Reply

Evelyn Pluhar

The Pennsylvania State University
Fayette Campus

I thank Peter Harrison for his courteous response. Overall, it advances the discussion of pain and its moral significance. Unfortunately for Harrison, however, his reply succeeds no better than his original article in justifying his denial of nonhuman suffering. Space limitations prevent me from responding in full to him, so I will focus on the key elements in his reply. I fully agree with his suggestion that interested readers should draw their own conclusions by reading his original, unexcerpted paper as well as our exchange.

**Harrison's position
and what he must do to support it**

Let us first be as clear as we can about what Harrison actually claims. We must not forget that theodicy is his driving motive. Harrison believes that it is easy to reconcile human pain with the existence of a perfect God: it is the price of free will and builds character. Nonhuman suffering, he assumes, cannot be explained in this way. Rejecting as "ad hoc" the theodicy proposing that fallen angels rather than God are responsible for natural evils, including animal suffering,¹ Harrison embraces a version of Descartes' theodicy. According to that view, nonhuman animals are said to lack awareness of anything, including stimuli we find to be painful; thus, no experiences of theirs can be used as ammunition for the problem of evil. They are mindless bodies; humans are minds linked to bodies in this life. While accepting Descartes' conclusion, Harrison partially rejects the

dualistic interactionism underpinning that conclusion. Apparently agreeing with Descartes' early critics that a nonphysical substance (mind) and a physical substance (body) could not directly affect each other, he amends the Cartesian position, as Malebranche did, by proposing the theory of "occasionalism":

To work properly it [the Cartesian position] must assume God's activity in human beings, correlating bodily events (the flame burns my hand) with mental states (I feel pain). This 'occasionalism' is admittedly also ad hoc and mythological, but less so than attributing earthquakes, floods, volcanoes, disease and animal pain to demonic activity.²

In short, on this view the flame which burns the hand, leading to nerve impulses that eventually reach the cortex, is not the cause of the pain: *God* sees to it that this "nonphysical" experience results.³ Nonhuman animals are exempt from all such supernatural promptings.⁴

Of course, the burden is on *Harrison* to make a case for his position, not on his critics to show his view to be false. Merely saying that his version of Descartes' view is a better solution to the problem of evil than the invocation of demons would hardly carry the day, as Harrison is well aware. A number of additional arguments are needed if he is to demonstrate the plausibility of his view. These arguments must appeal to premises that are themselves plausible. If there is significant evidence against those premises, Harrison should at least acknowledge that evidence. He assuredly should not appeal to premises that presuppose, in whole or in part, that his position is true, *without* attempting to support those premises or referring us to other authors who supply such support. Finally, since Harrison's denial of nonhuman animal pain seems to fly in the face of the evidence, he should endeavor to provide us with plausible ways of interpreting nonhuman animal behavior. If his hypothesis cannot do at least as good a job as the consciousness hypothesis in accounting for nonhuman animal behavior, it should be rejected. In his reply to me, Harrison has attempted to support some previously unsupported contentions in his original paper, but, as I shall argue, he has still not shown his position to be plausible.

DISCUSSION

Mind-body theories and the charge of linguistic confusion

Harrison's discussion of alternative mind-body theories is welcome. He correctly says that dualists believe that a proposition about mental states is different in meaning *and* reference (connotation and denotation) from a proposition about physical states. I would add that a *plausible* monistic theory such as materialism will hold that propositions about mental states *differ in meaning but not reference* from certain, perhaps still undiscovered propositions about physical states. (We would hardly have been arguing about mind-body theories for millennia if *meaning* or linguistic usage settled the question.) It is also the case that the argument from analogy to other minds, human or nonhuman, is compatible with both dualism and materialism. According to it, certain behavior (including possible utterances like "I am in excruciating pain at this moment," screaming, writhing, etc.⁵), at certain times, in beings physiologically similar to oneself in relevant ways empirically warrants the conclusion that these others are also conscious, however consciousness may be metaphysically construed. In principle, the inference to nonhuman animal sentience is drawn in the same way as one's inference that other humans, be they verbal or pre-verbal, are conscious.

