

Reply to Singer's "Blind Hostility" (43958C)

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We were not surprised by the tone of Peter Singer's response to our commentary but we admit to astonishment at the minor points of criticism that he selected to attempt to rebut. To paraphrase part of his reply to our first, abbreviated critique (1) of his chapter (2), we conclude that his failure to respond to our disclosure of his numerous distortions and selective quotations, or to our discussion of the flimsy basis for his philosophical arguments, or to our conclusion that his position reflects misanthropic and anti-science sentiments, constitutes his reluctant endorsement of the validity of these points in our critique.

The Non-Issue

We readily admit that we were in error in originally suggesting that Singer had fabricated a quotation. We are puzzled, however, that Singer is making such an issue of an error that we corrected before publication. The reason that Singer received a second revised manuscript for his comments in January of 1995 was that the manuscript was critiqued by two outside reviewers, the four members of the Publication Committee, and the Editor-in-Chief, many of whom made individual comments and suggestions for minor revisions, primarily in the tone of certain wording. This process took several months. We readily agreed to the proposed changes because none of them was substantive, and none pertained to any of the material Singer brought up for discussion in his original response. (We had deleted a reference to our erroneous allegation which was inadvertently left in our first revision, and to which Singer objected, before we even received his initial commentary.) When some 8 months passed without a reply from Singer, we assumed that he was using the time to prepare a more thorough rebuttal to our major criticisms. To our surprise, his response when finally received was almost identical to his first one.

We did acknowledge in the original manuscript as well as in the revised version that we are aware that

the American Council on Science and Health is critical of the use of huge doses of chemicals to test for carcinogenicity in animals.² However, we stand by our claim that Singer distorted Elizabeth Whelan's position and that of the ACSH on animal testing. In fact, we are baffled by Singer's repeating the opening of his paragraph on Whelan:

"After decades of mindless animal testing, there are now some signs of second thoughts. Dr. Elizabeth Whelan . . ." There is not the slightest indication here of a blanket condemnation. . . .

In the first place, if the decades of testing were truly "mindless," then maybe Singer ought to say "signs of *first* thoughts." In any case, Singer's selection of quotes from the article (some of which were actually the words of officials of the Environmental Protection Agency, quoted by Whelan [4]) do indeed convey a negative attitude on the part of Whelan and the ACSH toward animal testing in general. It is not so much what is said, but what is left out. If we did not know about Whelan and the fine work her organization does in promoting public awareness of valid health concerns and risks (as opposed to the hysterical "toxin on every plate and carcinogen in every cup" risks touted by those she labels "toxic terrorists," who misuse animal tests [4]), we would have thought her to be a member of the animal liberation/animal rights movement (ALARM), based on Singer's quote. By itself, the paragraph quoting Whelan out of context is bad enough. But it follows five full pages of text denouncing the use of animals in product-safety testing and drug research. The paragraph quoting Whelan is then followed by a quotation from a source listed as an American Medical Association representative saying that "frequently animal studies prove little or nothing and are very difficult to correlate to humans" (2, p58). To us, all this constitutes "blanket condemnation"—and is very likely why Whelan replied to our inquiry in

¹ See p 109 for affiliations and address for reprints.

² The rationale for using such high doses is that the test animals (usually rats or mice) have relatively very short lifespans. Scientists who support these tests argue that the effects of high doses in animals over a short time may be predictive of the effects of low doses in humans over many years. This problem is complicated by the fact that very high doses of many substances may be carcinogenic by mechanisms that are not necessarily related to the composition of the chemical or to its long-term use. See Ames and Gold (3) for a discussion of this issue.

the way that she did. As for Singer's denial of making "any such blanket condemnation of the scientific value of animal testing for establishing toxicity," we did not say that he did. However, with the exception of the paragraph he quotes beginning, "Developing completely adequate alternatives . . ." (2, p61), there is little or nothing else written in the entire chapter that might lead anyone to believe otherwise.

Worthless Analysis?

