UNTO THE LEAST OF THESE: ANIMAL SUFFERING AND THE PROBLEM OF EVIL

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A thesis submitted to the
faculty of the Graduate School of the
University of Colorado, Boulder in partial fulfillment
of the requirement for the degree of

Doctor of Philosophy

Department of Philosophy

2013

This Thesis entitled:

UNTO THE LEAST OF THESE: ANIMAL SUFFERING AND THE PROBLEM OF EVIL

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The final copy of this thesis has been examined by the signatories, and we find that both the content and the form meet acceptable presentation standards of scholarly work in the discipline of philosophy.

Seacord, Beth (Ph.D., Philosophy)
Unto the Least of These: Animal Suffering and the Problem of Evil
Thesis directed by Professor Wes Morriston

Abstract:

In this dissertation I argue that animal pain and suffering pose a greater problem for God's goodness than has been generally acknowledged in the history of the discussion of the problem of evil. I take David Hume's abductive approach to the problem of evil as my model and compare two explanations for the evidence of animal suffering—the hypothesis of indifference and classical theism. I argue that theism is a poor fit with the total evidence—evidence that includes animal suffering. I argue that there are certain features of the world that are surprising on the hypothesis that a perfectly good, all-powerful being governs the universe. Among these features are the pain and suffering of sentient animals, the phenomena of predation, and the mechanism of evolution by natural selection. Given that there is an alternate hypothesis that is a better fit with the data, it is unreasonable to accept theism. Then I evaluate some of the best attempts to diffuse the problem of animal suffering—I survey various theodicies and defenses designed to raise the probability of theism on the evidence of animal suffering including Peter van Inwagen's modal and moral skeptical defense, Michael Murray's neo-Carteisian defense and evolutionary goods defense and Richard Swinburne's animal virtue theodicy. I conclude that each of the theodicies and defenses are highly implausible and, therefore, fail to raise the probability of theism relative to the evidence. I conclude that the prospects for theodicies and defenses are dim. Unless the theist has recourse to some very strong argument for the existence of an all-good God, I argue that it unreasonable to believe in the God of classical theism.

To Scout and Spike

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Chapter One:

An Introduction to the Problem of Animal Suffering

The wolf and the lamb will graze together,
and the lion will eat straw like the ox;
and dust will be the serpent's food.
They will do no evil or harm in all my holy mountain,'
says the Lord.[1]

There is no greater challenge to the goodness of God than the suffering of the innocent. Such suffering represents a deep affront to our moral sensibilities, and tempts even the most faithful to shake their fist at the universe and cry foul. Job, the archetypal sufferer, observes that God is ultimately responsible for the suffering of his creatures: "'if it is not he, then who is it?'"[2] After all, Job reasons, if God is sovereign, then both good and evil come from His hand.[3]

Philosophers of later generations have fashioned various defenses or theodicies for this longstanding theological problem which range from the importance of the choice between good and evil for morally significant action, to the necessity of evil in the valuable process of soul-building. However, attempts to explain why God allows the innocent to suffer have focused exclusively on one class of innocents to the exclusion of others—theodicies have tended to focus on the problem of human pain while the suffering of non-human animals[4] has been little more than an afterthought. It can only be assumed that bias in favor of our own species has prevented many from appreciating the moral force of animal suffering. In his influential book, *Animal Liberation*, Peter Singer argues that there is no philosophically tenable justification for our 'speciesism': "…pain

[1] Isaiah 65:25, New American Standard Bible (NASB).
[2] Job 9:24, (NIV) New International Version
[3] Job 2:10, (ASV) American Standard Version
[4] Hereafter animals

is pain, and the importance of preventing unnecessary pain and suffering does not diminish because the being that suffers is not a member of our species."[5]

Failure to appreciate the problem of animal suffering for classical theism can only be attributed to a philosophically unjustified, yet deeply engrained, bias. For instance, some of the best-respected theodicies of our time assume—with very little or no argument—that animal suffering is of little moral importance. In Peter van Inwagen's treatment of the problem of evil, he claims that "…the sufferings of human beings are a much worse evil than the sufferings of beasts…even quite large amounts of animal suffering."[6] While John Hick states that "the problem of animal pain is…subordinate to human sin and suffering…"[7] Others like Richard Swinburne argue that non-human animals do not have the capacity to suffer as humans do: "while the higher animals, at any rate, the vertebrates, suffer, it is most unlikely that they suffer as much as humans do."[8] And some go as far as to deny the existence of animal pain altogether: "The animal, and…the neonate, have no self, and their pains are rather successive states which lack the connexion which would render them 'painful experiences'."[9] Because many philosophers operate under the assumption that animal pain is either not as morally significant as human pain or is not as 'real' as human pain, serious theodicies for the suffering of non-human animals have been few and far between.[10]

Aside from some neo-Cartesians, not many people would deny that animal pain and suffering are intrinsically bad-making features of our world. It represents a *prima facie* reason to doubt the

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[5] Peter Singer, *Animal Liberation* (New York: Harper Collins, 2002), 220.
[6] Peter van Inwagen, *The Problem of Evil* (New York: Oxford University Press, 2006), 127.
[7] John Hick, *Evil and the God of Love* (New York: Harper and Rowe, 1966), 352.
[8] Richard Swinburne*, Is There a God?* (New York: Oxford University Press, 1996), 110.
[9] Peter Harrison, "Theodicy and Animal Pain," *Philosophy* 64 (1989): 79-92.
[10] One notable exception is the recent book by Michael J. Murray, *Nature Red in Tooth and Claw: Theism and the Problem of Animal Suffering*, (Oxford: Oxford University Press, 2008). Other important projects are still in the works including Trent Dougherty's book, *The Problem of Animal Suffering: A Theodicy for All Creatures Great and Small,* Palgrave-Macmillan, forthcoming; and a forthcoming dissertation by Faith Glavey Pawl entitled, *A Thomistic Response to the Problem of Animal Suffering*, Saint Louis University.

goodness of God. John Stuart Mill argues that the existence and extent of animal suffering 'blackens the character of the Creator.' He writes:

> If there are any marks at all of special design in creation, one of the things most evidently designed is that a large proportion of animals should pass their existence in tormenting and devouring other animals. They have been lavishly fitted out with the instruments necessary for that purpose; their strongest instincts impel them to it, and many of them seem to have been constructed incapable of supporting themselves by any other food. If a tenth part of the pains which have been expended in finding benevolent adaptations in all nature, had been employed in collecting evidence to blacken the character of the Creator, what scope for comment would not have been found in the entire existence of the lower animals, divided, with scarcely an exception, into devourers and devoured, and a prey to a thousand ills from which they are denied the faculties necessary for protecting themselves! [11]

What is so problematic for Mill and others is that predation and its attendant suffering is a fundamental part of the workings of our natural world. If there is an almighty Creator, then he is responsible for forming the natures of his creatures into the devourer and the devoured.

For most of Christian history the existence of all evils, including natural evil, was explained by the sinful rebellion and fall of mankind. It is said that in the beginning, God created a perfect world—a world that was unmarred by moral and natural evil. God's original design did not include pain, predation, drought, disease or death. These evils were introduced into the world through the free, sinful acts of man. In fact, John Calvin claims that human are deserving of a "dreadful curse" for corrupting the natural world through their sin. He argues:

> It is appropriate then to consider what a dreadful curse we have deserved, since all created things, both on earth and in the invisible heavens, which are in themselves blameless, undergo punishment for our sins; for it has come about that they are liable to corruption not through their own fault. Thus the condemnation of mankind is imprinted on the heavens, and on the earth, and on all creatures.[12]

[11] J.S. Mill, *Three Essays on Religion: Nature, the Unity of Religion, Theism* (New York: Prometheus Books, 1998).
[12] John Calvin, *Commentary on the Epistle of Paul to the Romans*, trans. John Owen (1849), in Mark Murray, *Nature Red in Tooth and Claw*, 79.

It follows from traditional "fall theodicies" that humans are responsible (directly and indirectly) for the suffering of all non-human creatures…not God. [13]

However, in this post-Darwinian age, it is no longer tenable to believe that all suffering entered the world through Adam's rebellion ten thousand, fifty thousand or even two hundred thousand years ago. We now know that sentient animal life preceded human life by about four hundred million years and these years were filled with the bloody struggle for life that we now know is part and parcel of evolutionary 'progress.'

In light of these scientific discoveries some theologians and philosophers have argued that we must accept that natural evil—pain, suffering and death—were part of God's original design plan. For example, Peter van Inwagen argues that "the whole sub-rational natural world proceeds according to God's plan."[14] He implies that natural evils like predation aren't really 'evil' at all but are actually a praiseworthy part of creation. Citing Psalms 104: 20-22 which reads:

> You bring darkness, it becomes night,
> and all the beasts of the forest prowl.
> The lions roar for their prey
> and seek their food from God.
> The sun rises, and they steal away;
> they return and lie down in their dens. [15]

van Inwagen argues that God is worthy of praise for "the order that God has established in nature" which "includes the phenomenon of predation."[16] But it seems that only the most unfeeling of persons[17] could watch a National Geographic special which includes footage of a successful hunt and think that predation is not unfortunate part of our world—unfortunate at least for the rabbits,

[13] For an excellent critique of fall theodicies see chapter three of Marilyn McCord Adams, *Horrendous Evils and the Goodness of God*, (Ithica, NY: Cornell University Press, 1999).
[14] Peter van Inwagen, *The Problem of Evil*, 127.
[15] Psalms 104: 20-22, New International Version
[16] Peter van Inwagen, *The Problem of Evil*, 127.
[17] I don't mean to imply that Peter van Inwagen is an unfeeling person, although this quote makes him appear so. As will become clear at the end of chapter one, Peter van Inwagen believes it is possible that God couldn't have made a world without predation if God also wanted to create a world that was not massively irregular and contained valuable sentient creatures.

mice and deer among us. Clearly the world would be a much better place without the hunt's gruesome conclusion.

In this dissertation I will argue that there are certain features of the world that are surprising on the hypothesis that a perfectly good, all-powerful being governs the universe. Among these features are the pain and suffering of sentient animals, the phenomena of predation, and the mechanism of evolution by natural selection. I will argue that given that there are alternate hypotheses that explain the phenomena better than theism, it is therefore unreasonable to accept theism.

I will take David Hume's hypotheses that he suggests in book XI (X1, sec. 211-212) of his *Dialogues Concerning Natural Religion* as my model. Hume's Philo suggests the following four hypotheses for the possible moral nature of the first cause of the universe:

> There may four hypotheses be framed concerning the first causes of the universe: that they are endowed with perfect goodness; that they have perfect malice; that they are opposite, and have both goodness and malice; that they have neither goodness nor malice.[18]

In this passage Hume identifies four possibilities for the moral character of the first cause of the universe: (1) it is perfectly good (2) it is perfectly evil, (3) it is both good and evil, and (4) it is indifferent to us—that it shows us neither "goodness nor malice.": Hume's Philo argues that when we look at the world we can rule out the first and second hypotheses because, "Mixed phenomena can never prove the two former unmixed principles."[19] This is because the hypotheses that the first cause is either perfectly good or perfectly evil do not do an adequate job at explaining the "mixed phenomena" of good and ill we observe in the world—if the first cause were perfectly good, we would expect things to be much better and if the first cause were perfectly evil, we would expect

[18] David Hume, *The Dialogues Concerning Natural Religion*, ed. David Branch, 2006, Aquinas College: http://www.anselm.edu/homepage/dbanach/dnr.htm#A12
[19] Ibid.

things to be much worse. Philo also argues that we can rule out the third hypothesis because "the uniformity and steadiness of general laws seem to oppose the third."[20] Philo then concludes that, "The fourth, therefore, seems by far the most probable"[21] --the hypothesis that the first cause is indifferent to the wellbeing of its creatures.

Because Philo's second and third hypotheses are not taken seriously by most people, I will spend my time in this dissertation comparing the first hypothesis, classical theism, with the fourth hypothesis, the 'hypothesis of indifference.' Like Hume's Philo, I will argue that the hypothesis of indifference—the hypothesis that "the original Source of all things is entirely indifferent …and has no more regard to good above ill, than to heat above cold, or to drought above moisture, or to light above heavy"[22]—does a much better job of explaining the mixed phenomena, the pleasure and pain, the joy and suffering, the flourishing and floundering, that we observe in the world. In order to fill out Hume's indifference hypothesis a bit, I will stipulate that on the indifference hypothesis God is a personal being who is all-powerful, all-knowing and yet is indifferent to the welfare of his creatures. I will also stipulate that this indifferent god has an appreciation of aesthetic beauty.

In order to illuminate the probabilities involved in my argument, I'd like to borrow Hume's literary device that he uses in book XI of the dialogues. Hume speaks of a visitor of very limited intelligence (let us suppose this visitor has a level of intelligence similar to human beings) who visits our world. Here's what Hume has to say:

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[20] Ibid. Hume's Philo rejects the third hypothesis because he believes that if the origin of the world was of both goodness and malice, we would expect to see good and evil battling in the world in a way that would destroy the working of the laws of nature: "Here the Manichaean system occurs as a proper hypothesis to solve the difficulty: and no doubt, in some respects, it is very specious, and has more probability than the common hypothesis, by giving a plausible account of the strange mixture of good and ill which appears in life. But if we consider, on the other hand, the perfect uniformity and agreement of the parts of the universe, we shall not discover in it any marks of the combat of a malevolent with a benevolent being."

[21] Ibid.

[22] Ibid.

> … if a very limited intelligence, whom we shall suppose utterly unacquainted with the universe, were assured, that it were the production of a very good, wise, and powerful Being, however finite, he would, from his conjectures, form beforehand a different notion of it from what we find it to be by experience; nor would he ever imagine, merely from these attributes of the cause, of which he is informed, that the effect could be so full of vice and misery and disorder, as it appears in this life….supposing, which is the real case with regard to man, that this creature is not antecedently convinced of a supreme intelligence, benevolent and powerful, but is left to gather such a belief from the appearances of things; this entirely alters the case, nor will he ever find any reason for such a conclusion. He may be fully convinced of the narrow limits of his understanding; but this will not help him in forming an inference concerning the goodness of superior powers, since he must form that inference from what he knows, not from what he is ignorant of...[23]

The visitor's epistemic situation is as follows: The visitor is going to take a trip to Earth for the very first time. She doesn't know anything specific about the planet Earth. She does, however, have background information that includes moral and aesthetic principles as well as mathematical and general scientific principles. Before the visitor leaves on her journey, she is asked what is more likely: that the creator of the planet Earth is loving, all-powerful and all-knowing, as in classical theism (T), or is the creator of the planet Earth indifferent to the welfare of his creatures (HI). The visitor replies that as far as she can tell neither proposition is antecedently more likely than the other—the antecedent probability of the hypothesis of indifference is roughly equivalent to the theistic hypothesis. So before the visitor leaves for Earth the prior, epistemic probability of the two positions are roughly on par. Then the visitor arrives in orbit and first notices the beauty of the deep blue oceans, the aqua seas and coral reefs. She notices the tawny, russet and gold hues of the terrain and the swirling intricate, incandescent cloud formations in the skies. When she lands she observes beautiful jungles, waterfalls and desert vistas, the northern lights and the skies at sunset. She sees a young gazelle being born exquisite in its detail, its small hooves and quivering nostrils and its mother gently licking it clean. Then she observes three hyenas lurking in the shadows. They pounce and take the newborn fawn and its mother, ravenously ripping at the bodies and fighting

[23] David Hume, *The Dialogues Concerning Natural Religion*, book XI.

over the best parts. She is aghast, shocked and repulsed. She then learns more about death, pain and suffering on Earth. She learns about disease and congenital defects, and the effects of drought, flood and famine.

We then ask the visitor what she would infer about the moral character of the creator of the world. "Well," the visitor muses, "there are very many good, wonderful and beautiful things about this world, but there are also very many horrific, evil things about this world. If you told me before I got here that this planet was created by a supremely good, all-powerful being, I would be very surprised to find so much evil. And if you had told me that the world was created by a perfectly evil being, then I would have been surprised to find so much good. But if I was told that the creator of the Earth was indifferent to the wellbeing of his creatures—'with no more regard for the good than their ill' then I would be far less surprised[24] at what I found when I arrived on Earth than I would if you told me that an all-good creator was responsible for the phenomena on planet Earth."