Harrison claims otherwise, saying in his reply that we can "never" know what a nonhuman animal's mental states (if any) are, since "their nervous systems differ from ours in significant ways" and "we have no independent access to their mental states." On the first count, however, as Harrison has conceded with regard to *pain*, many nonhuman animals share with humans all the relevantly similar neurological structures and processes. On the second count, what does Harrison mean by saying that we have no "independent access" to any nonhuman animal mental states? Barring telepathy, it would seem that we also lack such access to the mental states of other humans: we must *infer* such states from their behavior and the empirical circumstances. For Harrison's claim to make sense, he must be assuming that verbal reporting—*language*—is required for knowledge of another's mental states. Indeed, he refers to "the language criterion of consciousness" in his note 12, and appears to be presupposing it in his discussion of the concept of dreaming. But why must one

assume that language is *required* as evidence of consciousness, given the well-known problems with that view? Even Peter Carruthers has avoided that pitfall. Harrison refers to Wittgensteinian philosopher Norman Malcolm to support his view, but this is of little help. According to Malcolm, verbal reports are the "criterion" (in his words, "something that settles a question with certainty") of dreaming. In general, Malcolm holds that claims about mental states must have publicly observable "criteria" to constitute their verification; otherwise, such claims are "nonsense."⁶ Nonhuman animals do not report dreams, although they go through all the brain activity and twitching, etc., that humans do before waking and reporting dreams. This leads Malcolm to remark offhandedly that "a dog's dream" has "no content."⁷ Harrison then generalizes, claiming that any "*meaningful*" attribution of mental states to nonhuman animals *cannot* mean what we mean when we attribute such states to other humans: such terms *must refer to purely physical characteristics*, since we have no other criteria for their correct application. Any talk, then, of "grief," "anxiety," "pain," and "choice" pertaining to nonhumans is properly talk about *nonmental states*. Anyone thinking otherwise, Harrison concludes, is guilty of "linguistic confusion."

This argument does not add to the plausibility of Harrison's position. It relies entirely upon Malcolm's version of the philosophically misbegotten and long since refuted *verifiability criterion of meaningfulness*. The behavioral sciences have clung to this view long after its philosophical demise, as Bernard Rollin has documented, but for some time now they have been emerging from its spell. Thus, Harrison has not shown at all that, e.g., ethological research indicating that nonhuman animals are capable of making some choices (not "choices"),⁸ as well as other such research, is based on "linguistic confusion." Moreover, even apart from the familiar fatal flaws of the verifiability criterion, its use in the context of Harrison's attack on the argument from analogy is highly questionable. Harrison simply assumes without further ado that the behavioral and physiological similarities between humans and many nonhumans is *not* good evidence for consciousness in the latter. This is tantamount to assuming, without supporting argumentation, that the argument from analogy is bad: once again, the question is begged.⁹

On the alleged disproportion between physical and mental worlds

In order to further support his denial of nonhuman animal consciousness, Harrison claims that there is "no proportionality between physical and mental worlds." He notes that even our closest physical relatives, chimpanzees, who are 98.4% genetically similar to us and whose brains are so like ours, have not begun to equal human accomplishments: "There is in the animal world nothing to compare with the products of the conscious mind." He dismisses chimpanzees' ability to carry on simple conversations in sign language; after all, he observes, these communications would never be confused with Shakespeare's creations!

Does the fact that nonhuman animals have not created art works "98.4%" as good as our own show that there is no correlation between brain development and mental states, as Harrison would have it? Hardly! He neglects to consider that modern human brains are 340% larger than chimpanzee brains (chimpanzee and human body sizes are comparable). The chimpanzee brain is almost as large as the brain of *Australopithecus*, the first hominid genus (as far as we know).¹⁰ One cannot expect *Hamlet* from a human-sized being with a 400 g brain (the vast majority of those of us with 1350 g brains could never manage it either).¹¹ We know of no *Australopithecine* Bards either (if there were any, they failed to record their soliloquies); it does not follow from this that they were not *conscious*. In fact, there is good evidence that these ancient forebears used stone tools.¹² Not coincidentally, chimpanzees, who according to genetic evidence have been diverging from hominids for about 5 million years, also are known to fashion and use tools. Contrary to Harrison, the correlation between relative brain size/structure and evidence of intelligence is just what one would expect.