What of our "scientifically worthless" and "spurious" numbers about incorrect references? We are happy to document how we arrived at the numbers and how we selected the references to check for accuracy. When we first read Singer's book with the intent of doing a critical analysis of the chapter on animal experimentation, we noted a number of distortions that were apparent without even checking the references. For example, we were familiar with Harlow's classic spoof of the travails of editing a psychology journal (5), and we were disturbed to see how Singer misportrayed it as a "semihumorous" acknowledgment that most experiments in psychology are worthless (2, p73). We were also familiar with the history of the thalidomide tragedy and with the development of nerve gases and believed that Singer had presented them in an erroneous manner (2, pp57, 27). We also noted obvious errors in his list of references (Notes), such as his making "S. F. Paget" the editor of G. E. Paget's *Methods in Toxicology* (2, p276) and his listing of "*Federal Proceedings*" [sic] (2, p278)—a journal that does not exist. (We realize that these last examples are minor errors, but they are indicative of what we discovered to be carelessness of rather major proportions.) As we began looking up some of the specific cited references, we found misleading presentations

that were not readily apparent from simply reading the chapter, as we have documented in our commentary. We were also initially surprised to discover how many references that we could not find or had considerable difficulty finding. Thus, we began tabulating the errors. A listing of the citation errors we found is given in Table I.

Now, were the references we checked randomly selected? Not entirely. First, we did not seek references with the idea of adding up citation errors. We were much more interested in finding the references so that we could compare what was written in the papers to what Singer said about them. We would have willingly traded being able to make the charge that Singer is sloppy or nonchalant regarding references for an easier time finding them. Second, we decided early on that we could not do a completely exhaustive review of the chapter, looking up every reference. Had we done so, our commentary would have been about twice its length. Who would publish such a tome? Who would read it? Finally, we did not bother to check any of Singer's references to the works of other antivivisectionists. We and others are all too familiar with their unreliability (6–13). In any case, even if all of the references that we did not check were completely correct, Singer's error rate would still be 12% overall at a minimum. We expect our high school students to be more careful than that.

"Time-Saving Proposal"

We agree that it "always requires more space to explain why an allegation is false than it does to make the allegation." That is why our commentary, which documents how Singer inaccurately portrays the conduct of animal research, particularly in the United States, is so long. And we are grateful that Singer

Table I. Citation errors found in a sampling of references in Peter Singer's chapter, "Tools for Research"

I. Major errors	
A. Articles not found:	Note 5: <i>The New York Times</i> , November 14, 1973. Note 92: <i>Health Care</i> 2 (26), August 28–September 10, 1980.
B.* Articles that were difficult to find because of errors in journal volume (notes 12, 31, 63), page numbers (notes 31, 44), date or year (notes 44, 46, 62), editor's or author's name (notes 57, 60) or journal title (notes 82, 87).	
II. Minor errors: Wrong journal number (notes 14, 44) or journal title (notes 37, 61, 89).	
Total:	16/49 checked references are erroneous, 12 seriously (does not include articles in journals and newspapers for which no page numbers were given).

*Some of these references contained more than one error (e.g., 31 and 11)
Note. Based on Ref. 2.

wishes to spare readers the tedium of a lengthy reply. We are, as we mentioned at the beginning of this reply, surprised at Singer's selection of primarily trivial topics to defend, however, and at his ignoring our most critical disclosures. We believe that his selective quotation of statements made by at least three authorities (Refs. 20, 34, 42 and 70 in our critique), as well as his inaccurate presentation of the contents of two scientific papers (Refs. 41 and 62 in our critique) and a newspaper article (Ref. 73 in our critique) are seriously misleading. Furthermore, he failed to state or presented in a misleading manner the objectives and rationale for many experiments that he cited (e.g., Singer's Notes 1, 2, 8, 16, 17, 35, 44, etc.), and we believe he misrepresented the methods used and their effects on the animals (e.g., Note 7), or the significance of the results (e.g., Notes 31, 33). (This listing is not exhaustive.)³

“Scare Quotes”

Singer says that we make use of “scare quotes.” We must plead ignorance of this term. We use quotation marks around direct quotes that are not otherwise set off from the text, of course, and in place of the words “so called” or “supposed.” We also use them to convey a sense of irony. These are accepted uses (16), and are not intended to scare anyone. We used quotation marks around “Notes” for clarity, because that is what Singer called them (as opposed to “references” or “sources cited,” or even “endnotes,” all of which have a clear meaning). In our opinion, the meaning of our various uses of quotation marks should be clear from their context.

