

Viewpoints: The Ethics of Animal Research

Richard T. Hull

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The Ethics of Animal Research II

I said in my introductory essay for this series, begun last May, that this debate over a matter of public policy is an appropriate form of celebration of our Constitution's bicentennial anniversary. For those readers whose knowledge of our country is not that of the native born, as well as for those of us who need, from time to time, a reminder of what we are, may I point out that the exchanges between Gary Ketcham, undergraduate student, and Boris Albin, M.D. and full professor of microbiology, exemplify the ideals of our constitutional society: freedom of speech, commitment to reasoned in-quiry, pluralism in ethical and religious orien-tation, tolerance of different viewpoints, mu-tual respect independent of station, and will-ingness to debate difficult policy issues openly and to let the informed democratic processes of our society arbitrate our differences.

We are not perfect exemplars of our ideals - I suspect none is. But from time to time we are able to rejoice in our common commitment to our constitutional principles even as we hotly contest divisive issues. Such loyal oppo-sition as displayed in these articles by Gary Ketcham and Boris Albin is, in many respects, distinctive of this nation of immigrants and the free, open, respectful, and fearless sharing of differences is what we mean when we say, "The Love of Liberty Has Brought Us Here."

My personal thanks to Gary and Boris for their many private hours of soul-searching discussion and writing, and for the stimulation of their results. In my own view, that they have found some common points of agree-ment, have greatly clarified their differences, and have instructed others in the process constitutes progress on the issues of animal ex-perimentation. Others who will now join in the debate are encouraged to do so.

-Richard T. Hull, Ph.D.

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Editor's Note: This is another in a series of debates-in-print on the controversial issue of the ethics of animal experimentation, prepared by Philosophy undergrad Gary Ketcham and Dr. Boris Albin, professor of Microbiology. These papers, as was the case in the initial exchange between the two, are reasoned, de-liberate arguments of opposing viewpoints that move away from the shrill and confrontational.

By BORIS ALBINI, M.D.
PRO

By GARY B. KETCHAM
CON

Ethical aspects of "animal research" and involvement of animals in teaching biology, medicine, and psychology caught the attention of the general public some years ago; many of the issues and solutions proposed, however, remain controversial and are far from being settled. Unknown areas of yet unexplored continents on old maps used to be covered with

Dr. Albin has asked: if compassion is not an emotion and is not an aspect of reason, what is it? In answer to this question I shall refer to a statement made by Supreme Court Justice Potter Stewart when he was confronted with the perplexing and elusive task of establishing a definition for pornography. In the case of *Jacobellis v Ohio* his response was: "I can't tell you

representations of fabulous beings; thus it is not surprising that in the current discussion on our topic, monsters lurking menacingly behind the thick foliage of a jungle of emotions and vested interests roam through the picture. Introduced by Dr. Richard Hull, Mr. Gary Ketcham and I had ventured last May into this sometimes frightful landscape. It seems to be that education is the increasing recognition of our ignorance. Such a conclusion must be frustrating to those who always know what the right decision to make is -- possibly even without knowing about what they are making the decision. With my weak and limited abilities to understand and to convince myself that I am in possession of absolute truths, I am happy when able to formulate meaningful questions and to pursue answers laboriously, possibly not as concerned for expediency as for honesty. This is why I feel encouraged to continue this joint exploration.

In his essay published in May 1987, in the Reporter, Mr. Ketcham points out that we indeed know that a dog can experience pain and that we should not be bothered by our lack of understanding of how pain and suffering in animals compares to those in humans. He points out that our experience suggests that a dog yelping after being hit has pain as we do, and that the legitimate and overruling response is that of compassion and prevention of this pain. Compassion obviously is a noble and essentially human experience. However, I see some problems with letting compassion, as an emotion, rule supreme. Experience and observation have to be scrutinized using our reason; as known to everybody, experience can easily deceive us. A monkey can turn the pages of a book; he may seem to read just like us. But we know that his use of the book is different from that of a literate human. This conclusion in which reason plays some role does not exclude analogies between human and monkey intelligence; but the reasoned conclusion based on the experience seems more reliable than the experience by itself.