My argument is as follows where 'E' stands for all the relevant facts about animal suffering that I will introduce in this dissertation. B is our background knowledge—everything that we know aside from E that is logically independent of E. 'HI' is 'the hypothesis of indifference', 'T' is 'classical theism', '>!' stands for 'many times greater than', '≤' stands for less than or equal to and 'Pr' is the 'epistemic probability' of.

It is important to note that the probabilities in my argument are epistemic probabilities as opposed to frequency or propensity interpretations of probability.[25] I understand epistemic probably as the degree to which evidence supports a hypothesis or the degree to which a rational

[24] Even on HI, our visitor might express surprise at the giraffe's long legs and neck, the gecko's sticky toes and the colorful plumage of the bird of paradise.

[25] Alan Hájek, "Interpretations of Probability", *The Stanford Encyclopedia of Philosophy* (Winter 2012 Edition), Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/win2012/entries/probability-interpret/>.

person would assent to a hypothesis based on the evidence available to him or her. Epistemic probabilities are measures of the degree of credence that a rational person in a particular epistemic situation ought to give a proposition. An epistemic situation can vary from person to person because different people have access to different information. For instance, John Calvin's epistemic situation is very different than the epistemic situation of an educated citizen of the twenty-first century. Therefore my argument will only apply to a subset of rational persons—educated adults who live in the 21st century.

1. All educated persons living in our time should believe that E is true.
2. Pr(HI/B) ≤ Pr (T/B)
3. Pr(E/HI & B) >! Pr(E/T & B)
4. If 1, 2 are true, then educated adult persons living in our time should reject classical theism (T) (by Bayes Theorem)[26]
5. Therefore educated adult persons living in our time should reject classical theism T.[27]

In English, premise one says that the prior or antecedent probability of the hypothesis of indifference (HI) on background knowledge is not less than or equal to the antecedent probability of classical theism (T) on background knowledge. Premise two says that the probability of the evidence for animal suffering on the hypothesis of indifference and our background knowledge is many times greater (>!) than the evidence for animal suffering on theism and our background

[26] By Bayes' Theorem: Pr (T/E) =[PR(E/T) x (Pr/T)]/ Pr (E) If T is .5 and E is 1 and if the probability of E given T is something low like .2, then the probability of theism given the evidence will be something low like .1. It is unreasonable to accept T (or, more strongly, we should disbelieve T) if our degree of belief in T is only 10%.

[27] I am indebted to Paul Draper and Wes Morriston for the basic structure of this argument see Paul Draper, "Pain and Pleasure: and Evidential Problem for Theists," ed. Daniel Howard-Snyder, *The Argument from Evil*, (Indianapolis, IN: Indiana University Press, 1996): 12-29; and Wes Morriston, "Skeptical Demonism, Skeptical Theism, and a Humean Argument," ed. Trent Dougherty and Justin McBrayer, *Skeptical Theism*, (New York: Oxford University Press), forthcoming.

knowledge. Finally if premises one and two are true (as I will argue in this dissertation) then persons in our epistemic position should reject classical theism.[28]

Paul Draper has done more than any other philosopher of religion to revive Hume's abductive argument from evil. Draper writes, "The important question, a question that David Hume asked but that most contemporary philosophers of religious have ignored, is whether or not any serious hypothesis that is logically inconsistent with theism explains some significant set of facts about evil or about good and evil much better than theism does."[29] In this dissertation I will use the Humean model of the evidential argument from evil that Draper recently popularized.[30] I will argue that it is unreasonable to accept theism because certain phenomena or evidence (E=predation, evolution by natural selection, pain and suffering of sentient beings) are a better fit with the hypothesis of indifference—a hypothesis that is logically inconsistent[31] with classical theism.

So, returning to my visitor metaphor…while the visitor wouldn't say that the evidence is 'just what she would expect' given the hypothesis of indifference, the evidence is a very 'poor fit' with T. The evidence is a much 'better fit' with HI and the evidence is many times more likely on HI than it is on T. "Therefore," the visitor reasons, "if premises 1 and 2 are true, then one should reject the hypothesis that an all-good, all-knowing and all-powerful being is the Creator of this world."

[28] I argue that we should reject classical theism rather than arguing that the hypothesis of indifference is true because theism and the hypothesis of indifference do not represent an exhaustive set of possibilities.
[29] Paul Draper, "Pain and Pleasure: and Evidential Problem for Theists," ed. Daniel Howard-Snyder, *The Argument from Evil*, (Indianapolis, IN: Indiana University Press, 1996), 13.
[30] Paul Draper, "Pain and Pleasure: An Evidential Problem for Theists," *Nous* 23 no. 3 (1989): 331-350.
[31] The hypothesis of indifference is logically inconsistent with theism because it states that if God does exist then God does not act out of a concern for our wellbeing while orthodox theism teaches that God is a benevolent being that is morally obligated to care for His creatures.

Now after arriving at this conclusion, the visitor might be presented with many objections. Being the reasonable person that she is, the visitor agrees to listen to these arguments in order to determine whether these will defeat her *prima facie* case for preferring the hypothesis of indifference to theism. These objections come in three main varieties.[32] First, the theist might present the visitor with arguments for the existence of an *all-good*, all-powerful God. If the theist can give the visitor good reason to think that Pr (T/B) >! Pr (HI/B), that is, if the probability of theism on the background information is high enough, then this might offset the weight of E in favor of HI. However as even Peter van Inwagen admits, "even weak arguments for theism (as opposed to arguments for the existence of a designer of the world or a first cause or a necessary being) are in short supply."[33] That is, there are only one or two arguments for the existence of an all-good God—the ontological argument and the argument from religious experience and neither of these arguments are widely regarded to be successful.[34] Further, the discussion of the success or failure of arguments for the existence of God is beyond the scope of this dissertation. So we will set this first type of objection aside.

The second type of objection that the theist might present is a theodicy (or an extension of theism) that is a plausible account of why an all-good, all-powerful God would permit animal suffering. If the theist can come up with a theodicy that significantly raises the probability of the

[32] There are two other types of objections that I will not have space to address in this dissertation. The first is Alvin Plantinga's argument that it is the *sensus divinitatis* that gives us evidence that theism is true and not probability calculations. Plantinga makes this argument in *Warranted Christian Belief.* A second objection to my probabilistic arugment from evil would come from Richard Swinburne who would reject premise one of my argument. He would argue that the prior probability of theism on background evidence is many times greater than the prior probability of the hypothesis of indifference because theism is a simpler hypothesis.

[33] Ibid, 226-27.

[34] Paul Draper has pointed out that Peter van Inwagen has underestimated the number of arguments that might establish the goodness of God: He writes, "It is a mistake to think that design arguments, cosmological arguments, noological arguments are irrelevant to God's goodness. It's God's goodness that makes things like order, consciousness, moral agency, free will likely given theism because those things have value." (personal correspondence).

evidence of animal suffering on theism and background knowledge Pr(E/T & T_1 & B) then the theodicy might undermine premise two of my argument above. In this dissertation I will examine many theodicies that are meant to raise the probability of theism on the evidence of animal suffering. And I conclude that none of these theodicies succeed in raising the probability of theism on animal suffering. There are two ways that a theodicy can fail. First, a theodicy can fail because it is implausible on theism. For instance, some reject the neo-Cartesian theodicy because it would entail that God is deceptive and this is supposed to be inconsistent with classical theism. Second, a theodicy can fail because it doesn't account for the relevant evils.[35] I conclude that each of the theodicies I evaluate in this dissertation fail for the second reason—they fail because they do not adequately or plausibly account for the evils of animal suffering.

A third type of objection comes from theists who argue that some of the probabilities in my argument are inscrutable given that many of God's reasons for permitting evil are beyond our ken. In chapter six, I argue that since my argument concerns epistemic probabilities or judgments about the degree of support that the evidence at hand lends my hypothesis, my argument doesn't depend on an objective assessment of the unknown realms of possible goods, evils and entailments between these. One does not need to survey these uncharted realms in order to make a judgment about what the evidence at hand gives us reason to believe. One does not have to rule out the fact that it is possible that there is a God-justifying reason, or some possible story, that is true for all we know, for the animal suffering reported in E to make a probability assessment of what the evidence at hand gives us reason to believe. So for these reasons and others that I will give in chapter six, the probabilities involved in my argument are not inscrutable.

[35] I thank Paul Draper for pointing out this distinction.

1. Dissertation Outline

One of my goals in this dissertation is to bring attention to a neglected aspect of the problem of evil and to evaluate the treatment of this problem in the literature. I will do this by making the argument that theism does a much poorer job at explaining natural evils like animal suffering than my alternate hypothesis—the hypothesis of indifference. In this introductory chapter I will summarize my project and lay out some important distinctions for understanding the problem of evil including the distinction between the logical and evidential problem of evil, the global and local problem of evil and the moral and natural problem of evil. In addition, I will consider some distinctions that will give us insight into the nature animal suffering including the difference between pain and suffering and the relative importance of pain and suffering for humans and non-human animals. Finally, I will distinguish three different ways that theists might respond to the problem of evil—theists might attempt to defeat an evidential argument from evil by providing a theodicy, a defense, or by providing a skeptical defeater.[36]

In my second chapter I will lay out my argument that theism is a bad fit with the evidence. First I argue that the Earth's evolutionary history provides strong evidence against the existence of a God who is providentially involved in the creation of life on Earth. I will then consider three objections to my argument. The first comes from Michael Murray who argues that evolution is an intrinsically good process that, for all we know, outweighs the evils of evolution. The second comes from the environmental ethicist, J. Baird Callicott who argues that the good of the natural world, taken as a whole, outweighs the interests of the individuals who might suffer from natural evils. And the third objection comes from Peter van Inwagen who argues that, for all we know, evolution

[36] See footnote 31.

by natural selection was the only metaphysically possible mechanism (that doesn't involve massive irregularity) for the creation of life that God had available to him.

In chapters three, four and five I evaluate various objections to my argument from animal suffering. In chapter three I will assess the strength of the neo-Cartesian objection to animal suffering. Neo-Cartesians argue that there is no problem of animal suffering because animals cannot suffer. I will assess three versions of neo-Cartesianism—C.S. Lewis and Peter Harrisons' 'No-Self View', Peter Carruthers and Daniel Dennett's 'Higher-Order Thought View' and Michael Murray's 'Neo-Cartesian Defense'. I argue that current research in evolutionary biology, cognitive ethology and neurology shows that each of these positions is highly implausible.

In chapter four I evaluate the Natural Regularity Defense/Theodicy. Proponents of the Natural Regularity Defense argue that the good of having a world that operates according to regular natural laws outweighs the natural evils that these laws produce and that animal suffering is an unavoidable byproduct of these laws. In response I argue that while I am unsure about whether the good of having a world that operates according to predictable, regular natural laws outweigh all the pain and suffering that occurs in the natural world, it is clear that animal suffering is not an unavoidable side-effect of natural regularity. I make this case by arguing that God might have drastically reduced animal suffering by producing miracles for the benefit of animals (in the absence of humans) and that God could have created a painless (or much less painful) injury detection system for animals.

In chapter five, I explore the possibility that suffering might be instrumentally good for animals. Richard Swinburne argues that the suffering caused by natural evil provides animals with the opportunity to act virtuously in the face of hunger, danger and pain. Swinburne argues that without the challenges that natural hardships pose, animals would not have the chance to

demonstrate these supremely valuable moral virtues. While new research in cognitive ethology supports Swinburne's claim that animals are capable of behaving both virtuously and morally, I argue that the opportunities animals have to act virtuously do not offset their suffering.

In chapter six, I evaluate a different kind of objection to my argument—the skeptical defeater. Skeptical theists argue that certain commonsense considerations undermine our ability to conclude that the evidence is a poor fit with theism. In short, they argue that our cognitive position is limited in such a way so that are not in a position to know that God doesn't have a morally sufficient reason for permitting certain amounts, types or instances of suffering. Because of our limited perspective, skeptical theists argue that we can't know that the probability of our observations of good and evil in the world is much more probable on the hypothesis of indifference than it is on theism. This is because the probability of evidence (E) on theism is dependent on the likelihood of there being God-justifying reasons for the evils described in E. But according to skeptical theists, we are in the dark about the probability of there being God-justifying reasons for the evils described in E. In response, I will argue that the probabilities that I use in my argument are epistemic. Epistemic probabilities are an assessment of the strength of belief a rational person should assign a hypothesis based on the evidence available. The skeptical theist's appeal to hypothetical possibilities does not undermine my argument but just serves to underscore that an assessment of epistemic probability is defeasible.

Finally in the concluding chapter, I will consider the possibility that animals enjoy a life of eternal bliss in the ever-after and that this somehow defeats their earthly suffering. I reject this theodicy, however, because it does not explain why animals needed to suffer in the first place. Finally, I conclude by observing that the prospects for successful theodicies/defenses for animal suffering seem dim. Unless the theist has recourse to some very strong argument for the existence

of an all-good God, I argue that it is unreasonable for someone in our epistemic situation to believe in the God of classical theism.

2. Situating my Project: Some Important Distinctions

From the "Riddle of Epicurus" to the book of Job…from Hume's *Dialogues Concerning Natural Religion* to Leibniz's *Théodicée*, there has been thousands of years worth of material on both sides of the argument from evil. In this section I would like to situate my project within this vast landscape. I begin by discussing the differences between logical and evidential problems of evil, local and global problems of evil and moral and natural problems of evil and the distinct challenges that the various types of problems of evil face. My argument is formulated as an evidential argument that centers on pain-producing global policies that promote natural evils. Because my argument does not focus on local or moral evils, it is immune to certain objections and criticisms that might be leveled at arguments that are logical and focus on moral and local evils. However, my argument faces its own challenges and it's important to get clear on exactly what these challenges might be.

Next I look at two important distinctions for my argument from animal suffering: the distinction between pain and suffering and the relative moral worth of human suffering and animal suffering. I argue that, like humans, animals are capable of experiencing pain and suffering from their pains. In addition, I argue that, like humans, animals are also capable of suffering from negative emotions like lonesomeness, seclusion, depression, disappointment, frustration, fear and shame. Next I claim that the pain and suffering of non-human animals is of equal moral importance to the pain and suffering of human animals. Because an extended defense of this claim is beyond the scope of this dissertation, I do not provide a lengthy argument for the equal moral significance

of human and animal pain and suffering. However, my argument doesn't depend on the truth of this claim: it is sufficient to acknowledge that the pain and suffering of non-human animals is a bad-making feature of the world—a feature that makes the world worse than it would have been without it.

Finally, I examine two types of objections that have been leveled at arguments from evil: theodicies and defenses. Proponents of theodicies and defenses assume different burdens of proof and therefore my counter-objections to these arguments will differ according to the burden of proof assumed by the proponent of the argument.

i. Logical and Evidential Arguments from Evil

Historically arguments from evil have been deductive arguments. Proponents of logical arguments from evil have maintained that God's existence is logically incompatible with the existence of evil. For instance, consider J.L. Mackie's formulation of the problem of evil. He writes:

> In its simplest form the problem is this: God is omnipotent; God is wholly good; and yet evil exists. There seems to be some contradiction between these three propositions, so that if any two of them were true the third would be false. But at the same time all three are essential parts of most theological positions: the theologian, it seems, at once *must* adhere and *cannot consistently* adhere to all three[37] (italics in the original).