Singer also complains that we said he “ ‘presents [him]self’ as an ethicist and moralist.” Recall that this phrase ends the following sentence in our abstract: “The lack of objectivity and reliance upon distortion and selective quotation that characterize Singer’s ‘scholarship’ are surprising when one considers that he . . .” We are aware that he has written major articles, including one for the *Encyclopaedia Britan-*

³ We are not alone in our belief that Singer misrepresents facts to suit his own purposes. A recent book review by Singer for *Nature* (14) was answered by four letters from eminent scientists and supporters of animal research, pointing out inaccuracies made by Singer in the review (15). One of those letters was signed by the presidents of four prestigious U.S. scientific societies and by the executive director of a federation of 18 national societies.

⁴ The esteemed *Encyclopaedia Britannica* is not above criticism in its choice of authors for articles. The 1991 edition contained an article on dogs that was written by antivivisectionist Michael W. Fox. The article contained a passage that misrepresented their use in biomedical research and questioned the scientific validity of such research. Thanks to the many letters from supporters of biomedical research to the encyclopedia's editor, the offensive and inaccurate passage was deleted from the 1993 edition, despite strong objections from Fox.

nica,⁴ and books on ethics and that he has edited numerous books on ethics and philosophy. His works may be widely used, as he claims, in philosophy and/or ethics courses in various countries. Nevertheless, these facts do not exempt him from criticism of what we consider to be unethical behavior.

With regard to Singer's philosophical position, many philosophers are not impressed either with Singer's works or by his arguments. In addition to Peter Carruthers' critical analysis (17), which we mentioned in our commentary, there is a recent book by Richard Sorabji (18), who states that the arguments of both Singer and Tom Regan for the equality of animals with humans are one-dimensional and as such are not persuasive. He also faults Singer for having “been led by his principles to allow the killing of newborn haemophiliacs and Mongoloid children, if the parents intend to replace them with a happier child and there is no possibility of adoption” (18, p215. The reference for this statement is Singer's “widely used text,” *Practical Ethics*, Cambridge; pp131–138, 1979). However, Sorabji has apparently been influenced by Singer's misleading portrayal that animal research is often cruel and unjustifiable (18, pp211, 219). Other philosophers have also been highly critical of the philosophy of animal rights. For example, Robert Nozick, chairman of the Department of Philosophy at Harvard University, had this to say in a review of Tom Regan's book (19) on the subject:

Animal rights seems a topic for cranks. . . .

The mark of cranks is disproportionateness. It is not merely that they devote great energy to their issue . . . They view the issue as far more important than it is, more pressing than others that, in fact, are more significant. (20)

Further, on the subject of “speciesism,” Nozick stated:

Our view of what treatment severely retarded people are owed surely in part depends on their being human, members of the human species. Sweeping away this consideration as morally irrelevant can only result in society's treating severely retarded people like animals, not the other way around. (20)

And Charles Griswold, Jr., professor of philosophy at Howard University, wrote in the *Washington Post*:

The animal rights movement illustrates the incoherent nature of a moral passion become immoral by virtue of its extremism. In the name of the laudable quality of humane-ness, the use of animals for food, clothing and medical experimentation is prohibited. Research that could save your child's life, or

save you from an excruciating disease, is declared unethical. The result is inhumanity toward man. (21)

Although Singer has bridled at being labeled an “animal rightist” (22), in a recent interview he appears to be supportive of the concept, at least for apes (23). In any case, these same criticisms can as easily be made against the position of “animal liberation.”

Page Numbers

Singer goes to some effort to show that philosophers and others routinely do not include page numbers when citing newspaper articles. Thus, he claims to expose the “petty and ignorant nature of [our] attack.” All this self-righteous fulminating would be more effective if it addressed what we in fact said, not just the trivial throwaway point about newspaper page numbers. We believe that we have adequately documented Singer’s carelessness with respect to references (see Table I). Furthermore, most writers of philosophy or anything else use a format for citations that may vary from text to text, but which is internally consistent. Singer’s format is not consistent, as we have mentioned. Nor does he simply omit authors’ names in his citations when he has introduced them by name in the text, as he claims. For example, the first seven references from Chapter Two (2, p272) begin with two different U.S. Air Force *Technical Reports* listed without authors or titles, although the reports have both. The authors’ names are not given in the text. Note 3 is the same as Note 2 but with a specific page number. Note 4 is a reference to a book chapter by Donald J. Barnes, which is a complete reference. Barnes’ name is also mentioned in the text. Note 5 is to two newspaper articles without authors or titles. In Note 6, Singer gives the name of the first author (“B. Levine *et al.*”) and the title of the article. Levine’s name is not mentioned in the text. But Note 7 is also a complete reference, and the author’s name *is* given in the text. And so on. If this is not an example of haphazard “notes,” what might it be?