It seems obvious that it is advisable to know more about a dog's pain before

what it is, but I know it when I see it, and this is not it." Poets, pundits, and philosophers have, at best, managed only a hazy silhouette in trying to lay bare the nature of compassion. Although it is linguistically unapproachable and indeterminate, in the field of human experience it is neither of these. It is linguistically inaccessible precisely because it is not an aspect of reason. It is not an emotion precisely because it is not reasoned or self-centric. I believe Dr. Albini would agree with this statement, that with the vast amount of scientific knowledge we have, it is quite often not capable of telling us what a "thing" is, but only how it behaves. Thus the predicament is not only a familiar one, but it is a functionally valid one as well.

Let us see how it behaves. The question before us now is whether compassion should comport with the dictates of rationality, or whether rationality should conform to the imperatives of compassion, when the two offer conflicting accounts of how we should proceed.

One "animal rights" position is that reason must be anchored in compassion, and further, that compassion is the steward of rationality when all is in situ (in its proper place). This is necessarily so because it is the only reliable, fixed reference point there is, just as navigation relies on the fixed reference point of a star. With this understanding, compassion establishes the parameters within which rationality is free to operate.

Animal experimentation transgresses these parameters because our understanding of compassion's preeminence is inverted. This results in the truanacy of reason which has lost its frame of reference. In its autonomous vacuum it sifts and sorts through the imperatives of compassion, selecting those things that comport comfortably with its own parochial designs. When compassion is strained through the rationalistic sieve in this manner, we are left with a diluted, highly inflected caricature of the pristine original. This we call ethics or morality. It represents compassion in its compromised, modified form. Remnants of the original.

We have a copious menu of

making conclusions and decisions depending on such conclusions. When committing ourselves to minimize pain in sentient beings, we should better know as much as possible about pain and about sentience. Taking shortcuts may lead to the achievement of our first intention.

A glaring example of a well-meant but unsuccessful attempt to affirm animal rights was the passing of pound laws prohibiting the use of unclaimed stray animals for research. Whereas in the past, several thousand dogs -- out of 15 million "terminated" each year in pounds -- had been used in research, after passing of restrictive pound laws, several thousand dogs are bred every year specially for use in research -- to perish in addition to the 15 million collected in pounds. The net result thus is an increase of animals "terminated" each year, obtained in exchange for the purely emotion satisfaction that "my" pet can never end up in research.

What is it that usually raises compassion? It seems that the emotions and thoughts that feed into compassion crystallize around three concepts: death, pain, and suffering. Pain usually is defined as a sensation that physiologically alerts the organism of harm done and danger approaching; pain makes us retract the hand from hot water. By itself, it has positive value for survival but seems neutral in the context of ethics; and obviously it does provide a basis for much torture and distress. The latter, however, more properly belongs to suffering. Suffering can be described as anticipation and reflection of pain and death. It is characterized by anxiety, alarm, terror, insecurity, paralysis. On the other hand, suffering -- but never causing suffering -- has been viewed as possibly a benefit. Sometimes a cathartic effect is attributed to suffering. We may perceive the biblical story of Job to express such or similar notions, as do many of the initiation rites studied by anthropology. Very much simplified, pain may be considered as a reflex mechanism made conscious, and suffering as the integrated conscious experience of pain.

Death, as the unavoidable companion of life (at least in the biological sense of life), is familiar to us

ethical/moral schemes that represent the variegated degrees of compromise that compassion has been subjected to. The Nazi regime is an example of an utterly complete, total subordination of compassion to rationality, with no compromise whatsoever. The current U.S. model is what could be called a "selective acquiescence" ethical system in which compassion's preeminence is acknowledged on a "pick-and-choose" basis.

Machiavelli is credited with popularizing the idea that the end may justify the means if the end entails a significant benefit. We shall call this the "means doctrine." Hitler took it all the way, no holds barred. We have chosen the "selective" route. Compassion serves a sextant function. It gives us our bearings. It is anamorphic. The "sad eyes" of humans and animals which Dr. Albin refers to are apprehended through compassion (not as pity, but as love). But for animals it is rationalistically suppressed pursuant to the "means doctrine" and "selective acquiescence." The selectivity becomes species distinction.

I have said that when we ask the question: "Why is human experimentation proscribed?", the answer we get is: "Because of the pain and suffering it would entail." Obviously, if no pain or suffering were involved, we shouldn't have a problem. This dismantles the species distinction category as irrelevant, and puts animals in the same sphere of protection and concern as humans, since they, too, experience pain and suffering.

