all fields of human mental health) as humans are evaluated, also be diagnosed as suffering from Post Traumatic Stress Disorder? Our endless conversations, attendance at the seminar, shared information from human psychological literature and from her observations of Fauna's chimpanzees, and my growing first hand experiences with Fauna's chimpanzees over more than three years, led to our engaging psychologists Dr. Gay Bradshaw, who had explored trauma in captive elephants and Dr. Lorin Lindner, who had extensive experience rehabilitating parrots who exhibited severe stress induced symptoms, to join us in a formal qualitative analysis via case studies of two chimpanzees, Jeannie and Rachel. This first study was followed by a second where our same team of researchers looked at the effects early development (having spent time with their biological mother in the wild prior to capture, having been born and raised in a lab with peers, and having been raised in a cross-fostering situation "as human" prior to being sent to a lab) had on a chimpanzee's (Tom, Regis, and Billy) ability to sustain the trauma of confinement and research use for the better or the worse; and, once rescued or retired from research, to heal and become part of a more normal functioning chimpanzee society in sanctuary with fewer or less severe psychological symptoms. The resulting papers are attached.

Appendix 3

The Chimpanzees

Jeannie

What our studies elucidated is the enormous suffering and often intransigent nature of psychological symptoms that chimpanzees in labs sustain. Jeannie was considered for euthanasia (at the time allowable by law) because her collapse under the stress of laboratory life was so complete. A gentle and extremely



Jeannie in sanctuary holding Gloria's hand

Photo Credit: C. Jackson-Rawlins

intelligent chimpanzee, Jeannie only eventually made enough of a recovery in sanctuary to allow her a quality life, accomplishable only through the individual and customized care she was given at Fauna. As is often found in human survivors of extreme traumas such as prisoners of war and victims of sexual abuse, violent crimes or combat, Jeannie could not tolerate touch—an essential ingredient for well being in chimpanzees, was easily over stimulated, was stressed and highly symptomatic after even the smallest changes in her environment or routine, and

required a predictable, safe and small world to establish a modicum of stability. Even then, unidentifiable stressors could trigger an array of symptoms which in humans would be labeled as of

psychotic proportion. After her years of solo housing at LEMSIP and endless use in protocols there and in previous labs, Jeannie was left hyper-vigilant, dissociative, prone to ritualistic behaviors, self-mutilating, often “unreachable,” and only ever so slowly able to gain enough trust to have moments, days or even weeks, where “Jeannie was OK.” Jeannie’s breakthrough came when she began to be able to tolerate, then offer, then ask for the soothing ritual of grooming. Very slowly, she came to trust select humans and chimpanzees which gradually over time allowed her some re-entry to an interactive social world (another requirement for health and well being in chimpanzees.)

In total, according to her records, in 1981, Merck, Sharpe & Dohme (MSD) sent Ch-562—Jean—to the Buckshire Corporation. In 1988, seven years later when she was around 14 years old, Buckshire sent her to LEMSIP. Jeannie spent 9 more years of confinement and laboratory use at LEMSIP. Then in 1997, Jeannie was rescued and sent to sanctuary. Jeannie died in sanctuary on New Years Day, 2007 at the age of 31. Jeannie’s story is neither atypical nor, in substance, different than that of hundreds of chimpanzees still held in U.S. labs. Jeannie as a “research subject” was a mess of psychological symptoms, with all their implications for data, and a living physiological compilation of invasive research recorded in incomplete, inaccurate and often convoluted research records. Arguing her worth to scientific research, except as a study of its casualties is unscientific, inhumane and unethical in a civilized world.

Rachel

Rachel is another example of so many chimpanzees currently held in US labs who were betrayed in the worst imaginable way. She was raised in a cross fostering situation where as a child she took bubble baths, slept with her foster mother, ate human foods, and essentially was someone's little girl. Then one



Rachel in sanctuary with Toby

Photo Credit: Fauna Foundation

day she was abandoned to a lab, as many chimps were when their size, strength and will no longer made them suitable or doable in a human world. She traveled in the first three short years of her life from indulgence in ice cream and toys to an empty 5'X 5'X7' cage. Rachel almost died when she was first left at LEMSIP. She would not eat and instead sat whimpering, inconsolably, in her cage. She was, however, used intensively in research from 1985 to 1997 before LEMSIP closed and Fauna rescued her. Rachel dragged a tire around with her for most of her early years at Fauna...a tire had been the only object in her otherwise empty lab cage for nearly all of those 12 years. Recently over the last few years, Rachel has traded her tire for a soft, plush, stuffed gorilla toy

which she carries everywhere with her ...holding it in her arms like a child or fixing it securely in her hip pouch as she climbs or uses both hands to play, eat or explore. All of this –i.e., her attachment to a far more animate object than a tire—is one of the many vast improvements she has made. When Rachel arrived at Fauna she exhibited such extreme self-injurious behaviors (and had obviously done so in the lab as her chin was scarred and her fingernails pulled off when she arrived) that she bore large, permanent calluses and scars on her face from her incessant banging her head, over grooming and severe injuries to her fingers and nails. Rachel's dissociative moments included attacking her own arm or hand as if it belonged to someone else and was a great threat to her. She continues to this day to obsessively pick at and hit herself on her ears...making for repeated injury and infection that must be closely monitored. Rachel has however come a long way and now is able to live comfortably with a gentle male chimp named Toby. She can also visit and live with some of the female chimps on a regular even if not full time basis. Like Jeannie, Rachel's past is ever present in her limited social skills and introverted defenses. It is still, sadly, not unusual at times to hear her whimpering softly and holding herself in a corner of one of her rooms.

Rachel like Jeannie and Tom suffered severely and it is without reason why she and others like her continue to be used in research. First, because of the ethical inhumanity of it and second, because how, with such intense and far reaching psychological symptoms and all we know of the effects of stress on data, could they possibly serve as valid models for vaccine efficacy, infectious diseases...or other areas in which LEMSIP or the others labs worked.

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