Mackie identifies a trilemma or three propositions (1. God is omnipotent, 2. God is wholly good, 3. Evil exists) that he claims cannot be consistently embraced. Mackie's formulation is an example of the logical formulation of the problem of evil. However logical arguments from evil like Mackie's proved to be vulnerable to any objection that could provide a logically possible way that God's

[37] J. L. Mackie, "Evil and Omnipotence," *Mind,* New Series, 64 no. 2 (1955): 200-212, reproduced: http://www.ditext.com/mackie/evil.html

goodness could be compatible with evil.[38] Since even God's power is subject to logical limitations (e.g. if humans have libertarian freedom then God cannot make someone freely do what is right, etc…), it is logically possible that God might have to permit some evil (or the *possibility* of some evil) in order to obtain some great good. Because our knowledge of possible goods, evils and the necessary connections between them is limited, we cannot rule out the logical possibility that some evil is necessary for a very important good. Therefore, it is logically possible that the evils that we observe are necessary for some great, outweighing good.

Given objections of this type, most philosophers consider the logical version of the problem of evil to be passé.[39] As a result, atheologians have formulated *evidential* versions of the problem of evil that avoid the difficulties that plagued the earlier logical forms of the argument from evil. In this dissertation I will argue that animal suffering makes God's existence *unlikely* but not *impossible*. Instead of attempting to show that evil is logically incompatible with the existence of God, evidential versions of the problem of evil, like my own, only attempt to show that it is *improbable* that God has a morally sufficient reason for permitting many of evils that he does.

[38] In the book, *God, Freedom, and Evil*, Alvin Plantinga defense against the inductive argument from natural evils is as follows: for all we know it was a great good for God to allow the moral freedom of non-human angelic persons. Some of these angelic persons choose to disobey God and now spend their time creating fires, floods, earthquakes, tornadoes and other natural disasters. For all we know all natural evil is the result of the free actions of demonic persons. This hypothesis seems like it is logically possible (at least to those who believe that the existence of non-embodied persons are logically possible) and would account for much of the seemingly gratuitous evil we observe in our world.

[39] J. L. Schellenberg is a notable exception.

ii. The Local and Global Problems of Evil

Local arguments from evil proceed from premises about particular instances of evil. For instance, consider William Rowe's famous 1979 formulation of the evidential argument from evil. He asks us to consider some particularly troubling instances of evil, one of which is animal suffering:

> Suppose in some distant forest lightning strikes a dead tree, resulting in a forest fire. In the fire a fawn is trapped, horribly burned, and lies in terrible agony for several days before death relieves its suffering. So far as we can see, the fawn's intense suffering is pointless. For there does not appear to be any greater good such that the prevention of the fawn's suffering would require either the loss of that good or the occurrence of an evil equally bad or worse. Nor does there seem to be any equally bad or worse evil so connected to the fawn's suffering that it would have had to occur had the fawn's suffering been prevented.[40]

Rowe's inductive argument from evil taps into our intuition that it is unlikely that there is any outweighing good (or the prevention of an equally bad or worse evil) that depends upon this particular fawn experiencing the agony of being burned alive. Rowe's argument can be paraphrased as follows where E1 stands for the fawn's suffering:

1) No good we know of justifies an omnipotent, omniscient, perfectly good being in permitting E1.
2) Thus it is likely that no good at all justifies an omnipotent, omniscient, perfectly good being in permitting E1.
3) If an omnipotent, omniscient, perfectly good being exists then he does not permit unjustified evils.
4) Therefore there probably is no omnipotent, omniscient, perfectly good being.

Rowe's argument from evil is a local argument as it appeals to one particular instance of horrific suffering. Ivan Karamazov's bitter invective in the novel *Brothers Karamazov* is another example of a local argument from evil. He appeals to several instances of horrendous suffering to make his case against God. Here is one of the examples from the *Brothers Karamazov*:

[40] William Rowe, "The Problem of Evil and Some Varieties of Atheism," *American Philosophical Quarterly* 16, (1979): 225-41, reprinted in *The Evidential Argument from Evil*, ed. Daniel Howard-Snyder, (Bloomington, IN: Indiana University Press), 4.

> …there was a little girl of five who was hated by her father and mother…this poor child of five was subjective to every possible torture by those cultivated parents….They beat her, thrashed her, kicked her for no reason until her body was one bruise. Then they went to greater refinements of cruelty—they shut her up all night in the cold and frost in a privy…they smeared her face and filled her mouth with excrement and it was her mother, her mother did this.[41]

Rowe, like Dostoevsky's Ivan make their case against God by citing particular instance of horrendous suffering for which there is seemingly no good explanation.

Global arguments from evil, on the other hand, appeal to the existence of evils on a global scale. The global argument from evil appeals to the overall quantity or quality of evil or they appeal to general laws that tend to produce pain and suffering. My formulation of the problem of evil is a global formulation. I argue that the general distribution of pain and pleasure in the world is much more likely on the hypothesis of indifference than on classical theism. My argument is global because it appeals to the global distribution of good and evil and does not appeal to any particular horrors.

Local and global problems of evil pose distinct problems for God's goodness because it is possible that God's permission of child abuse or the fawn's suffering in the above example is far more troubling for God's goodness than great amounts of global suffering. To see why this is the case, suppose that the total amount of global evil far exceeds the child's suffering but that the total amount of global evil is comprised of billions of paper cuts, stubbed toes and headaches. Even though the collective amount of global suffering might outweigh the one child's suffering, the horrendous nature of the child's suffering poses a far greater problem for God's goodness than a very, very large number of trivial evils.

[41] Fyodor Dostoevsky, *The Brothers Karamazov*, (New York: Barnes and Noble Classics, 2004), 223-4.

One reply to local problems of evil is to argue that God might have a good reason to create a world with some evil (even with some horrors).[42] If this is the case then God might have no other option than to choose an arbitrary amount of evil in the world he creates. This is because there may be no moral reason to prefer a world with x amount of suffering to a world with x-1 suffering. Van Inwagen likens this to a jury setting a prison term of 10 years. If the judge has a good reason to punish a criminal, then there does not seem to be a good moral reason for preferring a prison sentence of 9 years and 364 days to a 10 year prison sentence.[43] Because there is not a morally principled reason for preferring a 9 year and 364 day sentence to a 10-year sentence to a 10 year and 1 day sentence, the judge must draw some arbitrary line (if the criminal is guilty and deserving of some punishment). Likewise, if God has a good reason for permitting some suffering, God might have to pick an arbitrary amount of suffering within a morally acceptable range. If this is the case then there may be no reason for the child's abuse or the fawn's suffering other than the fact that God had to make a "choice about where to draw the line, the line between the actual horrors of history, the horrors that are *real*, and the horrors that are mere averted possibilities, the might-have-beens."[44] According to van Inwagen, God is morally justified in his choice because he had to make some choice and "there was no non-arbitrary line to be drawn."[45] The child and the fawn are merely unlucky victims of God's morally justifiable general policy.

The success of van Inwagen's reply depends on how plausible it is that God needed to create a world with some amount of randomly distributed *horrors* in order to achieve some great good. I find this incredibly implausible however Van Inwagen's defense is an interesting one and

[42] Van Inwagen argues that for all we know "when human beings misused their freedom and separated themselves from God, the existence of horrors was one of the natural and inevitable consequences of this separation." Van Inwagen argues that the existence of horrors is a necessary condition of human understanding of the consequences of being separated from God. Peter van Inwagen, *The Problem of Evil*, 103.
[43] Peter van Inwagen, *The Problem of Evil* (New York: Oxford University Press, 2006), 125.
[44] Ibid, 105.
[45] Ibid, 105.

deserves a lengthy reply.[46] However, because my argument from evil will not be affected by this type of response, a lengthy reply would be beyond the scope of this dissertation. This is because my argument from evil is a global argument, not a local argument so it will not do to point out that God needed to create some general policy as it is the policies themselves to which I am objecting. I will argue that there are certain laws of nature that promote suffering and it seems that God could and should have done things differently. In response to this account it will not do to point out that some animals will fall to predators or fail to flourish in a struggle with the fit as I question the goodness of instituting the phenomena of predation and evolution by natural selection to begin with.

iii. Moral and Natural Evil

Philosophers and theologians recognize two types of evil: moral and natural evil. Moral evils are perpetrated by moral agents through their direct or indirect actions or through their failure to act. Moral evils can range from the relatively benign (like rudeness) to the serious like war, murder, rape and torture. Natural evils, on the other hand, are evils for which no human moral agent is responsible. Natural evils occur because they are part of the workings of the natural world. Examples of natural evils are natural disasters like earthquakes, tornadoes, hurricanes tsunamis, volcanoes, floods and draughts; diseases like polio, measles, malaria, meningitis, small pox, cholera and AIDS; congenital defects like anencephaly or cystic fibrosis; or accidents like being burnt, drowned or crushed. Another important natural evil that is often left out of such lists is the evil of

[46] Marilyn Adams has an interesting reply to global arguments from evil in her book, *Horrendous Evils and the Goodness of God*.

predation—this is the evil of having one's life end prematurely often through great suffering by being eaten from the inside (by parasites) or the outside by predators like wolves, bears or sharks.

Sometimes it is hard to separate moral from natural evils. This occurs when natural evils are compounded by our failure to act or our failure to take the adequate precautions against foreseen dangers. For example, the evils suffered as a result of the tsunami that struck Japan in March of 2011 where a mixture of moral and natural evil. The giant waves that swept Japan's shoreline capsizing boats, flooding homes and sweeping away the unsuspecting were natural evils while the deaths (and subsequent cancers) caused by damage to the Fukashema power plant were due to both moral and natural evil. Experts say that Japanese nuclear physicists should not have built a nuclear power plant of that design so near a fault line. In short, Japanese nuclear physicists should have foreseen such an accident and the suffering caused by the subsequent meltdown is, in part, the fault of moral agents. Another example of mixed evil is the 2005 hurricane Katrina and its aftermath. The suffering caused by hurricane Katrina was a complex web of moral and natural evil: The natural evil of a powerful level-five hurricane mixed with the moral evils of poverty, improper levy design, corrupt police, rioting, racism and a city built below sea level came together to create a tragedy of epic proportions.

Often animals suffer from mixed evils: this might happen when the proximate cause of their suffering is a natural evil but the originating cause is a human, moral evil. Negligent campers might start a forest fire which leads to Rowe's fawn's death or human development might cause habitat destructing causing animals to die from starvation because they are unable to forage for food. In this dissertation I will primarily focus on instances of unmixed natural evil as I believe that animal suffering in the absence of human beings is the most troubling and neglected aspect of the problem of evil.

iv. Pain and Suffering

A large part of the problem of evil is not just moral evil but the 'evils' of pain and suffering. But what is pain and suffering and what is it about pain and suffering that makes them evil? Although the words 'pain' and 'suffering' are often used synonymously, some people use these words to pick out slightly different experiences.

The clinical definition of pain is an aversive bodily sensation typically associated with actual or potential tissue damage.[47] Some philosophers define pain solely as a bodily function that may or may not include a subjective 'felt hurt'. However, I believe this is a misuse of the word 'pain' and so I will reserve the word 'pain' for (any level of) conscious experience of aversive stimuli. I will use the neutral word 'nociception' to indicate bodily responses to aversive stimuli which may or may not be experienced consciously. Suffering, on the other hand, is "a highly unpleasant emotional state associated with more-than-minimal pain or distress."[48] The problem of evil is largely a problem of suffering: It is that there are states of affairs that we greatly dislike or cause us great distress. What makes pain bad is that we don't like it—we wish to rid ourselves of it and it is the confounding of our deepest desire to be rid of unwelcomed sensations that makes pain bad.

Pain is almost always accompanied by suffering. However the terms 'pain' and 'suffering' are not co-extensively. A person (or creature) can experience pain without suffering from the pain and a person (or creature) can suffer without experiencing pain. There are several ways a person (or creature) can experience pain but not suffer from their pains. First, a person (or creature) can be in pain without suffering from that pain by experiencing some very small pain like a paper cut, a

[47] David DeGrazia, *Taking Animals Seriously: Mental Life and Moral Status,* (New York: Cambridge University Press, 1996), 107.
[48] Ibid, 116.

stubbed toe or minor sunburn. While a person or creature feels these pains they cannot be said to suffer from them. A second way that a person (or creature) can experience pain without suffering is if they are temporarily distracted from their pain. In ordinary cases these pains are also minor pains: A person might discover a large bruise on her leg but may be unable to remember how she got the bruise. Presumably the person didn't remember the initial pain involved in the injury because she was preoccupied at the time the injury occurred. Animals might also be preoccupied at the time of an injury and not notice the injury until sometime later.

A third way a person can experience pain but not suffer from it is if the person has masochistic tendencies. Masochists feel what others feel when they are in pain but 'enjoy' it, for one or both of the following reasons: (a) their pain is part of a mixed sensation of both pain and pleasure. Sometimes when a person injures herself she feels the pain from the injury but endorphins are also released bringing about pleasurable sensations. Some people who suffer from chronic pain will purposely injure themselves in order to get the rush of endorphins that accompanies the injury. People who cut themselves often do so for this reason. The other reason that masochists might 'enjoy' their pain sensations is because of (b) the meaning they attach to their pain. Some people injure themselves as either an outward expression of their inward suffering or as a type of penance; they feel as if they deserve to suffer and so their pain gives them psychological satisfaction.

A fourth way that a person may experience pain but not suffer from it is if the pain is purposefully chosen and embraced. A person might choose to endure pain for either or both of the above reasons. Athletes often report that their training sessions are both painful and pleasurable; the endorphins released during athletic exercise help athletes to enjoy the pain of their workout. Athletes also choose to endure pain because of the meaning they attach to their athletic

accomplishments. Although some or most people would prefer to have the benefits of exercise without the accompanying pain, others would not dispense with the pain if they had a choice. This is because some believe that pushing through their pain and thus overcoming it is an important achievement that they would not dispense with. Many women also choose to forgo pain medication during childbirth for this reason. They believe that embracing and working through the pain of childbirth is one of the great accomplishments of a women's life. These voluntarily chosen pains do not strike us as evils in need of justification because the masochist, the athlete and the laboring woman do not wish to avoid their suffering.

A person (or creature) can also suffer without experiencing pain. One example of suffering in the absence of physical pain is suffering from grief, loss, fear or depression. Emotional pains undeniably cause a great amount of suffering but normally do not cause physical pain.[49] Another example of suffering that occurs in the absence of pain is when a disease causes loss of function but not pain. Sometimes those with multiple sclerosis or cancer experience a loss of function without also experiencing pain. One rare disease that causes suffering but not pain is CIP or the congenital insensitivity to pain. People with CIP unwittingly maim themselves because they cannot feel pain from their injuries. In the book *The Gift of Pain*, Dr. Paul Brand describes a patient with CIP named Tayna. As a toddler, her parents found her playing with her own blood after she bit off a finger. Later as she learned to walk, she would re-sprain her ankles over and over again until her legs were permanently damaged. As an eleven-year old she had to be institutionalized because of the extent of her self-inflicted injuries:

> She had lost both of her legs to amputation…Tanya had also lost most of her fingers. Her elbows were constantly dislocated. She suffered the effects of chronic sepsis from ulcers on her hands and amputation stumps. Her tongue was lacerated and badly scarred from her nervous habit of chewing it.[50]

[49] In some cases depression can also cause physical pain.
[50] Paul Brand and Philip Yancey, *Pain: The Gift Nobody Wants, (*New York: Harper Collins Publishers, 1993), 3.

Patients like Tanya clearly suffer from CIP although by definition, CIP causes no pain. Clearly in this case suffering can occur in the absence of physical pain.

Humans and other animals can suffer in a subjective or an objective sense.[51] People (or creatures) suffer in a subjective sense when they take themselves to be suffering. A person or animal might suffer in the subjective sense if she loses something she cares about deeply. Others placed in the same situation might not suffer from the loss because they don't care about the thing that was lost. Eleonore Stump gives the example of a child who is upset over an objectively trivial matter. She writes:

> A loving philosopher-father, trying to deal gently with his small daughter's childish tantrums finally said to her with exasperated adult feeling: "It isn't reasonable to cry about these things." Presumably, the father meant that the things for which his little daughter was weeping did not have much value on the scale that measures the intrinsic value of good things important for human flourishing; and, no doubt, he was right in that assessment. But there is another scale by which to measure, too, and that is the scale that measures the value a thing has for a particular person because of the love she has for it. The second scale cannot be reduced to the first.[52]

People suffer in a subjective sense when loose something they care about deeply. If the child is crying over something that is very important to her then the child in the example is suffering in a subjective sense but not an objective sense.