Other mental states also have their physical correlates, including *pain*. PET scans of humans have revealed three different areas of the brain that are operative during painful experiences.¹³ Much research now indicates that higher and lower thresholds of pain are related to specific neural structures and activity.¹⁴ Moreover, autopsies of disease- and drug-free humans who had killed themselves after suffering from chronic pain and depression indicate that they had abnormal levels of certain brain chemicals as well as abnormalities in their opiate receptors. Researchers doing this latter study note that nonhuman animal experiments in which

the subjects were exposed to high levels of stress and pain-producing stimuli (not just to "stress" and "pain") indicated that the same abnormalities were present.¹⁵ Contrary to Harrison, we do not find a wild disproportion between physical states and mental states: quite the opposite. All of these findings, of course, are compatible with dualistic as well as materialistic theories of mind and body, and they are thoroughly in tune with evolutionary theory.

Harrison, however, believes that relating evolutionary theory to the emergence and development of mental states is utterly unwarranted, because "it is behaviours, not mental states, which adapt, and it is only physical entities which can be the subjects of natural selection." This would come as quite a surprise to all the evolutionary biologists (Allan Wilson and Stephen Gould among them) who link natural selection to the development of intelligence, among many other mental traits. Harrison's claim, of course, presupposes that materialism must be false; anyone not already convinced of this will hardly be impressed. But, most importantly, even many dualists would find his claim to be highly misleading at best. *However* mind or mental states may be "connected" to the body, dualists hold that mental and physical states form some sort of unit during earthly life. What happens to the body is not unrelated to the mind or one's mental states. Interactionists have no problem with evolutionary processes being correlated with mental changes; nor do epiphenomenalists or double-aspect theorists. Even parallelists could have no objection to increased mental complexity accompanying increased nervous system complexity; "hypophenomenalists" such as Schopenhauer, who believe that the mind drives the development of the physical world, would positively embrace the notion.¹⁶ Only followers of *one* form of dualism could unequivocally accept Harrison's claim that mental states do not change in conjunction with the physical processes of evolution: occasionalists. If God is called upon to see to it that the appropriate mental states, whatever those are, occur in humans on particular occasions, we can see why there need be no mental parallel to the physical world. God is free to fashion any miracle that God chooses to fashion. Clearly, Harrison, an occasionalist, cannot use this argument to buttress his own position! The overwhelming evidence of correlations between "the mental and physical worlds" gives us independent grounds for rejecting Harrison's claims.

Inadequate models of complex nonhuman animal behavior

If nonhuman animals are indeed not conscious, how are we to comprehend what they do? In his original paper, Harrison gives us two explanations of seemingly purposeful behavior by nonhumans; each, he thinks, shows the assumption of consciousness to be superfluous. (1) We know from our own cases that reflexes allow us to pull back from a flame *before* the pain is felt. Thus, the experience of pain is not required for the appropriate survival-enhancing behavior to occur (remember, humans get the experience anyway because it builds character). Harrison immediately cautions us that he is not claiming that *all* animal behavior in circumstances we would find painful is of this type,¹⁷ so we clearly need some further models. Moreover, the reflex proposal is not even plausible if we take it in the limited way intended, since it gives us no way to understand *avoidance* behavior after a single exposure to the damaging stimulus. (2) To show that nonhuman animal learning ("learning?") need not in principle involve consciousness, Harrison cites the example of protozoan habituation. Again, as I noted in my paper, he claims not to be saying that *all* nonhuman animal learning is of this kind¹⁸—a wise claim, given that very little behavior by complex nonhumans would fit this model. However, one waits in vain for more plausible models.¹⁹

In his response, Harrison suggests that sociobiological explanations making no reference to mental states can in principle account for all complex nonhuman animal behavior. He takes what he claims to be an example of mine: a nonhuman's refusal to eat after the death of a companion. The surviving member of a "superannuated breeding pair," he proposes, is now past breeding; fasting would free resources for use by younger conspecifics. Genes, then, would be sufficient to explain "grieving" behavior. This proposal, of course, cannot account for similar behavior by younger nonhumans at the death of companions who are not even members of their own species. Harrison guards against such criticisms by saying that it really does not matter if his particular account here works out: the important thing is that some such account is always possible. Nonetheless, the fact remains that we have still not been given a single plausible nonmentalistic account of complex nonhuman animal behavior.²⁰ I cannot help adding that

I find it a bit odd that an occasionalist, for whom each human mental state is a miracle wrought by God, rejects the hypothesis that nonhuman animals are conscious on the grounds that it is "superfluous." Surely, Occam's Razor cuts both ways.