Dr. Albin said, "Rationality . . . does not survive any curtaining of argumentation or exclusion of arguments." In terms of proffering an argument this is true. In terms of executing the mandate of the argument it is quite false. It is the execution of the argument for animal experimentation that compassion proscribes, and quite frankly, the reasoning must be grievously contorted in order to tender such a disfigured argument.

John Morley gives us a different view of the "means doctrine." He writes, "The means prepare the end, and the end is what the mans have made it." In effect, this states that no

all. Still, recent debates on death in relation to organ transplantation have underlined the problems inherent in its definition. It seems quite acceptable to consider death occurring without pain or suffering in the dying: for example, death under anesthesia. Death obviously always means the termination of "biological" life, and inflicting death, the shortening of the life span. "Nature" seems to depend more or less on elaborate food chains, on the predator-prey relationship, on life being destroyed for life's sake.

Diminishing pain and suffering and prolonging life seem generally accepted as goals for ethical human conduct. Understanding "life" as subsuming all living forms immediately shows us the problems in accepting this statements as an absolute prescription. Even vegetarians depend on living organisms to feed upon; and we will have confrontational and competitive relationships with animals. A child may be attacked and mutilated by a dog; rats infest houses and cities and transmit diseases potentially fatal to whole populations; and microbes infect human beings and kill them. Few would suggest permitting a baby to die of pneumonia to prevent the mass-murder of millions of pneumococci. Thus, again, we need some acceptable modus of grading life forms as to their rights for exemption from pain, suffering, and death; and we can subscribe to the first sentence of this paragraph as the ideal for which we strive even though we know that we will never be able to reach it "in this life."

It seems possible to accept the death of an animal that is associated with no or minimal pain, reasoning from the "natural" way of life of animals. If indeed we primarily attempt to free animals from "unnatural" intrusions into their lives by humans, then we have to consider that animals in the wild usually have rather short and usually violently terminated lives, and that many animals violently terminate other life. Thus, the intrusion of man into animals' lives in the framework of the use of animals in science does not seem appreciably to diminish animal life; on balance, it seems likely that the majority of animals used in science experience less pain or suffering than

good end can be achieved by repugnant means. We would do well to remember this the next time we find ourselves saying that animal experimentation is a horrendous but necessary practice. It requires an anagogic cognizance. These are purloined benefits.

Compassion does not lend itself to the ranking scheme of hierarchies of signification. It is all embracing. Hungry children are hungry children wherever they may be, whosoever they may be. Pain is pain regardless of who is experiencing it. It does not cease to be pain just because it is someone else's. This is the equanimity of compassion.

But we impugn the legitimacy of compassion by mischaracterizing it as an emotion, by labeling it as spurious, by suppressing it as inferior, by a flim-flam juxtaposing of its preeminence, by inducting it and subordinating it to the stricture of rationality to make it comply with its provincial findings. The idea that reason is its own regulator is a bit like the notion of the fox guarding the hen house. It is an invitation to self-predication. The eyeball cannot see itself, and the tongue cannot detect what the ears were meant to hear. It is compassion that tells us that animal experimentation is something NOT to do.

Dr. Albini refers to two competing principles: a) animal rights, and b) human rights, neither of which, he says, can be absolute. While this may express his personal view, it does not describe the practices that are employed now. The human right to autonomy is considered absolute. Academic research does not exist in isolation. The context of its genesis is a social environment that harvest animals as a commodity for mere convenience. Society consumes cosmetics, fingernail polish, white-out, fur coats, leather jackets, down-filled clothes, and porterhouse steaks. There is a litany of other products and practices which are all predicated on the assumption that animals are an expendable commodity for even the most trivial reasons.

Where is the compelling social imperative here? We are not even operating on the concept that the ends must justify the means which, itself, is

animals in the wild; it would indeed be of interest to determine the average life spans of wild animals and of those used in research.

The question of sentience in animals, or of the various forms and degrees of sentience in various animal species, therefore, remains of basic importance for the ethics of our relation to animals; and here is an area in which collection of data and enhancement of our understanding are necessary and feasible. Life-scientists and especially health-related professionals are interested in obtaining better insight into this question, not the least because their lives primarily are dedicated to alleviating pain, mitigating suffering, and increasing the quality of all life.