A person suffers in an objective sense when they experience a loss that affects their flourishing. If a person suffers in an objective sense then they suffer regardless of whether they believe they are suffering. People who suffer from Anton's syndrome are blind but cannot be brought to believe that they are blind. Even though the condition is neither physically nor psychologically painful, it would be a mistake to say that people with Anton's syndrome do not

[51] This distinction is fairly controversial but it highlights an important way in which animals can suffer. As my argument does not hang on this distinction those who disagree may safely ignore it.
[52] Eleonore Stump, *Wandering in the Darkness: Narrative and the Problem of Suffering*, (New York: Oxford University Press, 2012), 9.

suffer from blindness.[53] Some people who are abused often do not take themselves to be suffering even though they are. Victims of abuse often come to see the abuse as normal and don't understand that their wellbeing has been severely impaired. One example of this is Stockholm Syndrome where captives bond and sympathize with their captors: "strong emotional ties develop" despite the fact that "one person intermittently harasses, beats, threatens, abuses or intimidates the other."[54] Eleonore Stump gives the following example of a woman who was taken as a slave and abused for many years and did not understand that she was sexually violated:

> Reporters attempting to elicit from a Mauritanian woman rescued from enslavement the story of her suffering at the hands of her master asked her whether he had raped her; but she had a hard time understanding the question. "Rape?" she asked; "you mean what he did when he came in the night? Yes," she said, "he did that often." And she seemed almost indifferent to it. It is part of the horror of her story that she consents to what is in fact non-consensual sex.[55]

Although the rape victim in the above account did not take herself to be a victim of rape, it is very likely that her dignity, her sense of self and her wellbeing were still diminished through the act. Because the rape victim has suffered an important loss this counts as a type of suffering even though the victim does not believe she is suffering.

The distinction between the subjective and objective dimensions of suffering is an important distinction for our discussion of animal wellbeing because animals can be said to suffer when their flourishing is diminished even thought they do not take themselves to be suffering. A dog that has been abused as a puppy might, as a result of its abuse, live the rest of its life in fear. Because the dog's wellbeing is seriously diminished, one can say that the dog is still suffering from its abuse even though the dog doesn't take itself to be suffering. If one believes that there is such a

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[53] Ibid, 3-4.
[54] D.G Dutton and S.L. Painter, "Traumatic Bonding: The Development of Emotional Attachments in Battered Woman and Other Relationships of Intermittent Abuse," *Victimology: An International Journal* 1 no. 4 (1980): 139-155.
[55] Eleonore Stump, *Wandering in the Darkness: Narrative and the Problem of Suffering*, 6-7.

thing as an objective sense in which a being can suffer then this would make the problem of animal suffering worse for the theist than it already is.

v. The Relative Moral Worth of Human and Animal Suffering

The distinction between pain and suffering is sometimes used by those who deny that animals can suffer. Some say animals experience pain but they do not suffer from their pains.[56] If this were the case, then the evils that animals suffer in this world would be greatly diminished. However, I will argue in chapter three that such a categorical assumption is mistaken—I argue that many species of animal suffer from their pains just like humans do. Animals do suffer from their pains in much the same way that humans do although the physical and psychological differences between humans and animals mean that they suffer differently in different contexts. For example, in some circumstances an animal's suffering might be decreased by its inability to reflect upon itself and its own suffering. D.H. Lawrence expresses this idea in his poem "Self Pity:"

> I never saw a wild thing
> sorry for itself.
> A small bird will drop frozen dead from a bough
> without ever having felt sorry for itself.[57]

Although an inability to reflect upon one's suffering might make one suffer less (than humans in a similar situation), it also has the potential to make one suffer more (than humans in a similar situation). For example, like in the poem above, I am told that birds sometimes freeze to death in winter if they are unable to find adequate shelter near structures or in evergreen trees or shrubs.

[56] C.S. Lewis, Robert Hanna, Sam Newlands.
[57] D. H. Lawrence, *Complete Poems*, (New York: Penguin Classics, 1998).

Consider a sparrow waiting for morning to come during an unseasonable cold snap. The sparrow will not be troubled, the way I have been when I'm 'freezing' in my sleeping bag at my campsite, by the thought that morning is five hours away. The sparrow will not be troubled by the thought that it has to endure five more hours of the cold before relief comes with the morning sun. On the other hand, when dawn is approaching the sparrow cannot comfort itself by knowing that it is about to find relief from its suffering. Therefore, in some instances it seems that an animal's inability to reflect on its suffering would decrease its suffering while in other instances it seems to increase its suffering. I'm not sure how this balances out in the end, but one thing is clear, even if animals might suffer less because of their inability to reflect on their suffering, it does not mean that they do not suffer.

It seems obvious to me that human pain and animal pain are morally equivalent, all other things being equal. I unequivocally agree with Singer's quote above that the moral importance of suffering is not diminished because the being that suffers is not human. Indeed the fact that animals are often "humble, helpless and small"[58] should in some circumstances give us a greater obligation to help. However one does not have to accept this claim in order to appreciate the force of the problem of animal suffering. My argument does not hang on the equal moral worth of the pains of human and non-human animals. One merely needs to agree that the world would have been better without the suffering of animals.

[58] C.S. Lewis argues essential agrees with Singer that a creature's species membership shouldn't matter, however Lewis goes on to argue that animals do not experience pain. C.S. Lewis, *God in the Dock: Essays in Theology and Ethics*, ed. Walter Hooper, (Grand Rapids, MI: Eerdmans Publishing Company, 1970), 168.

vi. Theodicies and Defenses

In this dissertation I will survey various attempts to defeat my argument from animal suffering. These attempts to defend God from the problem of animal suffering come in the form of theodicies and defenses.[59] A theodicy is literally a justification of God (Gk: *theos dike*). Theodicies are attempts to give God's reasons or moral justification for permitting evil that the theodicst is prepared to defend as being true[60] or as likely to be true.

A successful theodicy will explain why God is justified in permitting certain evils or more precisely, a successful theodicy will explain how suffering is compatible with the existence of an all-good God. In this dissertation we will be concerned with theodicies that explain why God is morally justified in permitting animal suffering. Theodicies must meet at least two conditions. First, the theodicy must not be implausible on theism. For example, a theodicy that includes the concepts of rebirth, karma and reincarnation might do a good a job at making sense of animal suffering yet not be a good fit with theism. The second criterion is that successful theodicies must explain why God is justified in permitting animal suffering. Typically theodicies explain why God is justified in allowing some evil by arguing that the permission of some evils are necessary for some very great good. If this is the case, then the evil that God permits must, at the very least, meet both of the following conditions: A) The evil permitted by God must be sufficiently outweighed by some good/s[61]. B) The outweighing good achieved at the cost of some evil must not be able to be achieved through a less serious evil—a good God will choose the least morally significant evil (or if there is not one single least morally significant evil, God should choose one from a group of 'lesser'

[59] Another type of response to the evidential problem of evil is the skeptical response. I will discuss this approach in chapter six.
[60] This is Alvin Plantinga's definition of a theodicy
[61] The outweighing good may also be the prevention of a more serious evil.

evils) available to him to secure the outweighing good.[62] If a theodicy does not meet conditions A and B above then it has failed to explain why God has permitted some evil or group of evils.

Defenses are stories that "are true for all we know" and would explain why God is justified in permitting evil if the story were true. According to van Inwagen a defense is a story according to which "God and the suffering contained in the actual world both exist, and which is such that (given the existence of God) there is no reason to think it is false, a story that is not surprising on the hypothesis that God exists."[63] According to Peter van Inwagen, the theist's defensive strategy is analogous to the defense given for Clarissa's actions in the following scenario:

> Your friend Clarissa, a single mother, left her two very young children alone in her flat for several hours very late at night. Your Aunt Harriet, a maiden lady of strong moral principles, learns of this and declares that Clarissa is unfit to raise children. You spring to your friend's defense: "Now Aunt Harriet, don't go jumping to conclusions. There's probably a very good explanation. Maybe Billy or Annie was ill, and she decided to go over to the clinic for help. You know she hasn't got a phone or a car and no one in that neighborhood of hers will come to the door at two in the morning."[64]

Proponents of defenses do not claim that their story is true or even that it is most probably true; in fact, van Inwagen explains that "[in practice] the probability of a defense will never be high on theism."[65] All that the proponent of a defense is claiming is that *if* the story were true it would explain the behaviors or evils in question. According to van Inwagen a defense is successful if the defense i) cannot be ruled out on the grounds that the atheologian knows that the story is false ii) is not surprising on theism and iii) would successfully show that God is justified in allowing the evil if the story were true. Although none of the defenses I evaluate in this dissertation meet these

[62] A and B are merely necessary conditions for God's goodness. One might make the case that there are other conditions that God must fulfill in order to be considered just. For instance: C) God must not create any creature whose life, when considered on the whole, is not worth living or D) God must not treat any creature merely as a means, or E) God must not violate any special duties that he might have toward his creatures.
[63] Peter van Inwagen, *The Problem of Evil*, 125.
[64] Ibid, 66.
[65] Ibid, 172.

criteria, in chapter six I will argue that even if a defensive story was formulated to meet these criteria it would not defeat a Hume-style argument from evil.

Chapter Two:

Evolution and the Problem of Predation

Tyger, tyger, burning bright
In the forests of the night,
What immortal hand or eye
Could form thy fearful symmetry?...

What the hammer? What the chain?
In what furnace was thy brain?
What the anvil? What dread grasp
Dare its deadly terrors clasp?...

Did he smile His work to see?
Did he who made the lamb make thee?...[66]
--William Blake

In this chapter, I will argue that the ages of suffering endured by countless animals in the earth's long evolutionary history provides strong evidence against the existence of a God who is providentially involved in the creation of life on earth. Particularly, evolution as a means of creation is extremely problematic. I will then consider three objections to my argument. The first comes from Michael Murray who argues that evolution is an intrinsically good process that, for all we know, outweighs the evils of evolution. The second objection might be imagined to come from an ecocentric holist J. Baird Callicott who argues that the good of ecosystems outweighs the interests of the individuals who might suffer from natural evils. And the third objection comes from Peter van Inwagen who argues that, for all we know, evolution by natural selection was the only metaphysically possible mechanism (that doesn't involve massive irregularity) for the creation of life.

[66] William Blake, "The Tyger," *Songs of Innocence and Experience*, http:// http://www.gutenberg.org/ebooks/1934

i. Evolution—A Quick Definition

Evolution is a process of change in heritable characteristics of organisms across generations. Typically the theory of evolution is expressed in two theses. The first is a thesis about universal common descent and the second about the mechanisms that drive evolutionary change. All life on earth can be traced back 3.7 billion years to a common ancestor. Through millions of years of repeated speciation and divergence the 'great tree of life' with its diverse and varied species emerged. In the earth's particular evolutionary history, the tree of life 'grew' and species became more and more complex, sophisticated and advanced.

There are four factors that drive evolutionary change. First, organisms tend to produce more offspring than the environment can support leading to competition for scarce resources. Second, because there is diversity in phenotypical traits in populations, some individuals will have the traits that will help them to successfully compete for the resources they need to survive. These are the fit—individuals with the traits that allow them to outperform conspecifics. And this is the process of natural selection. Third, the fit have heritable traits that are stored in their genetic code and tend to produce offspring that have the characteristics that allowed their parents to survive in the environment. When organisms are able to survive long enough to pass on these traits, then these traits are genetically preserved. As a result, succeeding generations will contain more individuals with the advantageous characteristics—characteristics that aid the organism's survival in its particular environment—and eventually the traits in the general population will change. This is called evolution by natural selection (as distinct from just natural selection by itself).[67] Fourth, random mutations occur in the genetic material of the offspring. While most random mutations are

[67] I would like to thank Mike Zerella for helping me see this distinction and for help in correcting the scientific inaccuracies in this section.

detrimental or neutral, some random mutations are beneficial to the offspring allowing them to compete successfully for scarce resources. As this process repeats itself, over time the present generation will look very different than its ancestors—so different, in fact, that a distinct species will have emerged. Thus, the process of evolution by natural selection has the potential to transform very simple species into very complex species[68] over millennia.

1. Creation by Evolution

Evolution by natural selection is a brutal, merciless process that doesn't seem worthy of an all-powerful, benevolent deity. This has led some Christian believers to reject evolutionary theory. Henry Morris, the father of the contemporary young-earth creationist movement, argues that the theory of evolution is theologically unacceptable. He writes:

> Evolution is also the most inefficient and cruel method for creating man that could be conceived. If God is a God of love and wisdom and power (as the Bible teaches), then how could He ever be guilty of devising such a scheme as evolution?...If one wishes to believe in evolution, he is free to make that choice, but he certainly should not associate a wise, powerful, loving God with such a monstrous system.[69]

However, rejecting evolutionary theory is not an option for religious believers who have been educated in mainstream science classrooms. Instead, sophisticated religious believers are faced with the challenge of reconciling the 'God of love and wisdom and power' with the horrors of evolution. In this section I will argue that the evidence of evolution it is much more likely on the hypothesis of indifference (HI) than it is on theism (T).

There are a few reasons why the evidence from our evolutionary history seems to be a bad fit with classical theism. First, if God used evolution as the mechanism for creation, then he has

[68] Or evolution can transform complex species into simpler species depending on environmental pressures.
[69] Henry M. Morris, "The Day-Age Theory," *And God Created*, ed. K.L. Segraves, (San Diego, CA: Creation Science Research Center, 1973), in Michael J. Murray, *Nature Red in Tooth and Claw*), 73.

used a process which treats valuable living beings as mere fodder for his purposes. This has led to the charge that evolution is an incredibly wasteful process and if God used evolution for his purposes then God has been wantonly wasteful. Yet it isn't the waste itself which is problematic—we wouldn't object if God decided to bring stars in and out of existence just to see a thousand, beautiful supernovae. Instead, the kind of waste that is troubling is the waste of living beings. From this waste it seems that God must regard the lives of his creatures as having so little worth that they can be readily discarded. Annie Dillard reflects on the incredible waste of life in the natural world in the following passage:

> I don't know what it is about fecundity that so appalls. I suppose it is the teeming evidence that birth and growth, which we value, are ubiquitous and blind, that life itself is so astonishingly cheap, that nature is as careless as it is bountiful, and with that extravagance goes a crushing waste that will one day include our own cheap lives, Henle's loops and all. Every glistening egg is a *mememto mori*.[70]

Waste among living things is especially pronounced among lower animals. Naturalist Edwin Teale reports that a lone female aphid breeding for one year would produce so many living aphids that, even though they are only one-tenth of an inch long, if they are placed end to end they would extend twenty five thousand *light-years* into space![71] Needless to say the vast majority of these aphids do not live to adulthood—most aphid eggs like those of fish, frogs, and insects are devoured moments after they are laid. Of those eggs that hatch even fewer reach maturity.

Sea turtles hatchlings also face poor odds. After emerging from their sandy nests, they must waddle into the ocean before gulls, pelicans or other predators pick them off. Once they reach the ocean they must navigate the pounding surf which inevitably crushes some of the hatchlings. Then the hatchlings must avoid oceans of predators waiting to scoop up the new hatchlings by the mouthful. Conservationists estimate that the odds of reaching maturity for a sea turtle hatchling

[70] Annie Dillard, *Pilgrim at Tinker Creek*, (New York: Harper Perennial Modern Classics, 1999), 162.
[71] Edwin Way Teale, *The Strange Lives of Familiar Insects*, (New York: Dodd, 1962) quoted in Annie Dillard, *Pilgrim at Tinker Creek*, 169.

range from one-in-a-thousand to one-in-ten-thousand. If one is unmoved by the staggering waste of lower animal life, consider the human conceptus. The odds are also stacked against our young. For instance, there is a 70% chance that a human embryo will die before it is two weeks old. And after that there is a 20% chance the fetus will die before its twelfth week. Human life (at least in its earliest stages) is also astonishingly cheap. What must God think of us?