Singer’s footnote to this section requires comment. In it, he claims that we demonstrate “invincible ignorance” about his position on abortion. While we may be ignorant of any number of topics, Singer’s stance on abortion is not one of them. When we wrote about the abortion issue being troubling for many adherents of the animal liberation philosophy, we were referring to those followers who try to maintain consistency in their efforts to protect “all innocent life.” As Herzog points out, Singer and other philosophers of the movement have done “a reasonable job of arguing that there is a moral distinction between the interests of animals and those of a fetus. But the intellectual shucking and jiving of the philosophers not-

withstanding, [it would not be surprising] to find that pro-choice animal activists sometimes feel . . . discomfort” with their position (24).⁵

Number of Pages Versus Number of Animals

We did not state or imply that Singer “claimed that the chapter gave equal time to all areas of animal research.” Again, the point of our comparing the research areas Singer emphasized with the level of funding of the various areas of biomedical research supported by the National Institutes of Health (which would be at least roughly related to the numbers of animals used in those areas) was to show how thoroughly unbalanced his chapter is. Readers should understand that Singer used only a few areas of research to condemn *all* of biomedical research using animals.

Who Are the Utilitarians?

Singer protests our description of his chapter as containing “many examples of luridly portrayed research” and cites several reviews of his book that praise it for being “unhysterical yet engagingly written” and “unemotional,” etc. These reviewers apparently did not recognize the extent to which Singer mischaracterized the research projects that he described, as we have revealed. Furthermore, we doubt that any of these reviewers bothered to read any of the research reports that Singer cited.

Singer then repeats passages from an article by Martin Seligman and his colleagues (26), involving studies on escape/avoidance training of dogs, that he quoted in his book (2, p46). Singer seems to think that repeating this quotation exonerates him from our charge of having used lurid language; instead, it offers illustration of how he misuses the scientific literature. As he did in his chapter, Singer characteristically ignores the objectives and aims of the experiment and

⁵ The general alliance of ALARMists with the pro-choice view of abortion (24) is interesting because it shows a schism between ideology and tactics on the part of the animalists. Their protest techniques (which include picketing laboratories and researchers’ homes, showing gruesome pictures of dubious origin, shouting obscenities and threats, vandalizing and burning down laboratories) bear striking resemblance to those of extremist opponents of abortion. A recent article in *The Economist* (25) likens the anti-abortion furor in the U.S. with protests in Britain over the agricultural trade in live animals thus:

[A]bortion is, in America, the social issue from hell. Its politics are strikingly like those of animal rights in Britain. Hundreds of people, unremarkable except for their anger, blockade clinics/docks, seeking to stop women/calves from reaching the door/ship. The resemblance is not coincidental. Indeed, it is inherent.

An amusing episode related to this topic happened last year on our campus. A small animal-rights/ liberation protest was counter-demonstrated by anti-abortion protestors wearing sandwich boards bearing the message, “Repent or Die.” The anti-abortionists shouted down the animalist speakers, accusing them of having misplaced priorities, and prompting one of the latter to accuse the counter-protestors of having been hired by the biomedical community. This contumely enraged the sign wearers, and police intervention was required to prevent a physical confrontation. For perhaps the first time in Berkeley, animal activists were treated to a taste of their own behavioral medicine.

says nothing about its outcome. Taking these passages out of their appropriate context amounts to coloring them. This widely used tactic of describing research in lurid terms (sometimes but not always using fragments of an author's own words taken out of context) could be used to mischaracterize any human endeavor. For example, suppose that we wanted to discredit dentistry in the eyes of people who have no knowledge of that profession. We could tell them that dentists drill holes in people's teeth, sometimes down into the nerve-rich, sensitive roots. A subspecialty of dentists attach wires to the teeth of young people and ratchet them to pull the teeth out of their natural positions. Not infrequently, dentists even rip the teeth out of people's jaws. By failing to include in this account any mention of anesthetics and analgesics, or to explain the reasons why these procedures are performed, we would leave the impression that the dental profession is composed of fiends. (A similar scenario could be imagined to impugn the character and ethics of open-heart surgeons, obstetricians performing caesarian sections, etc.)