In his earlier essay, Mr. Ketcham addresses the relation of rationality and compassion. The statement was made that compassion is not an emotion, but apparently, as presented in the essay, it also is not rationality; what, then, is it? Compassion could mean an emotion tested by reason and weighed against other emotions; defining compassion as not being purely emotional must allow some participation of rationality. In addition, Mr. Ketcham speaks of "unbridled rationality." To me, this seems a *contradictio in adjectis*. Reasoning by itself is a bridle, its own bridle. "Unbridled rationality" can be conceived only as devoid of all relation with emotion and reality; as one track of reasoning uncoupled from the integrity of our personality, memory, and outlook. Reasoning never can reject a priori any statement or judgment; it is against the nature of reason to limit available input into reasoning; "(only) when reason sleeps, monsters awake," Goya wrote on one of his etchings.

Without contradicting itself, rationality cannot be authoritarian or unconcerned. Only truncated rationality, applied to one train of thought, but not to others, leads to inflexible ideological systems. "Unbridled rationality" is cold, inhumane; it does not arise from too much reasoning, but from the prostitution of reasoning to greed for power or money, to misunderstood

already an eviscerated moral compromise. The ends need not be at all meritorious in order to justify this carnage, according to society's prevailing values. This is the social context within which academic research is conducted. It would be ludicrous to suggest that this impoverished set of social values does not infest the academic research institution. To the contrary, these institutions are considered the melting-pot for these social values.

Consider several academic examples*: 1) At the University of Florida a psychology professor spent six years and \$267,000 in federal money to determine whether male field mice would prefer to have sex with virgin mice or experienced mice. This study was characterized as "basic research." 2) A University of Florida experiment proposal was unanimously approved by the animal care committee [whose meetings are open to the public pursuant to state law] in which 22 dogs would be anesthetized and would have their lungs injected with fluid in order to test the efficacy of the Heimlich maneuver on drowning victims. Once the test was completed, the dogs that survived were to be killed. Massive protests nationwide, including objections from Dr. Henry Heimlich, halted the experiment. Heimlich characterized the research as "a needless experiment that must be classified as cruelty." 3) Also halted by that protest was a proposed research project that was to study the effects of weightlessness on bone growth. In this experiment cats were to be placed in body cases and suspended with their hindquarters off the floor. Some of them would remain on their front paws for 90 days.

Necessity is not the "mother" of these inventions. At the heart of this kind of research is the absolutist argument that man has an "absolute" right to acquire any kind of knowledge, by any means, and at any costs where animals are concerned. At the very least, any circumscribing principle is too dim to be perceived.

There seems to be little point in discussing "degrees of sentience" and purported uncertainty about the "comparability" of a dog's pain and

missionary zeal, to defense of one's own unreasonable position. True rationality is not the enemy of emotion, but of those who use emotions to achieve their selfish goals; rationality is emotion's sublimer and educator.

Mr. Ketcham also has explored the concepts of "vertical" versus "lateral" differentiation. He agrees that life forms differ from each other, and I concur with him that such differentiation should not include generalizing value judgments. Such generalizing value judgments indeed have poisoned much of our past and, I am afraid, will continue to poison our future. On the other hand, there is nothing wrong in grading apple trees according to their productivity, or designating temperatures as high or low, as long as we clarify the specific and restricted aspect in which grading is attempted. Thus, if there are a variety of degrees of sentience among living beings, a gradation can be legitimately proposed -- obviously, a gradation as to sentience and not overall value.

Mr. Ketcham, in his earlier essay, cites me as writing that "animals do not have the one right 'not to suffer';" but he does not cite the full statement. What I had suggested in my statement was that animals perhaps did not have one right, but more than one: namely the right not to suffer and the right to improve the quality of their lives. Since these rights sometimes clash -- as, for example, in medically-oriented research -- neither can reign absolute. Our judgments pertaining to these two rights have to be made in the force field of which they represent the poles. Thus, decisions about animal experimentation have to be made within this field of opposite forces, and decisions have to be made for each individual case on the basis of reasonably flexible guidelines that do justice to both principles.