Another troubling feature of evolution by natural selection is that the weak, the young, the old are regularly crushed under the heel of evolutionary progress. This flies in the face of Judeo-Christian tradition that portrays the Lord as the champion of the downtrodden (e.g. Duet. 10: 18[72], Ps. 12:5[73], Ps. 35:10[74], Is. 25:4) who commands the believer care for those who are weak and vulnerable (e.g. Deut. 24:14, Duet. 24: 17-21, Duet. 27:19, Is. 1:17[75], Jer. 22:16, Zech. 7:10[76], James 1:27[77]). For example the Bible describes God as "a refuge for the poor, a refuge for the needy in their distress, a shelter form the storm and a shade from the heat."[78] This is not the picture of God that one would construct from an unbiased observation of the natural world. Nature programs are full of examples of the misfortune of the young, the weak and the old: wolves pick off a wizened old caribou; ants swarm over and devour a nest of fledgling sparrows and the gazelle with her injured leg is taken down by a ravenous pack of hyenas. This is the way of the natural world and it stands in stark contrast to Judeo-Christian moral values. We give special consideration to those

[72] "He defends the cause of the fatherless and the widow, and loves the foreigner residing among you, giving them food and clothing." (NIV)
[73] "Because the poor are plundered and the needy groan, I will now arise," says the LORD. "I will protect them from those who malign them." (NIV)
[74] "Who is like you, LORD? You rescue the poor from those too strong for them, the poor and needy from those who rob them." (NIV)
[75] "Learn to do right; seek justice. Defend the oppressed. Take up the cause of the fatherless; plead the case of the widow." (NIV)
[76] "Do not oppress the widow or the fatherless, the foreigner or the poor" (NIV)
[77] Religion that God our Father accepts as pure and faultless is this: to look after orphans and widows in their distress and to keep oneself from being polluted by the world." (NIV)
[78] Is. 25:4, "You have been a refuge for the poor, a refuge for the needy in their distress, a shelter from the storm and a shade from the heat. For the breath of the ruthless is like a storm driving against a wall." (NIV)

that are weaker and more vulnerable than ourselves (or, at least, we think we should); we build ramps for the handicapped; build special schools for the mentally challenged and spend extra time and energy caring for our elderly. The order of things in the natural world is not what we would expect given the purported moral nature of the Creator.

Compounding these problems is the fact that much of the waste of vulnerable life is accompanied by terrible pain and suffering. In chapter three I will argue that there is reason to believe that bony fish species and higher species are capable of experiencing conscious pain. Fossil evidence shows that bony fish evolved 420 million years ago.[79] The earliest reptiles emerged about 300 million years ago and about 60 million years ago mammals appeared.[80] During these millions of years, animals were subject to every kind of natural evil. The 19th century philosopher of religion, William James laments these eons of suffering and, in particular, he laments the evils of predation:

> To believe in the carnivorous reptiles of geologic times is hard for our imagination—they seem too much like mere museum specimens. Yet there is no tooth in any one of those museum-skulls that did not daily through long years of the foretime hold fast to the body struggling in despair of some fated living victim. Forms of horror just as dreadful to the victims, if on a smaller spatial scale, fill the world about us today. Here on our very hearths and in our gardens the infernal cat plays with the panting mouse, or holds the hot bird fluttering in her jaws. Crocodiles and rattlesnakes and pythons are at this moment vessels of life as real as we are; their loathsome existence fills every minute of every day that drags its length along; and whenever they or other wild beasts clutch their living prey, the deadly horror which an agitated melancholiac feels is the literally right reaction on the situation.[81]

The majority of the world's animal species serve as a food source for other animals. As a result most of the world's species spend their time being pursued and then devoured by other animals who have been "lavishly fitted out with instruments necessary for that purpose."[82]

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[79] John Roach, "Jaws, Teeth of Earliest Bony Fish Discovered," *National Geographic News*, http://news.nationalgeographic.com/news/2007/08/070801-jawed-fish.html, 2007.
[80] National Geographic Society, "Prehistoric Timeline," *National Geographic*, http://science.nationalgeographic.com/science/prehistoric-world/prehistoric-time-line, 2011.
[81] William James, *The Varieties of Religious Experience*, (Charlottesville, VA: University of Virginia Library Electronic Text Center, 2005), http: http://etext.virginia.edu/toc/modeng/public/JamVari.html, 160.
[82] J.S. Mill, *Three Essays on Religion: Nature, the Unity of Religion, Theism,* (New York: Prometheus Books, 1998).

Some try to downplay the severity of animal pain in the pre-Adamic millennia by supposing that death by predator is not nearly as painful as it might appear. Since I first encountered an anecdote of a lion attack in a biography of David Livingstone, I have seen it regularly repeated in theodicies for animal suffering. Livingstone reports that he experienced "no sense of pain nor feeling of terror" as a result of being violently shaken in the mouth of the lion. Livingstone later reflects that, "This peculiar state is probably produced in all animals killed by carnivore; and if so, is a merciful provision by our benevolent Creator for lessening the pain of death."[83] If it is true that the act of shaking prey before a kill produces a numbing effect, then this is a great mercy for those animals who are stunned by shaking before they are killed and eaten. However, not every predator uses this method on every kind of prey. For instance lions kill larger African ungulates, like zebra, hartebeest and water buffalo, by clamping onto the underside of their necks. The result is the collapse of the windpipe and death by suffocation.[84] Hyenas and wild dogs kill their prey by first, bringing the animal down through some superficial but incapacitating injury, then by ripping into the stomach leading to death by blood loss.[85] Deaths like these, though they are most likely very painful and terrifying, last less than ten minutes.

What those who use Livingstone's lion attack story to downplay the pain experienced by prey animals do not consider is the months of pain that Livingstone experienced in his shoulder and

[83] Martin Dugard, *Into Africa: The Epic Adventures of Stanley and Livingstone*, (New York: Random House, 2004): "Starting, and looking half round, I saw the lion just in the act of springing upon me. I was upon a little height; he caught my shoulder as he sprang, and we both came to the ground below together. Growling horribly close to my ear, he shook me as a terrier does a rat. The shock produced a stupor similar to that which seems to be felt by a mouse after the first shake of the cat. It caused a sort of dreaminess, in which there was no sense of pain nor feeling of terror, though I was quite conscious of all that was happening. It was like what patients partially under the influence of chloroform describe, who see all the operation, but feel not the knife. The singular condition was not the result of any mental process. The shake annihilated fear, and allowed no sense of horror in looking round at the beast. The peculiar state is probably produced in all animals killed by the carnivore; and if so is a merciful provision by our benevolent Creator for lessening the pain of death."

[84] Christopher McGowan, *The Raptor and the Lamb: Predators and Prey in the Living World*, (New York: Henry Holt and Company, 1997), 12-13.

[85] Ibid, 22.

arm after his escape from the lion. It is estimated that cheetahs and wild dogs fail to catch their prey 30% of the time while lions fail 70% of the time.[86] One can infer that some of the animals that do manage to escape (like Livingstone) do not do so unscathed. Paul Siple, an early Antarctic explorer and scientist notes that "one seldom finds a sleek silvery adult crab-eater [seal] that does not bear ugly scars—or two-foot long parallel slashes—on each side of its body, received when it managed to somehow wriggle out of the jaws of a killer whale that had seized it."[87] Animals that escape from predators may do so with torn flesh and broken bones from which they may or may not recover. These injuries are undoubtedly very painful.

Mammals who exist on the top of the food chain are not immune from a different form of predation—predation by parasite. In terms of numbers, half of the animals on earth are parasitic insects.[88] Some parasites exist without disrupting the lives of their hosts while others make the lives of their hosts rather miserable. Mites living in the coats of mammals can become so irritating that animals refuse to eat; other animals respond to these pests by rubbing off so much of their fur that they can die from the infected mange. Swarms of flies and mosquitoes have been known to whip herds of animals into such a frenzy that they trample their own young.[89] Stomach worms leave animals lethargic and can block the entrance to the stomach and esophagus causing the animal to starve to death. Understandably, this would cause quite a bit of suffering. It is astounding that God made half of his creatures in such a way so that they could only function by harassing, disfiguring or destroying the other half.[90]

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[86] G.B. Schaller, *The Serengeti Lion*, (Chicago: University of Chicago Press, 1972).
[87] Paul Siple, *Ninety Degrees South: The Story of the American South Pole Conquest,* (New York: G.P. Puntnam's Sons, 1959) quoted in Annie Dillard, *Pilgrim at Tinker Creek*, 240.
[88] Peter W. Price, *Evolutionary Biology of Parasites*, (Princeton, NJ: Princeton University Press, 1980), 8.
[89] George Fleming and Louis Georges Neumann, *A Treatise on the Parasites and Parasitic Diseases of the Domesticated Animals*, (Charleston, SC: Nabu Press, 2010), 45.
[90] Annie Dillard, *Pilgrim at Tinker Creek*, 232.

On orthodox theism God is an omniscient, omnipotent and omnibenevolent being who creates, sustains and oversees the universe. This means that God foresaw[91] and ordained all the forces and natural processes that are at work in our world.[92] If theism is true then evolutionary processes are God's chosen method of design and creation. This leaves theists with a lot of explaining to do. Why would an all-powerful God choose such a heinous method of creation? The thoughtful theist must provide some explanation or admit that the conjunction of theism and Darwinian evolution has explanatory holes. The existence of explanatory holes is not, in itself, a problem because many successful theories contain anomalous data, including evolutionary theory. Anomalous data only becomes a problem for the theory in question when a rival theory exists—a rival theory that is incompatible with the theory in question—with more explanatory power. In this case the hypothesis of indifference (HI) does a better job of explaining the facts at hand than classical theism (T). Because it seems that the facts at hand are a better fit with HI than they are with T, there is good reason to prefer the former over the later. There are several reasons why this is so:

First, as we saw above, there is the fact that the vast majority of living beings that come into existence do not flourish.[93] Most organisms do not reach adulthood and those that do may only flourish for a small portion of their lives. On theism this fact is extremely puzzling. Why would God purposefully create the vast majority of his creatures in such a way that they would never flourish? On theism, no *good* explanation is forthcoming, but on the hypothesis of indifference, there is a

[91] If the world operates according to metaphysically indeterministic processes then an omniscient God would still be able to foresee all possible outcomes of these indeterministic processes.

[92] Alvin Plantinga would deny that God intended the natural world to operate as it does. In his Supralapsarian Theodicy Plantinga argues that natural evil can be attributed to the free actions of demonic persons. See Alvin Plantinga, "Supralapsarianism or 'O Felix Culpa'" *Christian Faith and the Problem of Evil*, ed. Peter van Inwagen, (Cambridge: Eerdmans Publishing, 2004) 1-26.

[93] Paul Draper, "Darwin's Argument from Evil," ed. Yujin Nagasawa in *Scientific Approaches to the Philosophy of Religion*, (New York: Palgrave-Macmillan, 2012), 49-71.

compatible explanation. In order for evolution by natural selection to operate, there needs to be a large range of genetic options available to 'choose' from. If there is no genetic diversity, then there can be no genetic 'improvement' (where genetic improvement is defined by the increasing tendency of organisms to thrive in specific biological niches). In order for evolution to work it needs to kill off a vast number of unsuitable phenotypes so that it may select the unique and special few that carry the genes that will propel a species "forward." The fact that most organisms languish and die is not puzzling on HI, but on T evolutionary processes are entirely baffling.

Second, HI seems to do a better job of explaining the distribution of pain in the world than T. As I have argued, the world contains a lot of gratuitous pain and suffering that we would not expect if an all-good, all-powerful God created the universe. For example, we might expect that if a loving God created the universe he might have made a painless injury detection system. Given that such a system is possible and effective (as I will argue in chapter four), it seems that a good, all-powerful God would choose a painless system over a painful one. But if God created the world He didn't do this. The theist must suppose that God has some strong moral justification for allowing his creatures to suffer. But given the failure of theodicies for animal suffering, compelling divine reasons are not forthcoming. On HI, however, the question of why our injury detection system happens to be painful rather than painless is a simple matter: blind evolutionary processes have no moral compunction—evolution merely selects for any effective biological system and an injury detection system that operates through painful conscious experiences is just as effective as a painless injury detection system.

There are other puzzles about the distribution of pain in the world. We might wonder why God would make it so that painful sensations persist even when creatures face certain death. For instance, cancer patients suffer tremendously even when their continued pain serves no purpose.

We might wonder why God didn't design pain in such a way so that it might be 'turned off' when it is no longer beneficial for the sufferer. Richard Dawkins also wonders about this:

> It is easy to imagine a gene that, say tranquilizes gazelles when they are about to suffer a killing bite. Would such a gene be favored by natural selection? Not unless the act of tranquilizing the gazelle improved that gene's chances of being propagated into future generations. It is hard to see why this should be so, and we may therefore guess that gazelles suffer horrible pain and fear when they are pursued to the death—as most of them eventually are.[94]

If God had carefully supervised evolutionary processes, it is hard to see why God wouldn't have made it so that the gazelle would be tranquilized before its death. But on HI the reason why the deer trapped in the forest fire, the cancer patient and the gazelle in its death throes continue to suffer is clear—the alternative provides no (or negligible) reproductive advantage. A moral being would prefer to create the world in such a way so that suffering is minimized, but blind evolution processes do not bother with such things: "So long as DNA gets passed on, it does not matter who or what gets hurt in the process…Genes don't care about suffering, because they don't care about anything."[95] Therefore, the existence of gratuitous suffering of this type gives us further reason to believe that the natural world was not designed by the all-powerful, benevolent being of classical theism.

i. The Objection from the Inherent Goodness of Evolutionary Progress

Some argue that it is *intrinsically* good that our world has unfolded through natural evolutionary processes. Michael Murray argues that "we are not warranted in rejecting [his chaos-to-order defense] given our acceptances."[96] He argues that, contrary to the views of contemporary young-earth creationists, the belief in the intrinsic value of a system that unfolds according to

[94] Richard Dawkins, *River out of Eden*, (New York: Harper Collins, 2005), 131.
[95] Ibid, 131.
[96] Michael J. Murray, *Nature Red in Tooth and Claw: Theism and the Problem of Animal Suffering (*New York: Oxford University Press, 2008),192.

evolutionary principles has a notable place in Church history. For instance, the fourth century Archbishop, Saint Basil the Great endorses an evolutionary understanding of the creation. He writes:

> Like tops, which after the first impulse, continue their evolutions, turning themselves when once fixed in their center; thus nature, receiving the impulse of this first command, follows without interruption the course of the ages, until the consummation of all things.[97]

Saint Augustine endorses a similar view:

> …from the beginning of the ages, when day was made, the world is said to have been formed, and in its elements at the same time there were laid away the creatures that would later spring forth with the passage of time, plants and animals, each according to its kind.[98]

Although early theologians had no knowledge of Darwinian evolution, they still advanced the compatible view that God gave his creation everything it needed to unfold and become what He intended. These theologians praised a God who endowed his creation with everything it needed from the beginning. It was believed that this God was much greater than a god who continually intervenes, tinkering with his creation.[99] Michael Murray continues in this tradition arguing that a world that proceeds from chaos to order is a much better world than one that is initially complete. He writes: "…a universe which acts as a machine-making machine, producing substantial amounts of aesthetic, moral and religious value over time, is of greater value than creation of the finished project by divine fiat."[100]

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[97] St. Basil the Great, Archbishop of Caesarea, *Hexaemeron*, in *Nicene and Post-Nicene Fathers*, second series, vol. VIII, trans. Blomfield Jackson, Grand Rapids; Eerdmans Publishing Co., in Howard van Till, "Basil, Augustine, and the Doctrine of Creation's Functional Integrity," *Science and Christian Belief* 8, No. 1 (1996): 21-38.

[98] Augustine, *The Literal Meaning of Genesis*, trans. John Hammond Taylor, *Ancient Christian Writers: Vol. 41-42* (New York: Newman Press, 1981), in Howard van Till, "Basil, Augustine, and the Doctrine of Creation's Functional Integrity," *Science and Christian Belief* 1 (1996): 21-38.