Drawing some ethical conclusions

I conclude my response to Harrison by taking up the issue with which he began his reply to me: the ethical implications, if any, of his denial of nonhuman animal consciousness. Harrison, of course, cautions us at the end of his original article that he is not urging us to beat "our infants and pets."²¹ He apparently follows Aquinas and Kant in holding that such treatment might encourage the mistreatment of humans. I will not here repeat the familiar criticisms of such reasoning.²² Contrary to Harrison's claim, there is historical evidence that Descartes' machine model of nonhumans encouraged vivisection (is it coincidental that Descartes himself engaged in the practice?).²³ Later practitioners of vivisection who saw no need to use anesthesia, such as Claude Bernard, were clearly quite taken by the machine model and convinced they were not wronging their victims, just as the Port Royal Cartesians of Descartes' own century were. It is fascinating that Harrison uses the term *cruelty* in his discussion of the Port Royal horrors, and speaks of some Cartesians' advocacy of *kindness* to nonhuman animals. What sense can such terms, used by Harrison *without* quote marks this time, make? Could it be that Harrison cannot quite bring himself to believe his own view?

Unlike Harrison, Carruthers straightforwardly draws the ethical implications of their shared position, finding it "morally objectionable" to be concerned about "nonexistent" cruelty on factory farms or in laboratories when conscious humans benefit from the products of such activities. Perhaps readers will recall that Carruthers declares it a "moral imperative" to stop feeling sympathy for nonhuman animals. *If* nonhumans are unconscious, and we can benefit from trapping, vivisection, and killing them, we ought to do exactly that, pausing only to educate the gullible public about the impossibility of being "cruel" to nonhuman animals. In one sentence near the end of his original article, Harrison suggests that he is willing to consider adopting such a position: "Such causes as animal liberation may have to be rethought."²⁴

On the contrary, such positions as Harrison's and Carruthers' should be rethought. In the absence of a strong case for the denial of nonhuman animal consciousness, we are obligated to take moral note of nonhuman animal suffering, as well as the suffering of humans who are too young or too ill-equipped to rival Shakespeare.

Notes

¹ Peter Harrison, "Theodicy and Animal Pain," *Philosophy* 64 (247), January 1989, pp. 79-92: 80.

² *Ibid.*, p. 81.

³ It is ironic that the problem of evil is allegedly being solved by having the Almighty be the direct cause of suffering. Readers who do not wish to carry all the above theological baggage may think that Harrison's position would be improved without it. The editors of a popular anthology on animal issues have done the job for us, reprinting Harrison's article with all theological references neatly excised (Robert Baird and Stuart Rosenbaum, eds., *Animal Experimentation: The Moral Issues* (Buffalo, N.Y.: Prometheus Press, 1991), pp. 128-139). This does not favor Harrison's position. Without his appeal to theodicy and his theological account of the divine purpose behind human pain, Harrison's arguments are lacking a key explanatory element. If human pain is supposed to be very frequently contrary to survival, our primitive ancestors either must have had no such sensations, receiving them somehow much later, or must have been miraculously protected until cultures arose (also miraculously?) that would support pain-experiencing members. Harrison, unlike Carruthers, must supplement his naturalistic arguments with a *deus ex machina*.