As we pointed out in our commentary, Singer claims to embrace utilitarianism, but he omits entirely the "benefit" side of the equation. Research scientists are true utilitarians, who honestly weigh the costs and benefits (to animals and for humans and animals, respectively) of doing research.

Who Is Doing the Distorting?—We're Happy He Asked the Question

Singer begins his defense of his depiction of the studies done on flight simulators at Brooks Air Force Base by claiming to be amazed that we could have misread what he wrote, and denying that anyone could have been misled into believing that "actual experiments were carried out on chimpanzees." Although Singer does not state that chimpanzees were used, neither does he state that they were not. On page 25 we read:

The plot [of *Project X*] was fiction, but the experiments were not. They were based on experiments that have been conducted over many years at Brooks Air Force Base, in Texas, and variations of which are continuing. But filmgoers did not get the whole story. What happened to the chimpanzees in the film was very much a softened version of what really happens. So we should consider the experiments themselves, as described in documents issued by Brooks Air Force Base.

As indicated in the film, the experiments involve a kind of flight simulator. The device is known as a Primate Equilibrium Platform, or PEP. It consists of a platform that can be

made to pitch and roll like an airplane. The monkeys . . . (2, p25)

Thus, Singer goes from "the chimpanzees" to "the monkeys" with no clarification. (In fact, the passage as written may well indicate that it is Singer who cannot tell the difference between the two animals.) He does not state that chimpanzees were never used in these experiments. Chimpanzees are, after all, primates and the experiments used "primate equilibrium platforms." What about the "variations" of the experiments that continue today? Thus, a seed of suspicion or doubt may be planted in the reader's mind that chimpanzees were or are used for these experiments, as well as monkeys. This situation is similar to the "phantom witness" tactic sometimes used by trial lawyers in jury trials. The lawyer in his or her opening remarks declares that the jury will hear certain testimony from a certain witness. The witness is never called, or if called, does not appear to answer the summons, and the jury never hears the purported testimony. However, some members of the jury will accept the lawyer's version as if the witness had actually testified, a clever ploy. Even if it was not intended, we suspect that many readers of Singer's book come away with the mistaken impression that chimpanzees have been used for this type of military research. (Singer could have avoided all this with a few words of clarification, or if he had not chosen to dramatize the opening of his chapter with a description of a Hollywood film in the first place.)

As for Singer's defense of his description of the Brooks experiments, we can only shake our heads in wonderment. Singer demonstrates that he does not understand (but readers of this journal surely do) the difference between the *objectives* of an experiment—what the experiment is designed to test—and the *rationale* behind it—why this knowledge is important or desirable.⁶ For example, the most basic rationale for doing cancer research is finding the prevention or cure of such disease. The objective of any given experiment related to cancer will obviously be much more circumscribed or restricted than that. In the particular case of the first experiment described by Singer (although not in most others throughout the chapter), his description does include the objectives of the experiment, but it gives the rationale behind it only in negative terms, as we stated in our commentary. The first and third quotations that Singer offers as evidence that he actually cited the ratio-

⁶ As experimental biologists are well aware, before any experiment involving animals may be begun, the experimenter must state explicitly this rationale, in terms understandable by the general public. No animal-use protocol lacking such justification will be approved. This is now a federally mandated law (see below), and it has been observed at least implicitly since biological science became an organized endeavor.

nale for the experiment only give the objectives. They do not say why the information was deemed important. The quotation from Donald Barnes might be considered to be part of a rationale, mentioning as it does “defense of the free world,” but it is vague and, more important from the standpoint of fair reporting, negative, beginning as it does with Barnes’ “suspicions about the utility of the data we were gathering.” Barnes, an executive of the National Anti-Vivisection Society, is quoted to explain why he stopped doing research at Brooks. The paragraph quoted by Singer goes on:

I used those assurances as blinkers to avoid the reality of what I saw in the field, and even though I did not always wear them comfortably, they did serve to protect me from the insecurities associated with the potential loss of status and income . . .