[99] This is not to say that Basil and Augustine were deists. They believed that God could and did perform miracles but the primary purpose of these miracles were to make himself known through Jesus Christ and to establish his Church, not to correct the workings of the natural world.

[100] Michael J. Murray, *Nature Red in Tooth and Claw*, 184.

Although Murray's argument has the advantage of fitting nicely with theodicies designed for humans as it succeeds in explaining away pre-human suffering, it faces some major difficulties. First, one must think that a universe that progresses from chaos to order is valuable in itself. And second, even if a universe that proceeds in this fashion is very valuable, one must argue that this outweighs the cost of pain and death that natural selection inevitably brings to countless sentient beings. Both of these suppositions are questionable.

First, Murray tries to convince us that a universe which unfolds through natural evolutionary processes is valuable in itself. He tries to pump our intuitions about this by providing examples of things that we value because they progress from chaos to order. One example is the human embryo. Murray seems to think that processes that produce complexity from simplicity—like the process of a developing child—are intrinsically good. However, it is unclear that an organism that develops from simplicity to complexity is better than an organism that comes into existence fully formed. It is not obvious to me that the process of evolutionary advance is intrinsically valuable.

Another example Murray presents to pump our intuitions about the great-value of systems that produce design and order over time is the power loom. The power-loom was a machine that was designed to 'create design' rather than the older manual looms that had to be tended by hand. Murray quotes an, arguably sexist, 1885 sermon where the efficient machinery of evolution is compared to that of the power-loom.

> Well, that is a beautiful design, and these are skillful women that make it, there can be no question about that. But now behold the power-loom, where not simply a rug with long, drudging work by hand is being created, but where the machine is creating carpet in endless lengths…Now the question is this: Is it an evidence of design in these women that they turn out such work, and is it not evidence of a higher design in the man who turned out that machine…which could carry on this work a thousand-fold more magnificently than human fingers did.[101]

[101] H.W. Beecher, *Evolution and Religion* (New York: Fords, Howard and Hurlbert, 1885), 116 in Michael J. Murray, *Nature Red in Tooth and Claw,* 184.

There is an important disanalogy between the power looms and evolutionary processes: The evolutionary machine kills its workers! While one might agree that power-looms are very magnificent machines, one might want to know more about them before the looms themselves are called good. Are they safe? Do workers ever get crushed by the automatic mechanisms? If workers get maimed or killed by these machines, then the goodness of the machine is outweighed by other considerations. All things considered, this clever machine would actually be quite bad. A good foreman would never install such a device in her factory no matter how marvelous the machinery.

Only someone who overlooks the cost of such a mechanism as evolution by natural selection could say that evolution is an intrinsically good process. As we saw above, evolution proceeds by way of the suffering and death of countless creatures. Almost every high school student learns about Darwin's finches and the Galapagos draught of 1977. Researchers studying beak and body size of Galapagos finches had a rare opportunity to observe a micro-evolutionary event when the Islands were struck with a particularly severe draught. During the draught the small soft seeds and berries were quickly devoured leaving only the bigger, tougher seeds. Larger finches with short, strong beaks were able to break open these tough seeds while those finches with long slender beaks were unable to find food and perished. In following years, researchers noticed that there were many more of these large, short-beaked finches on the Island while the population of skinny beaked finches was much diminished. What is not emphasized in this biology-text-classic is that thousands of finches died of hunger—in this case, death by starvation is the handmaiden of evolutionary 'progress.' This does not seem like an intrinsically good process. As David Hull argues:

> What kind of God can one infer from the sort of phenomena epitomized by the species on Darwin's Galapagos Islands? The evolutionary process is rife with happenstance, contingency, incredible waste, death, pain and horror…Whatever the God implied by evolutionary theory and the data of natural

> selection may be like, he is not the Protestant God of waste not, want not…The God of the Galapagos is careless, wasteful, indifferent, almost diabolical…[102]

Annie Dillard observes the great cost evolutionary progress exacts on sentient creatures in her book, *Pilgrim at Tinker Creek*. She compares the design of evolution to the designs of an eccentric railroad executive:

> Say you are the manager of the Southern Railroad. You figure that you need three engines for a stretch of track between Lynchburg and Danville. It's a mighty steep grade… you have your shops make nine thousand engines. Each engine must be fashioned just so, every rivet and bolt secure, every wire twisted and wrapped, every needle on every indicator sensitive and accurate. You send all nine thousand of them out on the runs. Although there are engineers at the throttles, no one is manning the switches. The engines crash, collide, derail, jump, jam, burn…At the end of the massacre you have three engines, which is what the run could support in the first place…You go to the board of directors and show them what you've done. And what are they going to say? You know what they're going to say. They're going to say: It's a hell of a way to run a railroad. Is it a better way to run a universe?[103]

Murray's defense is astonishing given the fact that evolution, considered by itself, is probably one of the best defenses for there being no intelligence manning 'the railroad switch.' A world that is designed to bring about increasing order over time is a splendid feat of creative design, but the cost of such a plan is morally repugnant. Only a malicious genius would derive such a device for his ends. If God is to be defended as the great, benevolent being of classical theism, the theist must do better than this. Contrary to Murray, I have argued that we are justified in rejecting his chaos-to-order defense given our fairly uncontroversial moral acceptances.

[102] David L. Hull, "God of the Galapagos," *Nature* 352 (1992): 485-86 quoted in Christopher Southgate, *The Groaning of Creation: God, Evolution and the Problem of Evil* (London: Westminster John Knox Press), 2008, 7.
[103] Annie Dillard, *Pilgrim at Tinker Creek*, 177-78.

ii. ***The Objection from the Aesthetic Value and Freedom of Ecosystems***

> *Deep Ecology*[104] *is ecological, recognizing that life depends on life, that some suffering and pain is inherent in nature, that death is not evil; Animal Rights is compassionate, desiring to eliminate suffering and pain, and is, if taken to its logical extreme, anti-death. Deep Ecology is naturalistic, believing that nature knows best, going beyond good and evil to simply letting be; Animal Rights in its more extreme forms is anti-nature, arguing that although "primitive" peoples may have eaten meat, we as civilized humans have advanced to a point where we can change our animal natures and operate on an ethical basis, to even claiming that nature is not perfect, that windstorms, forest fires, and predation are bad because they cause suffering.*[105]
>
> --Dave Forman

Another objection to my argument that God is to blame for having produced a universe that is indifferent to the wellbeing of its creatures might be raised by J. Baird Callicott.[106] Callicott, following Aldo Leopold,[107] argues that the locus of value should be placed on the "integrity, stability and beauty of the biotic community," and not necessarily on the good of individual members of an eco-system.[108] Callicott explains:

> The land ethic manifestly does not accord equal moral worth to each and every member of the biotic community; the moral worth of individuals (including, n.b., human individuals) is relative, to be assessed in accordance with the particular relation of each to the collective entity which Leopold called 'land.'[109]

In his 1980 paper, "Animal Ethics: A Triangular Affair'," Callicott argues that the value of individuals is merely a function of their contribution to the wellness of an ecosystem.[110] So for instance, creatures that are vitally important to the functioning of an ecosystem, like honeybees, would be

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[104] Dave Forman is not a philosopher and is using the term 'deep ecology' loosely here. However, deep ecology and eco-centrism are not synonymous. Ecocentrism is a component of deep ecology but deep ecology is broader and might (depending on the deep ecologist) include metaphysical commitments to monism or panpsychism.
[105] Dave Forman, "Cat Tracks," *Earth First!* June 21, 1986: 21 in Christopher Manes, *Green Rage: Radical Environmentalism and the Unmaking of Civilization*, (Boston: Little, Brown and Company, 1990), 146.
[106] I would like to thank Matt Seacord for bringing this objection to my attention.
[107] Aldo Leopold, *A Sand County Almanac*, (New York: Oxford University Press, 1949).
[108] J. Baird Callicott, "Animal Liberation: A Triangular Affair," *Environmental Ethics* 2, no. 4 (1980) reprinted in *Environmental Ethics: Readings in Theory and Application*, ed. Louis P. Pojman, (Belmont, CA: Wadsworth Press, 2001): 51-61.
[109] J. Baird Callicott, "Animal Liberation: A Triangular Affair," 57.
[110] Later, Callicott softened his position in order to include consideration for individuals. Most eccocentrists are pluralists about the good and consider harms to both individuals and ecosystems.

entitled to *prima facie* preferential consideration over more psychologically complex species, like rabbits or humans that are plentiful and less important to the continued stability and integrity of an ecosystem. If God is an ecocentrist and the theoretical foundations of ecocentric ethics are sound, then my argument is flawed: God was not morally culpable when He created a world that is indifferent to the individuals that populate it. While it might be sad that many individuals suffer, if ecocentric holism is sound, then the basis of God's moral concern is rightly placed "on features of natural systems rather than on the individuals in them."[111]

If God values eco-systems over individuals one might want to know what it is that is valuable about healthy, flourishing eco-systems over and above the benefits that would accrue to individuals living in these ecosystems. First, the value that God places on ecosystems might be purely aesthetic. If this is the case then God is like a painter who considers the beauty of his artwork as his primary goal. Even though the painter might need to create patches of ugliness in the larger painting these small patches serve the larger purpose of creating a whole work of art that is exceptionally beautiful. Robert Audi makes this point when he speculates that perhaps "suffering can be seen as like a part of a beautiful painting that is itself ugly yet is essential in the beauty of the whole."[112] And for God, it might be that the beauty of the whole of creation is of the foremost importance.

Part of the beauty of natural systems is their wildness. Some environmental ethicists argue that wildness is more central to ecocentric ethics than the stability and integrity of natural systems. This is because wild, natural systems often undergo dramatic change and flux and such change and instability is part of the natural world. In contrast, natural systems that are closely monitored by

[111] Ned Hettinger and Bill Throop, "Refocusing Ecocentrism: De-emphasizing Stability and Defending Wildness," *Environmental Ethics*, Spring (1999) reprinted in *Environmental Ethics: Readings in Theory and Application*, ed. Louis P. Pojman, (Belmont, CA: Wadsworth Press 2001): 136-47.
[112] Robert Audi, *Rationality and Religious Commitment*, (New York: Oxford University Press, 2011), 232-33.

man can be very stable, but are tainted by human manipulation. For example, human engineers might intervene to prevent the natural erosion of beaches: By building breakwaters and other devices humans might succeed in preserving a stable, integrated and diverse ecosystem but at the cost of the system's wildness. Hettinger and Throop write, "Only an ecocentrism that puts its central focus on wildness value can prevent the unpalatable conclusion that such human manipulation of nature would, if successful, increase intrinsic value."[113] Therefore, Throop and Hettinger argue that the values of stability and integrity should take a back seat to the good of wildness.

Wildness also might be valuable in itself. So the second reason that flourishing ecosystems might be valued by God is because they are wild or untouched by persons, human or divine. As Hettinger and Throop define it wildness is the absence of humanization. And they argue that modern people[114] intuitively value things that are wild and natural. For instance, people would find the natural beauty of Old Faithful much diminished if they found out that the National Parks Service had to install pumps to keep the geyser operating regularly. Fishermen might find their "appreciation for catching cutthroat trout in an isolated and rugged mountain valley reduced by reports that the Department of Fish and Game stocked the stream the previous week."[115] There is great value, then, in letting natural systems remain free of the external influence of persons. Tampering in the natural order strongly detracts from the value of a natural system. So perhaps God was not only concerned with the aesthetic value of Creation but was also concerned with the wildness or freedom of the natural world which could best be realized by letting natural world

[113] Ned Hettinger and Bill Throop, "Refocusing Ecocentrism," 141.
[114] Hettinger and Throop argue that one of the reasons it is reasonable for modern humans to value wildness is that wilderness is becoming increasingly rare. In early periods of human history when "wilderness was ubiquitous and threatening" it might not have been reasonable to strongly value the wild. Therefore Hettinger and Throop argue that the value of wildness is context sensitive.
[115] Ned Hettinger and Bill Throop, "Refocusing Ecocentrism: De-emphasizing Stability and Defending Wildness," 140.

unfold unhampered and unconstrained by any checks on its wild natural 'impulses.' There is something magnificently beautiful about the untamed savagery of the predator that might be lost if predation was not part of our world. The graceful tiger leaping at its prey with unsheathed claws is an awe inspiring sight: It led William Blake to wonder "what immortal hand or eye dare frame [the tiger's] fearful symmetry?"[116] Annie Dillard marvels at the wild natural world where beauty flourishes on the same tangled vine where "the grotesques and horrors bloom."[117] She marvels at the beauty and ferocity of a shoal of sharks in feeding frenzy remarking that "the sight held awesome wonders; power and beauty, grace tangled in a rapture with violence."[118] There is something both magnificent and frightening about the predator that some find very valuable.

Because wildness is inherently valuable, we might surmise that God had good reason for letting the world evolve naturally. An all-powerful being could have intervened in our evolutionary history to keep predators and parasites from evolving, but presumably God chose not to because such interventions would detract from the wildness of natural systems and would thereby destroy their inherent beauty and value. An all-powerful being could also intervene in the natural world by rescuing fawns from forest fires and by saving lambs from lions. But such intervention comes at the cost a system's wildness.

But can the grace and beauty of the predator's attack be valuable when it is also so brutal—when it brings so much pain and suffering? Hettinger and Throop argue that wildness "is transformative in that it can combine with a property that has neutral or even negative value and turn the whole into a positive value."[119] When considered by itself, much of the bestial violence in

[116] William Blake, "The Tyger," *Songs of Innocence and Experience*.
[117] Annie Dillard, *Pilgrim at Tinker Creek*, 148.
[118] Ibid, 10.
[119] Ned Hettinger and Bill Throop, "Refocusing Ecocentrism: De-emphasizing Stability and Defending Wildness," 141.

the natural world is quite bad but according to Hettinger and Throop, the fact that the tiger's actions are natural to it transforms the negative value of its actions into something that is quite good. If God is an ecocentrist then the complexity, diversity and beauty of the creation would be of greater concern than some of the natural evils that might arise in such a system. Robert Audi seems to support this holist view of the good of creation when he writes:

> Who would paint while looking only at the tiny visible elements whose joint contribution underlies the final composition? Indeed, on a theocentric conception of the problem of evil, this larger perspective might be expectable, since the value of creating is partly constituted by that of the experience of the creative action or activity. God might wish to focus on the colors and textures and forms rather than on their microstructure, much as we focus on beautiful paintings as a whole rather than take a magnifying glass to their brush strokes.[120]

Therefore, in order to preserve the integrity of wild, natural systems, God might be willing to tolerate some natural evil.

While ethical systems that place value on the whole rather than on the individual may seem strange to those of us who are steeped in the modern ethical tradition of Bentham, Mill and Kant, Callicott argues that holistic ethics also occupies an estimable place in classical Western thought. Plato, in particular, argued for a similar form of collectivism in the *Republic*. Just as the health of the individual body is the ultimate aim of the functioning parts, Plato argues that the happiness and wellbeing of individual members of society is subordinate to the wellbeing of the city. For instance, the ruling class is required to take on the burdens of leadership, give up private property and family life in order to further the unity and happiness of the state. In the following passage Plato argues that the good of the whole is more important than the happiness of those who make up the ruling class (i.e. the guardians):

> Do you remember that, earlier in our discussion, someone—I forgot who—shocked us by saying that we hadn't made our guardians happy, that it was possible for them to have everything that belongs to the

[120] Robert Audi, *Rationality and Religious Commitment*, (New York: Oxford University Press, 2011), 241.

> citizens yet they had nothing? We said that…our concern at the time was to make our guardians true guardians and the city the happiest we could, rather than looking to any one group within it and molding it for happiness[121] (465e-466a).