Some animal rights activists still condemn medical research as useless: "Run, eat carrots, avoid salt and cholesterol, and you don't need medicine." Unfortunately, reality does not attest to the truth of such statements. Obviously, a "healthy lifestyle" has more to offer than to rally people into some "accepted" way of social belonging and fashion; it is of

suffering when these values ultimately are whittled away by some rationalistic scalpel that presupposes the absolute right of human autonomy with regard to animals.

The U.S. Supreme court has established a litmus test which it uses to proscribe invidious discrimination against blacks. While this model, as applied to animal experimentation, would fall short of the standard embraced by some animal rights activists, it would at least be far superior to the standard being employed now, which is something less than stringent. This Supreme Court Model is a workable substitute that can at least be used to establish minimum criteria for animal research.

All animal research would be subject to a "strict scrutiny" inquiry that presents a four-pronged standard that must be met: 1) All experiments that cannot be conducted humanely, in terms of pain and suffering inflicted, must be precluded; 2) The research must be addressing an issue that reflects a grave and compelling social imperative for such inquiry; 3) All possible alternatives for such research must have been demonstrably exhausted; 4) It must be demonstrated that the research has a significant possibility of producing a substantial impact on the problem it claims to be addressing.

No single standard can fairly claim to represent every "animal rights" position. There is diversity in the animal rights community just as there is diversity in the research community. However, if this standard was established as a minimum standard, a vast amount of animal experimentation would be precluded or curtailed. Most, if not all, animal experimentation in the private corporate sector would be proscribed by this standard. It is here, in the private sector, where some of the most flagrant, repugnant violations occur with nothing more than the profit motive as a justification. Many of these practices are anachronisms that grew from an impertinent set of circumstances, from a less conscious period in human history.

If we cannot manufacture and market nail polish without exacting these tremendous costs from animals

utmost importance. Past records and our quite incomplete knowledge of life processes and health and disease suggest, however, only a limited value for preventive medicine; and even progress in preventive medicine depends to a large extent on scientific experimentation, often including animals. We need medicine and the other life-sciences; and animal experiments have been shown to contribute essentially to the improvement of health care and life quality. Donald Barnes stated a year ago that animal experiments are useless; he knows it, he said, from his own experience. Mr. Barnes had done experiments on rats for years, and he now feels that these experiments were completely senseless. I cannot contradict Mr. Barnes' assessment of his experiments. However, individual failure cannot justify generalized statements about animal experimentation.

Well being of animals and minimizing pain and suffering are widespread concerns among physicians, psychologists, and scientist interested in medicine. Indeed, the first guidelines for a humane treatment of animals came from an association of scientist in Great Britain as early as the 19th century. Current regulations of animal use in research and teaching are stringent. In our University, all use of animals in teaching and research is reviewed by a rather large committee including non-scientists and community representatives. Furthermore, all applications for research use of animals that pass the scrutiny of this committee are reviewed by the granting agencies. Finally, all research projects active at our University that involve animals are monitored regularly with respect to animal welfare by the institutional committee (Laboratory Animal Care Committee). On the other hand, advances in medicine and public health as well as veterinary medicine and ecology easily can be inhibited by over regulation. This could lead, in the nearest future, to deterioration of the life quality of our nation. As I have suggested already a year ago, the sad eyes of dogs, monkeys, and rabbits looking at us from behind the bars of their cages in our laboratory facilities

in product testing research, then we are obliged to relinquish our claim to that product. It fails all four requisites of this standard. What claim can it make to necessity?

The research profession is a coterie that shares responsibility for its practices. It is an amalgam of scientists who learned their trade in the academic institutional cauldron that inculcates these values in the scientific community, and subsequently in society. By curtailing the viable options of animal research, we can bring a force to bear on the scientific community to accept its obligation to explore other alternatives in a wholesale, expedient, and exigent manner. Right now there is no sufficient impetus for prodding researchers into abandoning their dilatory tendencies and inertia in advancing toward the goal of eliminating reliance on animal experimentation. It remains a low priority issue that is sitting on a back burner with a low heat setting. We have no right to expect the dictates of compassion to be easy or convenient. This is, after all, what sets it apart from the carnal and the mundane.

"The world that we have made as a result of the level of thinking we have done thus far, creates problems that we cannot solve at the level we created them."