⁴ Harrison's reply makes it unequivocally clear that he denies animals have pain of any kind. In the last section of his original paper, he appeared to be claiming (inconsistently) that neonates and nonhuman animals experience pain but lack the psychological continuity of consciousness allegedly required to render such an occurrence significant. He now says that he was not attributing painful experiences, however "insignificant," to nonhuman animals. Although he claims that the context of his discussion made it clear that his references to painful experiences that *hurt*, although they may be forgotten, were references to *human* experience only, a re-reading of this section of his paper does not bear out his self-interpretation. His assertions about the "discomfort" and the "many painful experiences" babies have (experiences of little account, supposedly, without a robust sense of self) come in the context of an entire section that emphasizes the insignificance of forgotten but real suffering. In fact, he concludes his discussion of neonatal pain experiences by stating that "[t]his last example is crucial, because it is during

our earliest stages of development that our awareness is most like that of the higher animals... [t]he force of these examples should now be apparent. The 'awareness' of animals is like that of the sleeping Jones, the amnesiaesthetized patient, *the neonate*" (p. 90; emphasis mine). I cannot see how we can interpret this section as Harrison now says: it stresses the similarity of certain human and nonhuman animal experiences rather than their dissimilarity. I nonetheless welcome Harrison's current clarification of his position.

⁵ Current communication theory indicates that communication is, to a large extent, *nonverbal*. In fact, many theorists believe that speech, when it is present, constitutes less than 50% of a communicative exchange between humans. See Mark L. Knapp and Judy Hall, "Nonverbal Communication," in *Human Interaction*, Third Edition (New York: Harcourt, Brace, Jovanovich, 1992). See also R. A. Hinde, ed., *Nonverbal Communication* (Cambridge: Cambridge U. Press, 1972), for detailed comparisons between intentional nonhuman animal and human communication. The authors discuss the evolutionary continuity of these varieties of communication.

⁶ The criterion quote is from Norman Malcolm, "The Concept of Dreaming," in D. F. Gufstafson, ed., *Essays in Philosophical Psychology* (Garden City, N.Y.: Doubleday, 1964), 265-76: 270. (It is unclear why a verbal report should be taken to settle any such issue "with certainty.") Malcolm also defends this view in his 1959 book, *Dreaming* (cited by Harrison). See also his essay, "Knowledge of Other Minds," pp. 365-76, in the same volume. On p. 366, Malcolm makes it crystal clear that he is talking about a "criterion of verification."

⁷ Malcolm, "The Concept of Dreaming," *op. cit.*, p. 272. He also claims that anyone making verbal reports must have "the human form" for us to attribute consciousness to that being ("Knowledge of Other Minds," *op. cit.*, p. 369). Harrison does not cite this view; perhaps he (wisely) does not go quite so far.

⁸ Much research also indicates that preverbal children, even neonates, also have preferences and act upon them (e.g., consistently activating tape recordings of their mothers' voices rather than a stranger's even when the channels are switched repeatedly). One's theory of freedom will determine how one interprets such choices. (The contra-causal theory of freedom remains much more problematic than the compatibilist theory. Harrison believes that construing *agents* as the causes of their actions solves the problem of making sense of uncaused decisions. Alas, this proposal merely pushes the puzzle back one step: it is difficult to see how agents who choose randomly can be said to be free. Compatibilists, by the way, agree that agents are causes of their choices.)

⁹ Malcolm is also guilty of this fallacy in his own attack on that argument: see his "Knowledge of Other Minds," *op. cit.* For an excellent defense of the argument from

analogy, see A. J. Ayer, "One's Knowledge of Other Minds," pp. 346-64 in the same volume.

¹⁰ See, e.g., Stephen Jay Gould, *Ever Since Darwin* (New York: W. W. Norton, 1977), pp. 182-185, 207. See also Bruce Bower, "Ancient Ape Suggests Human, Chimp Lineage," *Science News*, v. 142, September 26, 1992, p. 198.

¹¹ Nevertheless, one must not forget that chimpanzees have very large brains in proportion to their body weight in comparison to the average mammal (Gould, *op. cit.*, p. 187). Allan Wilson notes that birds and mammals are in turn much bigger-brained in relation to body size than less complex nonhuman animals. He argues that the increased intelligence concomitant with this attribute helps to drive evolution itself, as I noted in my earlier paper. See his "The Molecular Basis of Evolution," *Scientific American* 253 (4), 1985, 164-73: note his chart on p. 172. Like many other biologists and ethologists, but unlike Harrison, Wilson holds that these complex nonhuman animals have developed primitive cultures.