And then, one day, the blinkers slipped off, and I found myself in a very serious confrontation with Dr. Roy DeHart, Commander, U.S. Air Force School of Aerospace Medicine. I tried to point out that, given a nuclear confrontation, it is highly unlikely that operational commanders will go to the charts and figures based upon data from the rhesus monkey to gain evidence of probable force strength or second strike capability. Dr. DeHart insisted that the data will be invaluable, asserting, “They don’t know that the data are based on animal studies.” (2, p28)

This is the sum total of “rationale” given by Singer. It is there, all right, but stated in this way it is worse than not being given at all.⁷

“The Real Issue”

Singer continues:

What I find really depressing about Russell and Nicoll’s paper is their failure to acknowledge that even a few of the experiments that I describe might not have been ethically justifiable. In Australia, it is easy to find researchers who will admit that many of the experiments I describe are indefensible.

In the first place, whether or not we would judge any of the experiments that Singer described to be indefensible is irrelevant to his practice of, in our opin-

ion, distorting virtually all of the research he described. Secondly, we doubt that the Australian researchers “who will admit that many of the experiments [Singer describes] are indefensible” would do so if they knew the truth about why the experiments were done, what their significance is, and how Singer has mischaracterized them.

With regard to the polarization between experimenters and their critics in the United States, of which Singer claims our article “is a symptom,” he must accept much of the “credit” (quotation marks used for irony, not to scare anyone) for that situation because of the way he himself has inflamed the issue by distorting the true nature of animal research in this country. We have no quarrel with any responsible advocates of animal welfare. On the contrary, we believe that most users of animals in the United States (in biomedical research and other areas) are strong advocates of animal welfare. Indeed, dialogue with genuine animal welfarists has brought about many improvements in the care and use of animals here in biomedical research and in other spheres. However, there can be no meaningful or useful dialogue with critics who believe everything that Singer writes and who chant, “It’s not bigger or better cages that we want, but empty cages.” Animal rights/liberation is not about animal welfare: It is about ending all human use of animals.

Singer claims that in several other countries the climate of discussion between researchers and their critics is very different from that which exists in the United States. He states: “In Australia, for example, the animal movement—including animal liberation organizations with which I am involved—is regularly consulted on proposals for revision to the *Australian Code of Practice for the Care and Use of Animals for Scientific Purposes*. . . .” He further states that we “typically misread” what he said about ethics committees in the United States and elsewhere and then quotes from his book: “In fact what I say is: ‘A minimal first step would be a requirement that no experiment be conducted without prior approval of an ethics committee that includes animal welfare representatives and is authorized to refuse approval to experiments when it does not consider that the potential benefits outweigh the harm to the animals. . . .’ (2, p87 [should be p86]).” This statement comes six pages after the section from which we quoted and illustrates once again Singer’s tactics of distortion. This is another smoke screen that confuses the reader. The committees that oversee animal research at the institutional level in the United States are charged with ensuring that research protocols are in compliance with the regulations contained in the National Institutes of Health Guide for the Care and Treatment of Labora-

⁷ We have dealt elsewhere (9) with Barnes’ exaggerated and erroneous claims about the work that he did at Brooks, and have also explained the rationale behind that work, which did indeed involve the evaluation of “probable force strength or second strike capability” after a nuclear attack. Readers who are especially interested in this topic should read the account of Albanese and Pickering (27).

tory Animals. Experiments that are deemed inappropriate for any reason are disapproved. Contrary to Singer's claim, few experiments involve the kind of pain and suffering that he luridly portrays. Furthermore, most or even all of the members of these committees are concerned about the welfare of research animals. Otherwise, the committee members would not bother to serve. Our own Institutional Animal Care and Use Committee (IACUC) at U.C. Berkeley has regularly had one or more members who were advocates of animal welfare but not ALARMists. During one period when an ALARMist did serve on the committee, it was a disaster. The individual objected to virtually every proposal that was reviewed, obstructed the progress of the committee meetings, and contributed nothing to the committee's work that was positive. The ALARMist member also leaked confidential information about protocols that were undergoing review to fellow animalists. The IACUCs at other institutions have had similar negative experiences when they admitted ALARMists to their membership.