Plato also suggests other drastic measures to ensure the wellbeing of the city. He requires infanticide for "children of inferior parents" and other children that are "born defective" (460c). He restricts "the practice of medicine to the dressing of wounds and the curing of seasonal maladies on the principle that the infirm and chronically ill not only lead miserable lives but contribute nothing to the good of the polity."[122] He curtails individual freedoms by recommending censorship and by controlling romantic relationships and mate selection. These measures clearly put the good of the whole ahead of the good of the individual. Callicott argues that if Plato's political and ethical recommendations are "properly an 'ethical' system, then so is the land ethic in relation to environmental virtue and excellence."[123]

How plausible is a holist ecocentric defense of God's design plan? There are a few problems with this approach. First, if the stability, integrity and beauty of ecosystems are of supreme value to the God of classical theism, then we have a new problem of evil—the problem of the failure of many eco-systems to thrive. We all know that ecosystems are being polluted, spoiled and destroyed at an astonishing rate. If God places such a high value on ecosystems we might wonder why God allows their destruction by both human and natural means (e.g. the Cretaceous-Paleogene Extinction Event). The second problem with this approach is that aesthetic values are given too high a place: Aesthetic value seems far less important than moral value. We might have a *pro tanto* obligation to promote aesthetic value but this obligation would be defeated when the wellbeing of individuals are at stake. We might expect the deity described by my hypothesis of

[121] Plato, *Republic*, in *Plato: Complete Works*, ed. John M. Cooper, (Indianapolis, IN: Hackett Publishing, 1997) 971-1223.
[122] J. Baird Callicott, "Animal Liberation: A Triangular Affair," 57.
[123] Ibid, 57.

indifference to place aesthetic value above moral value but not Yahweh, the deity of classical theism. Third it is questionable that ecosystems or biotic communities[124] have moral standing apart from the aggregate welfare of their constituents. While ecosystems can be harmed or benefited, the question is whether this harm or benefit is morally considerable. After all one can harm a laptop computer by dumping a soda over the keyboard but one hasn't wronged the computer. Healthy ecosystems are very important, but it seems that the reason why healthy ecosystems are important is that they benefit the individuals living in them (fish, frogs, squirrels, wolves and humans). Let us consider this last objection first…Consider the following case: There is a well-ordered, flourishing city where all the parts of the city are moving together in productive harmony, beautiful buildings are being constructed, public parks and gardens are maintained and there is relatively little crime, pollution or garbage in this city. This city, considered as a whole is a very beautiful, valuable city. However upon closer inspection we find out that the majority of those individuals that make up this city are exceedingly miserable. Most of those who make up this city, tend its gardens, and build its structures are slaves who live in fear of the harsh measures of their overlords. The reason there is so little crime and so much productivity is that the slave masters exact harsh penalties on the workers. Those who slack off or cause trouble are summarily executed. Because of the arduous labor, harsh penalties and lack of leisure activity, the populace is dispirited and depressed. Intuitively, it seems that the fact that the city is beautiful and prosperous is inconsequential given the misery and suffering of those that make up the city. Although this is a complicated ethical issue that is beyond the scope of this dissertation, at the very least many people have a strong intuition that the wellbeing of the city is far less important than the wellbeing

[124] I have been using the terms 'ecosystem' and 'biotic community' interchangeably; however, the word 'ecosystem' is broader in scope than the term 'biotic community'. For instance, ecosystems may consist of a succession of biotic communities that come and go over time.

of its citizens. It seems that it is to individuals that we owe moral duties and not to indifferent, non-conscious wholes that can experience neither pleasure nor pain. Gary Varner has argued that a more plausible form of ecocentric ethics focuses on the health of an ecosystem to the extent that the health of that ecosystem is beneficial to those creatures that depend upon it. He writes:

> Environmental holism can be either practical or ethical: it is one thing to say that one should take a holistic perspective on the land one manages; it is quite another to say that ecosystems or biotic communities themselves have intrinsic moral value or direct moral standing. Ethical holists attribute intrinsic moral value to ecosystems, or biotic communities, 'as such' rather than (or at least in addition to) their individual members, wereas practical holists hold only that it is necessary, in order effectively to manage environmental systems, to view them as complex systems that must be managed as wholes.[125]

Varner's practical environmental holism is ultimately reductive and does not focus on benefiting an entity irrespective of its parts. However, those that wish to show that ecosystems, as such, have moral standing, must show that ecosystems have interests or meet some other, yet unknown, criterion for moral standing.[126] Let us see how these attempts have panned out:

First, it seems pretty clear that ecological wholes do not have interests on a standard definition of interests. This is because ecosystems are not sentient. In addition, ecosystems don't have the right sort of unity that is indicative of unique organisms[127] because the proper parts of ecosystems are capable of independent existence (and potentially becoming parts of other ecosystems). Second, attempts to establish moral standing for ecosystems on some grounds other than interests have been unsuccessful. For instance, Callicott tries to base the moral standing of ecosystems on the fact that both ecosystems and organisms are autopoietic. He argues that because ecosystems are like organisms in that they have the capacity for self-renewal, self-

[125] Gary E. Varner, *In Nature's Interests?: Interests, Animal Rights, and Environmental Ethics*, (New York: Oxford University Press, 1998), 11.
[126] Ibid, 10.
[127] Kathrin Koslicki, *The Structure of Objects*, (New York: Oxford University Press, 2008).

organization and self-re-creation, ecosystems, also have moral standing.[128] However, autopoiesis is an inadequate criterion for the attribution of moral concern because there are clear cases where autopoietic systems have no inherent moral value. For instance, "growing sand heaps receive outside inputs (in the field, grains arrive wind-blown; in experiments with or models of self-organized criticality, grains are dropped slowly onto the peak)…."[129] Heaps of gravel, sand and grain are autopoietic systems that clearly do not have moral standing. Thus autopoiesis is not an adequate criterion for moral standing.

Another attempt to ground the moral considerably of ecosystems comes from Holmes Rolston. He argues that ecosystems have moral standing because they produce organisms that have moral standing. He writes:

> We confront a projective nature, one restlessly full of projects—stars, comets, planets, moons, and also rocks, crystals, rivers, canyons, seas. The life in which these astronomical and geological processes culminate is still more impressive, but it is of a piece with the whole projective system….The system is of value for its capacity to throw forward all the storied natural history. On that scale humans come late and it seems shortsighted and arrogant for such latecomers to say that system is only of instrumental value for humans.[130]

However, just because *A*, generates something else, *B*, that has intrinsic value does not mean that *A* also has intrinsic value. *A* might just have instrumental value because of its role in producing *B*. As is generally acknowledged in the literature, Rolston's criterion for moral standing fails.

A third attempt to ground the moral standing of ecosystems is in their aesthetic qualities. This is probably the most promising approach. One might say that we have a moral duty to refrain

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[128] J. Baird Callicott, "Aldo Leopold's Metaphor," *Ecosystem Health: New Goals for Environmental Management*, Robert Costanza, Bryan Norton, and Benjamin Haskell, eds. (Washington DC: Island Press, 1992), 52.
[129] Gary E. Varner, *In Nature's Interests?: Interests, Animal Rights, and Environmental Ethics, 18.*
[130] Holmes Ralston, *Environmental Ethics: Duties to and Values in the Natural World*, (Philadelphia: Temple University Press, 1988), 196-97; in Gary E. Varner, *In Nature's Interests?: Interests, Animal Rights, and Environmental Ethics,* 22.

from destroying beautiful things. One might say that destroying a beautiful tree or a piece of art is wrong because we are destroying something of great beauty.

Some might say that the problem with this criterion for moral standing is that it seems that our duty to not destroy the tree or painting is not a duty to the tree or painting itself, but rather to those beings who are capable of enjoying the tree or painting: It would be strange to say that we have moral duties to paintings. Some might argue that it would make more sense to say that our moral duties are to those who are capable of enjoying fine art whether that is to art critics, future museum goers, or to God himself. As the argument goes, the act of destroying an original Caravaggio is wrong because it deprives future museum goers (and perhaps other supernatural beings like angels) of aesthetic enjoyment. Ecological wholes are aesthetically valuable as well, but our obligation is to individuals who might appreciate the beauty of natural systems (or to those individuals who might appreciate ecological systems in some other, non-aesthetic way) and not to the natural system itself. But is this too quick? Why shouldn't we have obligations to beautiful non-sentient things? Many people have the intuition that it would be wrong to burn down Yosemite Valley even if you were the last sentient creature on earth. So we very well may have some moral obligation to promote or preserve aesthetic value. However, this brings us to my second objection—that aesthetic value should be subordinate to moral value—and I believe this objection is decisive against the aesthetic value defense.

While aesthetic qualities are valuable, it is questionable that the value of aesthetic enjoyment or beauty itself outweighs intense pain, suffering and death. Consider the following case: an artist creates a beautiful sculpture—a sculpture that is universally acknowledged to be as important and magnificent as Michelangelo's David. However, years later it comes to light that the sculpture was created from the pulverized bones of thousands of murdered children. In this case, it

doesn't seem that the good of the aesthetic value of the sculpture outweighs the great cost in lives needed for its construction. One would never say that it is all-things-considered good that this sculpture exists. All but the most depraved art snob would argue that the world is better off with the existence of this beautiful sculpture (and all the pain and suffering it took to produce) than without it.

An aesthetically motivated holist defense of God's design plan fails for the same reason the art snob's defense of the monstrous sculpture failed. Like the sculpture that is created from the bones of murdered children, God's creation is executed in much the same way—evolution by natural selection proceeds through the death and suffering of sentient beings.

As I have argued the whole is not something that deserves moral consideration apart from its morally considerable constituents, and a creator that sacrifices morally considerable individuals for a whole that is only derivatively valuable is a morally flawed creator. How bad this creator is depends upon what is sacrificed for what. The artist that murdered thousands of children for the sake of his art is much worse than Paul Gauguin who abandoned his family for the sake of his art. In God's case, the beauty of creation is very great but it doesn't seem that this beauty and the aesthetic pleasure that small minority of fairly sophisticated creatures, namely human creatures (and other supernatural creatures), derive from viewing the creation outweighs the suffering that it took to produce it. As I will argue in the next section, this is especially true when one considers that an all-powerful being might have created a world that is just as beautiful but with a lot less pain and suffering than in the actual world. A God who chooses aesthetic considerations over moral considerations, (like the wellbeing of sentient creatures) is a much better fit with my hypothesis of indifference than it is with classical theism. And therefore the ecocetric defense fails to exculpate the God of classical theism.

iii. Van Inwagen's Objection from Moral and Modal Skepticism

Peter van Inwagen attempts to dissolve the problem of animal suffering by sketching a set of parameters for a hypothetical story which is designed to convince us that "the argument from evil has not got the power to transform ideal (and hence neutral) agnostics into atheists."[131] He argues than he will have succeeded in defending theism against the problem of animal suffering if he can convince a neutral audience that the parameters of his story are a) true for all we know and b) if true would explain why God is morally justified in permitting animal suffering.[132] He writes, "I will tell a story that, I maintain, is true for all anyone knows" where God created the universe[133] and where the following three propositions are true:

1. Every world God could have made that contains higher-level sentient creatures either contains patterns of suffering morally equivalent to those of the actual world, or else is massively irregular.
2. Some important intrinsic or extrinsic good depends on the existence of higher-level sentient creatures; this good is of sufficient magnitude that it outweighs the patterns of suffering in the actual world.
3. Being massively irregular is a defect in a world, a defect at least as great as the defect of containing patters of suffering morally equivalent to those found in the actual world.[134]

According to Peter van Inwagen, for all we know, our world with its physical laws and processes including evolution driven by predation and its attendant suffering is the only metaphysically possible, non-irregular mechanism for the creation of valuable, higher-level sentient creatures like ourselves. If God wanted to bring about the existence of higher-level sentient creatures, God might not have been able to create these creatures differently that He did without also creating a massively irregular world. And for all we know massively irregularity could be a much greater defect than the defect of the suffering of sentient creatures. So, God can't be faulted for choosing

[131] Peter van Inwagen, *The Problem of Evil*, (New York: Oxford University Press, 2006), 50.
[132] Ibid.
[133] Van Inwagen acknowledges that if we have independent reasons—independent of the problem of animal suffering—for believing that God does not exist then we would have a decisive reason for rejecting his story.
[134] Peter van Inwagen, *The Problem of Evil*, 114.

regularity over irregularity in the design of the world and He can't be faulted for using evolutionary processes which are, for all we know, the only available means for bringing about the existence of human beings and other higher-level sentient creatures. Thus, if van Inwagen's story is true then God would have a perfectly good, morally sufficient reason for permitting animal suffering. However, van Inwagen's story seems highly implausible. In particular, I will argue that an audience of ideal agnostics should find propositions three and one in van Inwagen's story to be highly suspect. First, I would like to challenge van Inwagen's third claim that for all we know being massively irregular is a defect in a world as great as the defect of massive suffering. It seems that some of what counts as massive irregularity for van Inwagen would be morally preferable to the massive amounts of suffering in earth's evolutionary history. Second, I would like to challenge van Inwagen's first claim that for all we know it was not metaphysically possible for God to have created a world that has higher-level sentient creatures and that also has less suffering than the actual world. In response to van Inwagen's story I will sketch a story of my own. I will argue that (a) God could have created a world with a great variety of sentient creatures but without the ruthlessness of predation (b) that this world is morally preferable to the actual world (c) that one way for God to create this world would be to create all the animal species *ex nihilo*, and (d) that this word seems metaphysically possible.

As we have seen, van Inwagen claims that for all we know massive irregularity is a defect in a world as great as suffering. He defines a massively irregular world as one in which "the laws of nature fail in some massive way."[135] For van Inwagen, a massively irregular world is one in whcih: (i) the laws of nature are regularly interrupted by frequent and ubiquitous miracles (ii) the world

[135] Ibid.

"came into existence five minutes ago, complete with memories of an unreal past"[136] and (iii) "beasts (beasts having the physical structures of and exhibiting the pain behavior of actual beasts) felt no pain."[137] It is important to note that van Inwagen believes that "a physical universe containing all the miracles recorded in the Old and New Testaments would not, on that account be massively irregular…"[138] This includes the resurrection, the parting of the Red Sea and the astounding miracle in the book of Joshua where the sun stands still.[139]

Massively irregularity is supposed to be a defect in a world but van Inwagen never tells us why we are supposed to think that massively irregular worlds are bad. Presumably massively irregular worlds would be chaotic and unpredictable. And chaotic worlds would undermine freedom by making it impossible for creatures to predict the effects of their actions. But not all of the worlds that van Inwagen depicts as being massively irregular would be chaotic. For instance it seems that God could have created an alternate world that has no predation. Although in this world animal species could not develop as they have in the actual world—through evolution by natural selection—God could have created "every species by a separate miracle."[140] In this world irregularity would be limited to the initial creation event or events and then the world would operate subsequently according to regular natural laws. This type of irregularity seems much more benign than a world where God is constantly intervening disrupting the freedom of his creatures by doing something like the following:

> …fawns are (like Shadrach, Meshach, and Abednego) saved by angels when they are in danger of being burnt alive. Harmful parasites and mirco-organisms suffer immediate supernatural dissolution if they

[136] Ibid, 115
[137] Ibid.
[138] Ibid, 114.
[139] Although van Inwagen writes that ALL the miracles recorded in the Old and New Testaments wouldn't make a world massively irregular, van Inwagen might have a principled, exegetical way for separating historical miracles accounts from pseudepigraphal accounts.
[140] Peter van Inwagen, *The Problem of Evil*, 114.