-ALBERT EINSTEIN

"I did not arrive at my fundamental understanding of the universe through my rational mind. A new type of thinking is essential if mankind is to survive and move towards higher levels."

-ALBERT EINSTEIN

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must not make us forget the sad and imploring eyes of the patients in our hospitals.

The debate with Gary has been a most rewarding experience for me; I have confirmed my old conviction that a real friend is the one with whom it is a pleasure to disagree.

COMMENTARY ON ALBINI AND KETCHAM

BY

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The themes advanced and developed by Boris Albin and Gary Ketcham in this and a previous (May 7, 1987) edition of The Reporter involve several key concepts: sentience and suffering, life and death, compassion, contradictory rights and conflicting values. I propose to recapitulate those developed themes in order to assess what it seems to me to have been achieved by these two debaters in the way of clarification, what still remains obscure, and what has gone unaddressed. For me the issues of which they write are live ones, and my own mind is unsettled on many points. This recapitulation is thus a personal statement to them both. It is also intended as an invitation to others of the University community to offer their own contributions, pro and con, so as to advance our mutual understanding of our practices.

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Sentience, simply put, is the capacity to feel pleasure and pain, either as sensations or as attributes of other sensations or experiences. Albin and Ketcham agree both on this definition and on the prima facie negative value, or evil character, of pain and the prima facie positive value, or good character, of pleasure. What neither has explicitly addressed is the question of whether pain and pleasure yield neatly to quantification--a presupposition of both their positions.

Consider two adjacent wards in a rather odd hypothetical hospital. In one are 100 persons each with a twinge in the big toe of the right foot; in the other is a single patient agonizingly burned over 70% of the body. You are a physician who has an equal amount of time to devote to one or the other ward but not both, and an amount of pain killers that is adequate to alleviate the discomforts of either the burn victim or those with big toe twinges but not both. To which ward should you turn? Considering only the pain in each ward, which ward has the greater quantity of pain?

Most persons' share the intuition that the greater amount of pain is surely in the ward with the lone burn victim, and would, in the position of the doctor, devote their available time and resources to alleviating that individual's suffering. But this presupposes that the pains in the two wards are quantifiable and commensurable.

As you are about to minister to the single burn victim, you learn that the other ward contains not 100, but 1,000 or 10,000, or even some larger number of patients, each with a twinge in a big toe. Is there some number of such individuals such that, ability to treat being equal, one should favor their welfare over the burn victim's?

I believe most persons share equally in the intuition that no number of minor painful states of whatever duration can sum to a morally more compelling quantity of pain than that of a single person with the intractable, unremitting pain of our burn victim. This, in turn, seems to support the intuition that, if we could but eliminate the suffering of the burn victim by causing an even indefinitely large number of big toe twinges, that would be an enormously improved state of affairs showing proper compassion to an unfortunate sufferer.

How thoroughly this intuition illuminates the debate between Albin and Ketcham is not clear, for the analogy between the twinges in human toes and whatever pains and discomforts laboratory animals experience is, at best, imperfect.

However, it is clear that Albin thinks that animal discomfort and pain may be graded as to degree of severity, that such gradations are morally relevant in that the more severe degrees require greater prospective good to offset them, and that such graded animal sentience is straightforwardly commensurable with human as well as animals states in that it makes sense of advances in our abilities to reduce human discomfort, pain and suffering as offsetting the deliberate use of animals in research which causes discomfort and pain. And it is clear that Ketcham holds that animal and human discomfort, pain and suffering are of a kind, so that we are no more justified in conscripting animals against their wills into our medical research than we would be in doing so to humans against their wills. But if, as in our hypothetical example, either pain per se or different types of pain do not summate quantitatively, a major basis for maintaining straightforward commensurability would seem to be lost.

However, it does not follow from the tentative conclusion that in some significant way pains are not fully commensurable either that visiting pains on animals is morally neutral (a possible pro-research inference), or that it is always wrong (a possible con-research inference). Indeed, a closer look at our hypothetical example seems to indicate that, were the situation altered so that the pain of the burn victim could be alleviated by visiting twinges on a very large

number of big toes, any amount of toe twinges would be better than the suffering the suffering of one burn victim. If animal pain and human pain are similarly incommensurable, it may be that any amount of animal pain is preferable to many instances of really severe human suffering.