Even though the Australian equivalent of our IACUCs may be called "ethics committees," their composition in practice, as described by Singer, does not appear to differ significantly from our IACUCs. Their member category C calls for an animal welfare advocate, not an ALARMist. Singer also implies that the ethics committees in Britain, Sweden, Switzerland, the Netherlands, and Australia contribute to an improved climate of discussion and presumably more ethical (or less unethical) animal experimentation. He is particularly laudatory of the regulations in effect in Australia. He states: "As a result many of the experiments that I describe in my book could not take place in Australia." This claim is interesting because, in the areas of our research expertise (endocrine physiology and cancer research), it is clear from the literature that scientists in the countries praised by Singer (including his homeland) are using the same kinds of experimental procedures that are being used on animals in the United States. We can see no evidence that the kinds of experimentation being done in those countries is more "ethical" than those done in the United States.

The United Kingdom is often credited with having some of the most extensive and most strictly enforced regulations on the use of animals in biomedical research. (They also have the greatest amount of violent animal liberation protest activity, including car bombs, letter bombs, etc.) Nevertheless, we have learned from the Research Defence Society there that some research on animals that involves pain and the withholding of anesthetics or analgesics is approved by the Home Office Inspectors charged with making the judgment when the experiment is deemed justifiable and

anesthetics would interfere with the collection of meaningful experimental results. The British researchers who study pain may be obliged to go to greater lengths to justify such research than do their counterparts in the United States. However, the greater restrictions and more elaborate scrutinizing of U.K. research does not appear to make any difference in the final outcome. They are still using the same procedures and addressing the same fundamental questions as their colleagues on this side of the Atlantic.

Singer states that a writer in the *New Scientist* "has described the United States legislation covering animal experimentation as 'remarkably weak.'" Author Helen Gavaghan is a freelance science writer based in Washington, D.C., and the article that she wrote is largely an opinion piece. Even if her conclusion that regulation of animal research in the United States is "remarkably weak" were true, that would not prove that research animals are treated with less respect or less humanely here than they are in other countries. Singer's chapter is a completely unreliable attempt to substantiate the inference that our "remarkably weak" regulations allow for widespread abuse of animals in the laboratory.

Finally, Singer repeats the red herring that we addressed in our commentary, that the United States lags behind "more civilized nations" because mice and rats are not covered by the Animal Welfare Act. Although mice and rats are indeed not covered by the Act, the use of rodents in federally supported biomedical research in the United States *is* covered by the Public Health Service Act, which was enacted as law in 1985. Thus, rodents do not need to be "protected" by the Animal Welfare Act. If that Act were extended to include rodents, the few inspectors who work for the U.S.D.A. inspecting animal facilities would have their burden increased many fold. Thus, they would not be able to inspect many facilities on a regular basis. This situation would elicit clamoring from the animal activists to have more inspectors to do more inspecting of more facilities. But from where would the necessary funding come? Should it be taken from the already paltry federal budget for biomedical research, thereby reducing the funds available for research on animals as well as all other kinds?

The burden of proof that animals used in biomedical research are treated more ethically in "the more civilized nations" than they are in the United States rests with Singer and his allies. To prove their point, they need to document in a *reliable* manner that animal experimentation in the United States is less ethically conducted or less morally justified than that in the other countries mentioned by Singer. As we have shown in our critique of his chapter "Tools for Research," Singer cannot be relied upon to provide an

objective and reliable accounting of animal research in the United States.

The Last Word

We believe that it is appropriate to allow Singer the last word in this debate. In a letter to the editor of an Australian newspaper complaining about a columnist's opinion piece about Singer's views on euthanasia, Singer and, his occasional coauthor, Helga Kuhse conclude:

There are other serious errors in Mr. Dominguez's articles, but two are enough to make our point. A writer who makes such flagrant errors does not deserve to be taken seriously—or published in a newspaper that wishes its opinion pages to be taken seriously. (28)

We could not have said it better ourselves.

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3. Ames BN, Gold LS. Chemical carcinogenesis: too many rodent carcinogens. *Proc Natl Acad Sci USA* 87:7772–7776, 1990.
4. Whelan E. Praise EPA for easing off on carcinogenic trivial pursuit. *Los Angeles Times*, 18 Jan: (Pt II), p7: 1988.
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