¹² See Gould, *op. cit.*, p. 208, and Bruce Bower, "Hominid Headway," *Science News*, v. 132, December 19 and 26, 1987, pp. 408-9.

¹³ Bruce Bower, "Human Brain Reveals the Anatomy of Pain," *Science News*, v. 139, March 16, 1991, p. 167.

¹⁴ See, e.g., Robert Langreth, "Pediatric Pain," *Science News*, v. 139, February 2, 1991, pp. 74-75: 75.

¹⁵ "Suicide Brains: Naturally Prone to Pain?," *Science News*, v. 138, November 10, 1990, p. 301. See also Bruce Bower, "Brain Images Show Structure of Depression," *Science News*, v. 142, September 12, 1992, p. 165.

¹⁶ C. J. Ducasse coined this term in his "Is Life After Death Possible?," reprinted in J. Burr and M. Goldinger, eds., *Philosophy and Contemporary Issues* (New York: MacMillan, fourth edition, 1980), pp. 382-91. He himself is an unabashed interactionist. For a far better response to the "impossibility of interaction" criticism than Descartes' notorious "pineal gland as seat of the soul" suggestion, see p. 390 of Ducasse's article. Interactionism, thus defended, is a far more plausible dualistic theory than occasionalism. Occasionalists, who invented their theory to skirt the objection that nonphysical and physical substances are too different to be causally related, must perforce hypothesize a nonphysical spirit, God, who creates (causes) a physical world, then causes some physical creatures in said world to have nonphysical mental states. This hardly solves the original problem!

¹⁷ Harrison, *op. cit.*, p. 84.

¹⁸ *Ibid.*, p. 91.

¹⁹ Harrison does also suggest, in the puzzling last section of his original paper, that nonhuman animals can be compared

to "chronic amnesiacs," who learn all sorts of things from experience but forget who they are from moment to moment, retaining the lessons but not the identity of the learner (*Ibid.*, p. 89). It is not clear that the concept of such a "learning chronic amnesiac" is coherent. However, much more seriously, this way of trying to understand nonhuman animal behavior seems to attribute consciousness to them. After all, human amnesiacs do have consciousness, however truncated.

²⁰ In order to avoid "multiplying examples beyond necessity," Harrison decides in his reply to settle for quoting a physiologist who states that the neural changes involved in memory and learning are simple and require no assumption of nonhuman animal consciousness. Abundant research, however, shows that the neural mechanisms involved in short and long-term memory in humans are anticipated in nonhuman animals, especially in the more complex ones. (See, e.g., Richard Restak, *The Brain* (New York: Bantam Books, 1984), Chapter Five; Carol Ezzell, "Memories Might be Made of This: Closing in on the Biochemistry of Learning," *Science News*, v. 139, May 25, 1991, pp. 328-30, and the same author's "Watching the Remembering Brain at Work," *Science News*, v. 140, November 23, 1991, p. 333.) Is it also not necessary to postulate consciousness in human subjects?

²¹ Harrison, *Ibid.*, pp. 91-2.

²² See, e.g., Bernard Rollin, *Animal Rights and Human Morality*, Revised Edition (Buffalo, N.Y.: Prometheus Books, 1992), p. 32.

²³ Also contrary to Harrison's claims, there was opposition to Descartes' machine model of nonhuman animals and to vivisection well before Jeremy Bentham came upon the scene. Voltaire, to give but one example, clearly regarded nonhuman animal consciousness to be a fact and to be morally relevant: he explicitly opposed the cruelties of vivisection. Opponents of unanesthetized vivisection (many of them not Bentham scholars) were routinely dismissed by some scientists as "irrational" and "sentimental," terms which make perfectly good sense if the machine model is presupposed. (For an illuminating discussion of Descartes' critics, including his own niece, and the ways in which their opponents tried to dismiss them, see Roberta Kalechofsky, "Dedicated to Descartes' Niece: The Women's Movement in the Nineteenth Century and Anti-Vivisection," *Between the Species* 8 (2), Spring 1992, pp. 61-71.)

²⁴ Harrison, *op. cit.*, p. 92.