How one could discover whether or not that is the case, either in general or in specific cases, is unclear, as is unclear whether whatever discomfort there is to laboratory animals employed in sex research (it strikes me that the rat's experiences in that laboratory are, on the whole, rather pleasant!) is preferable to the psychological pain of men who experience severe sexual dysfunction and whose dysfunction may, at some future date, be treatable as the direct or indirect result of the research in the laboratory to which Mr. Ketcham alludes.

Hard, careful, cross-disciplinary thinking will be necessary to resolve these difficult issues on the character and commensurability of pain. Many, however, have thought that the more significant concept in this debate is not the pain of sentient beings, but their suffering.

While it is common to speak and read of the suffering of animals, under Albin's definition of it as "the anticipation and reflection of pain and death...characterized by anxiety, alarm and terror", it is not at all evident that either animals as a kingdom or laboratory animals as a set of species all have the capacity for suffering, as Ketcham's "animals (are) in the same sphere of protection as concern as humans since they, too, experience pain and suffering" presupposes.

It is certainly the case that some animals, even laboratory animals, anticipate pain and discomfort in a manner that is characterized by anxiety. But animals display anxiety at stimuli which are not painful but, rather, unfamiliar. It is certainly true that some animals--ones rather higher on the phylogenetic scale than rodents, display terror and alarm. But it is not at all clear that such displays are typical of or even common among laboratory animals, either as the result of confinement or of experimentation. And it is rare that we have any evidence that species from which laboratory animals are drawn anticipate death in any way whatsoever. Although clearly some animals (e.g., dogs and geese) give evidence of a level of understanding of death, perhaps more in the sense of experiencing loss of a master or mate, there is not reason to think that such animals experience the prospect of their own death as a terrifying loss, or that experimental animals have the complex of associations of death with any of the notions, such as final judgment, or the experience of nothingness, that humans are prey to.

Yet another dimension of human suffering that does not seem present in animal experience is the sense of tragic loss experienced by and about one who sustains a crippling injury or catches a fatal disease. The film, "Dax's case," well known to students of medical ethics courses, details the despair of an active young man blinded and crippled in a fire. His physical pain may arguably be supposed similar to that of a similarly injured animal, but his suffering, deepened by the sense of his life's plans and projects being shattered, his natural expression of vitality celebrated in sports forever ended, and his exceptionally superior capacities as a pilot

destroyed, negatively infuse his sense of the value of life to the point that he has grave doubts as to whether, when rehabilitated it will be worth living. And, confronted with such despair, his anticipation of the painful rigors of the months of surgery and physical therapy that lie ahead becomes an anticipation of being tortured by his well-meaning care providers.

I am not convinced that the equation of human suffering in its most extreme forms with that of animals in laboratories is defensible. Whether any laboratory animals can suffer as profoundly as humans do is doubtful; whether most laboratory animals suffer at all is doubtful; and whether the magnitude of much human suffering can't even overcome the visitation of some pain and discomfort on even relatively large numbers of animals is doubtful. But I think neither Ketcham nor Albin has shown us how to resolve these doubts. And I do not think these doubts are a form of speciesism, at least in an invidious form, since they are rooted in observation of the phenomena and not any particular self-serving preference for human kind.

At the same time, both Albin and Ketcham agree that the sentience of animals, together with whatever degree of suffering they are capable of, is an important moral consideration. Albin thinks it requires imposing strict harm/benefit standards, balancing or offsetting animal discomfort and pain with gains in our capacity to minister to the ills and misfortunes of both animals and humans. Ketcham thinks it requires minimally passing the test of strict scrutiny turning on three standards: a compelling social imperative of

a grave nature, demonstrable exhaustion of all alternative solutions (presumably, all non-whole-animal alternatives), and demonstrable ongoing success of the research. I sense substantial agreement here despite the linguistic differences of expression.

What is of concern here in the strict requirement of demonstrable benefit over harm by Albin and the strict scrutiny recommended by Ketcham, is that both seem to preclude much basic research which aims at fundamental understanding and not specific therapeutic or problem-oriented goals. Too often the history of science has been characterized by basic science advances which have only later been surprisingly productive of solutions to problems. My fear is that, with too strict a standard of prospective and concurrent scrutiny, basic scientific research may be snuffed out, to the detriment of the longer term prospects of applied research. My suspicion is that it is basic research which provides us with the paradigm shifts--the revolutions in thinking about problems--that prove the well-springs of new lines of applied research, so that the latter may well become sterile if the former is curtailed through impatient demands for demonstrated relevance to grave social imperatives or demonstrated positive harm/benefit ratios.

My argument here turns only on principles which Albin and Ketcham accept. It does not turn on a supposed right of the human species "to boldly go" where thought has not led before, to satisfy curiosity for curiosity's sake, predicated on the value of knowledge per se and the consequent validation of the juggernaut careenings of scientific research wherever it may lead. I am too much of a pluralist, too troubled by the conflict of the goods of knowledge and compassion, to

wear that badge comfortably.

Albini is a pluralist as well, in holding that animals (and humans) have a right not to suffer, and that animals (and humans) have a right to improve(ment of) the quality of their lives, for he sees these rights as not linearly ordered or prioritized. Ketcham seems on the whole monistic, holding to an exclusive reverence for sentient, animate life and an abhorrence of any exploitation which causes predictable pain, suffering or death. His recommendation of strict scrutiny tests thus appears to be a strategy born of the need to compromise in order to move toward his goal of eliminating all experimentation on animals.

Perhaps the greatest unresolved difference between Albini and Ketcham is the moral status of death caused by human killing. While both would agree that causing an animal a painful death or a death attended by suffering is exceptionally difficult, if not impossible, to justify, Albini sees the painless killing of animals from which some benefit may be derived to be ethically acceptable, even if there exist alternative routes to the same benefit which do not involve killing. My speculation is that this shows a difference in Albini's understanding of death itself and of the inherent value of life itself.

Ketcham's view of death itself is not so clearly dissected out of his remarks, for he has consistently interwoven these themes with his doctrine of compassion--characterized, to be sure, as respect for life and abhorrence of suffering, but operationalized as not visiting suffering upon sentient, animate beings (hence the commitment to preventive medicine and to non-experimentation) rather than as

alleviating suffering of such beings. In the language of traditional Hippocratic medical ethics, Ketcham takes the doctrine, Primum Non Nocere ("Above all, do no harm") to its logical extreme, whereas Albini tempers it with the more modern injunction to benefit, and sees neither the principle of nonmaleficence nor of beneficence as superior in all cases (hence his commitment to justifying visitation of death and pain in pursuit of benefits, such as methods of extending life and alleviating suffering).

Albini's position thus emerges as paradoxical in accepting the necessity of doing evil to promote greater good, while Ketcham's position emerges as paradoxical in tolerating preventable evil in order to avoid doing evil. We see that ultimately these differences are the classic differences between persons committed to consequentialist and non-consequentialist modes of ethical reflection and decision-making, and that the debate between opponents and proponents of animal research is a recent chapter in a centuries-old conflict between two fundamentally different schools of ethical reasoning.

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I said in my introductory essay for this series, begun last May, that this debate over a matter of public policy is an appropriate form of celebration of our Constitution's bicentennial anniversary. For those readers whose knowledge of our country is not that of the native born, as well as for those of us who need, from time to time, a reminder of what we are, may I point out that the exchanges between Gary Ketcham, undergraduate student, and Boris Albini, M.D. and Full Professor of Microbiology, exemplify the ideals of our constitutional

society: freedom of speech, commitment to reasoned inquiry, pluralism in ethical and religious orientation, tolerance of different viewpoints, mutual respect independent of station, and willingness to debate difficult policy issues openly and to let the informed democratic processes of our society arbitrate our differences.

We are not perfect exemplars of our ideals--I suspect none is. But from time to time we are able to rejoice in our common commitment to our constitutional principles even as we hotly contest divisive issues. Such loyal opposition as displayed in these articles by Gary Ketcham and Boris Albini is, in many respects, distinctive of this nation of immigrants, and the free, open, respectful, and fearless sharing of differences is what we mean when we say, "The Love of Liberty Has Brought Us Here."

My personal thanks to Gary and Boris for their many private hours of soul-searching discussion and writing, and for the stimulation of their results. On my own view, that they have found some common points of agreement, have greatly clarified their differences, and have instructed others in the process constitutes progress on the issues of animal experimentation. Others who will now join in the debate are encouraged to do so.