> enter a higher animal's body. Lambs are miraculously hidden from lions and the lions are compensated for the resulting restriction on their diets by physically impossible falls of high-protein manna.[141]

In the former case, God's miraculous intervention in nature would be limited to an initial creation event. Why should we think that the creation of each species *ex nihilo* counts as a defect in a world? Perhaps it is because the laws of nature are broken. But as we saw above van Inwagen admits that the miracles of the Old and New Testaments including the astounding miracle recorded in Joshua 10:10 (where "the sun stopped in the middle of the sky and delayed going down about a full day"[142]) do not make a world massively irregular. So the mere fact that God miraculously intervenes from time to time does not count as a defect in a world for van Inwagen. Is it then, that such a world would be deceptive? Is it that in such as world it would seem as if separate species of animals evolved naturally when in fact they had been brought into being by divine fiat? But I don't see why a world where God's intervention is limited to an initial creation event would have to be deceptive. The fossil record could reflect that God created each species by divine fiat. And even if God did make it appear that animals evolved when in fact they did not, this does not seem to be a defect on par with the kind of massive deception the creation of a world that is only five minutes old would be. In fact, there are many deceptive aspects of the actual world that are not defects in our world (e.g. the world appears to be flat, the stars and our sun seem to be different kinds of bodies, insects and single-celled organisms behave as if they are in pain when they are not). In my account I suggest that one possible way God could have done things better is to have created each species by divine fiat instead of using evolution by natural selection. Why should the creation of each species by divine fiat be considered a defect in a world? In fact, a world where God created in such a way doesn't seem bad at all. So contrary to van Inwagen, I believe an audience of ideal

[141] Ibid, 115.
[142] Joshua 10:10, *New International Version*.

agnostics would find the massive amounts of animal suffering that we have in the actual world a far greater defect in a world than a miraculous creation event in the distant past.

Van Inwagen would object that a world where God brings about every species by a separate miracle might, for all we know, not be metaphysically possible. This brings me to my second objection to van Inwagen's story: it doesn't seem plausible that the only regular worlds that God could have created would have patterns of suffering similar to those in the actual world. Contrary to van Inwagen, one can conceive of a metaphysically possible, regular world with much less suffering than the actual world. My imagined world would be just like ours in every respect (e.g. the laws of physics would be the same) except that higher-level sentient creatures would not prey on other higher-level sentient creatures. In this world, birds and fish may go on eating non-sentient insects; whales may go on eating plankton and toads may go on eating flies, but "the wolf and the lamb will feed together and the lion will eat straw like the ox."[143]

Some might object that in my imagined world overpopulation might be a greater defect than predation. This is because overpopulation often causes long, slow deaths from starvation. However, in my story God might have easily addressed this problem by creating less fertile creatures. Others might object that in a world with no carnivorous scavengers, animal corpses would litter the earth bringing disease and death to those creatures we wanted so much to protect. But in my world creatures would be less fertile so there will be far fewer dead creatures left to decay. In addition, even if there are no carnivores or small scavengers (like rats and ravens) the actual world already has insects and micro-organisms that help break down animal remains. One creature in particular that would have a noble place in our kinder, gentler world is the maggot. Maggots are remarkable creatures in that they only will eat dead flesh. Unlike other 'scavengers'

[143] Isaiah 65:25, *New International Version*.

who might begin to consume an animal before its death, maggots do not harm living animals. Even if maggots happened to get in a living animal's wound, they actually help the creature by eating away dead skin and by secreting an enzyme that has antimicrobial properties.[144]

Another possible objection is that in my imagined world there could be no lions, tigers or bears. This is presumably because there is something essential to the identity of a lion, tiger or bears that includes its predatory biological make-up—large incisors, retractable claws, strong stomach acids, and a relatively short intestinal tract. It might just be metaphysically necessary (*a la* Kripke) that tigers are predators and thus impossible to create as non-predatory tigers. However, this objection misses the point as my world might still have beautiful cat-like creatures that bounce and bound for joy and then feast on fruit and grass. In my alternate world 'tigers' with a different biological make-up that are more like Winnie-the-Pooh's Tigger would exist rather than the tigers we have in the actual world. These $tigers_2$ would have no need for their long claws, sharp teeth or short intestinal tracts.

Another objection to my story would be that the evolution of sentient beings would be impossible without a wide selection of individuals subjected to intense environmental pressures. However, it seems entirely possible that an omnipotent God could have created sentient creatures without the process of evolution: after all, this is what the Church has held for most of its history. God could have brought each species into being by divine fiat instead of using the long, messy process of evolution to create higher-level sentient creatures, after all God is said to have brought the entire universe into being out of nothing. If the creation of time and space *ex nihilo* is possible for God, then it is certainly possible for God to create sentient, higher-level creatures from nothing.

[144] Kosta Y. Mumcuoglu et. al., "Maggot Therapy for the Treatment of Intractable Wounds," *International Journal of Dermatology* 38 (2001): 623-627.

However, van Inwagen might reply that for all we know such a world is not metaphysically possible. Van Inwagen argues that this is because our modal intuitions can only be trusted when they are applied in simple, everyday matters, but when our modal intuitions are applied in matters that are far-removed from the practicalities of everyday life then we should be suspicious of them. Van Inwagen writes:

> …our modal intuitions, while they are no doubt to be trusted when they tell us that the table could have been placed on the other side of the room, are not to be trusted on such matters as whether there could be a 'regular' universe in which there were higher sentient creatures that did not suffer…. why should we assume that God or evolution or social training has given us access to modal facts knowledge of which is of no interest to anyone but the metaphysician? God or evolution has provided us with a capacity of making judgments about size and distance by eye that is very useful in hunting mammoths and driving cars, but which is of no use at all in astronomy. It seems that an analogous restriction applies to our capacity for making modal judgments.[145]

According to Van Inwagen, there is no reason to think that humans have been given the mental capacity to modalize about complex, abstract matters. Just as our eyesight is not designed for gauging the distance of remote galaxies, our modal abilities do not extend beyond our everyday modal intuitions (e.g. the coffee wouldn't have spilled if the cup wasn't so full, etc.). Because "our universe is…our only model of how a universe might be designed"[146] and we know so little about what physical parameters must be in place to make life possible, one cannot assert with confidence that one can coherently conceive of another world with less suffering. Van Inwagen argues that we are just not constituted in a way that would allow us to know if we could coherently conceive of another, better 'earth'.

I will acknowledge that the modal intuitions involved in conceiving of another metaphysically possible world are very complex and it is because of this that my happier animal world isn't designed from scratch. Because I know that ***I*** am not able to design a world from scratch

[145] Peter van Inwagen, *The Problem of Evil*, 122.
[146] Ibid, 114.

(physicists or geologists might be able to do so), I stipulate that my Happier Animal World is just like ours---the size of the earth, the position of the earth in the cosmos, the molten core, the speed of light and sound, the period table of elements are all the same in my Happier Animal World as in the actual world. I only introduce a few differences like the creation of every species of sentient animal *ex nihilo* instead of the creation of sentient species through evolution by natural selection. I gave reasons for thinking that my alterations to our world to make my happier animal world are metaphysically possible. Suppose that he skeptic still isn't convinced. Suppose the skeptic persists in arguing that for all we know the small changes I've made in the actual world to create happier animal world are not metaphysically possible. I have two responses to the recalcitrant skeptic: First, humans are close to being able to actualize a world very much like my happier animal world. We could round up all the lions, tigers and bears and put them in zoos and animal parks where we would feed them 3-D printed meat (I am told by people who know about these things that this sort of innovation is just around the corner).[147] Next we could scatter birth control food pellets for the deer and rabbits in order to control populations—I am told that something like this has been done with the pigeon seed in Venice. Now, if we can imagine how we could create a world with less suffering in the *actual* world, it seems as if God certainly could do so.

The second thing one might say to the persistent skeptic, is that God is supposed to be omnipotent. But if commonsense intuitions about what an all-powerful God could do, count for nothing then it seems as if omnipotence is emptied of its meaning.[148] So when theists, like van Inwagen argue that God is omnipotent one might want to know this means for them. What property are they attributing to God? Further how do modal skeptics know that omnipotence is a

[147] I thank Rebecca Chan for this suggestion.
[148] I thank Wes Morriston for this comment.

metaphysically possible property? Skepticism is a double-edged sword and there is heavy cost to maintaining such pervasive skepticism about what an omnipotent being could do.

Finally, given that the outline of my story is a coherent description of a possible world that has less suffering than our own, I will leave this matter to the audience of ideal agnostics. It seems that my description of world—a world without blood dripping from every tooth and claw—although it is fragmentary, is metaphysically possible. My happier animal world describes one possible way that an all-powerful, morally perfect being (if He exists) could and should have done things better.

iv. Conclusion

In this chapter I have presented a case for the hypothesis that the God of classical theism did not providentially oversee the creation of earth's creatures. I argued that the evidence gathered from the observation of natural evolutionary processes that includes the intentional creation of predator and parasite, the waste of valuable beings and the existence of gratuitous pain and suffering make it unlikely that the Judeo-Christian God is responsible for the creation of life on earth. It is many times more likely that an aesthetically motivated, yet morally indifferent deity created the universe (per HI) than the omniscient, omnipotent, omni-benevolent God of classical theism (T).

I then considered three objections to this position. The first objection came from Michael Murray who argues that the existence of a system that proceeds from chaos to order is such a great intrinsic good that the creation of such a system justifies all the pain and suffering that such a system causes. In response, I argued that Murray's defense is highly implausible and morally counter-intuitive. The second objection I considered might be imagined to come from the ecological holist. Ethical ecological holists argue that the value of the biotic whole supersedes the

value of those individuals that make up the whole. If this is the proper moral perspective then God is not at fault for creating a system that does not favor the needs of individuals. Instead, I argue that ecological systems are not the proper objects of moral concern—they do not have moral standing, as such. Although natural systems often have aesthetic value, aesthetic value does not outweigh the interests of individuals. Aesthetic value might make it morally justifiable for a fire-chief to risk the injury of his firefighters in order to rescue paintings from a burning museum, but aesthetic value does not justify the suffering and premature deaths of millions upon millions of sentient beings. This is especially true when it seems that an all-powerful God could have created the world without the use of evolutionary processes. The third objection that I considered came from Peter van Inwagen. He argues that we are not justified in believing that God had it in his power to create the world with any less (or less morally serious) suffering than he actually did without also creating a world with massive irregularity. I argued that van Inwagen's modal skepticism is misplaced. I sketched an alternate story—an alternate way that God could have created the world that is both metaphysically possible and morally better than the actual world. Therefore, it seems that an all-powerful God could have created a world much like ours without evolutionary processes and without other natural evils like predation.

Chapter Three:

The Neo-Cartesians

There are barbarians who seize this dog…and nail him down to a table and dissect him alive, to show you the mesaraic veins! You discover in him all the same organs of feeling as in yourself. Answer me, mechanist, has nature arranged all the springs of feeling in this animal to the end that he might not feel.[149]
--Voltaire

One possible response to the problem of animal pain is simply to deny that animals are capable of suffering. The doctrine of the *bête-machine* gained popularity with mechanist philosophers in the 17th and 18th centuries and continues to hold sway with some non-dualist, contemporary philosophers.[150]

One might confront skepticism about animal sentience by arguing that knowledge of the existence of other minds, animal minds included, is an item of common sense. John Searle explains:

> I do not infer that my dog is conscious, any more than, when I came into this room, I inferred that the people present are conscious. I simply respond to them as is appropriate to conscious beings…It doesn't matter really how I know whether my dog is conscious, or even whether or not I do 'know' he is conscious. The fact is, he is conscious and epistemology in this area has to start with this fact."[151]

Searle may be right about this; there are few who would deny that at least some animals are conscious beings who feel pleasure and pain. However, an appeal to common sense will do little to convince the skeptic. In fact Peter Carruthers comments that, "It really is something of a scandal that people's intuitions in this domain are given any weight at all."[152] After all, many of our

[149] Voltaire, *Dictionnaire Philosophique*, 1764, in Peter Singer, *Animal Liberation* (New York: Harper Collins, 2002), 202.
[150] Peter Carruthers, Daniel Dennett, Peter Harrison, Michael Murray and Glen Ross
[151] John Searle, "Animal Minds," *Midwest Studies in Philosophy* 19, no. 1 (1994): 206-219.
[152] Peter Carruthers, *Phenomenal Consciousness: A Naturalistic Theory*, (New York: Cambridge University Press, 1999), 199.

common sense beliefs have been undermined by new scientific discoveries. It is indeed possible that our intuitions about animal consciousness will need revising in light of future findings. The 'neo-Cartesians' I discuss in this chapter believe (or in the case of Michael Murray that there is no reason to disbelieve) that the way animals receive sensory information about their pain states makes these states morally neutral. After all if it is the hurtfulness of a pain state that makes it a subject of moral concern, then according to the neo-Cartesian, those who do not suffer should not be subjects of our moral sympathy.[153]

There are a variety of neo-Cartesian positions. In this chapter, I will evaluate and reject three of the most prominent. First, I will evaluate C.S Lewis and Peter Harrison's 'No-Self' view. On the No Self view, animals do not suffer because animals are constituted in such a way so that their pains are only momentary. According to Lewis and Harrison, suffering only occurs (a) when a subject experiences pain that lasts for an extended time or (b) when a subject can later remember the painful experience. On the no-Self view, animals can't meet criteria (a) or (b) because they do not have a persisting self. The second neo-Cartesian position that I will evaluate and reject is the higher-order theory of consciousness. Some philosophers, like Peter Carruthers and Daniel Dennet argue that the correct theory of consciousness (i.e. the higher-order theory) has the implication that animals and other mentally unsophisticated humans do not have conscious experiences. On this view animals lack higher-order thoughts (about their first-order experiences) and because animals cannot think about their experiences, they are oblivious of them and thus do not suffer. Last, I will evaluate and reject Michael Murray's neo-Cartesian defense. Although he does not

[153] The ability of a creature to experience pain is merely a sufficient condition for its being a subject of moral concern. Ruling out a creatures' ability to feel pain is not sufficient for dismissing it from the sphere of those beings deserving of moral consideration. For example, one could make the case that even if animals do not experience conscious pain, pain is often a sign of a threat to an animal's wellbeing. And threats to the wellbeing of other creatures should be an area of moral concern. For more on this see Bernard E. Rollin, "Animal Pain: What It is and Why it Matters," *Journal of Ethics* 15 (2011): 425-437.

embrace the truth of neo-Cartesianism like Lewis, Harrison, Carruthers and Dennett, he argues that we do not know enough to reject it. He argues that for all we know, God made animals so that they cannot suffer and thus "our acceptances do not warrant the rejection"[154] of neo-Cartesianism.

1. The No-Self View

Peter Harrison and C.S. Lewis argue that animals do not have the continuity of experience to make 'painful' sensations morally relevant. They argue that animals are like Humean bundles that live moment to moment and lack a persisting self; because animals do not have a persisting self, they cannot experience sensations that last and therefore, they do not suffer. C.S. Lewis writes:

> Now it is almost certain that the nervous system of one of the higher animals presents it with successive sensations. It does not follow that it has any 'soul,' anything which recognizes itself as having had A, and now having B, and now marking how B glides away to make room for C. If it had no such 'soul,' what we call the experience ABC would never occur… This would mean that if you give such a creature two blows from a whip, there are, indeed, two pains: But there is no co-coordinating self which can recognize that 'I have had two pains'.[155]

Lewis argues that animals do not have a Self (or Soul) that is able to 'string together' its experiences. Because animals do not have an enduring Self, animals only experience a series of instantaneous, morally insignificant pains. Lewis writes, "Their nervous system delivers all the letters A, P, N, I, but since they cannot read they never built it up into the word, 'PAIN.'"[156] According to Lewis these pains are "so instantaneous (through the absence of succession) that its 'unvalue'… is indistinguishable from zero."[157] Even though Lewis admits that these temporary pains may be 'intense,' he writes, "I do not find anything in them that demands pity; they are, rather

[154] Michael Murray, 72.
[155] C.S. Lewis, *The Problem of Pain* (New York: Harper One, 1996) 135-6.
[156] Ibid, 133.
[157] C.E.M. Joad and C.S. Lewis, "The Pains of Animals," *The Month* 3, no. 2 (1950): 95-102, reprinted in *Animals and Christianity: A Book of Readings*, eds. Andrew Linzey and Tom Regan, (New York: Crossroad Publishing, 1988), 55-62.

comical."[158] So, because an animal does not have a Self that is able to unify its experiences across time, pain sensations are experienced as momentary and fleating and, therefore, are not morally serious.

Like Lewis, Peter Harrison argues that some creatures experience pains that are 'painful' at the time, but these pains are rendered morally neutral because there is not the right sort of conscious continuity between the animal's past and present self.[159] In order to illustrate how the lack of continuous, unified experience might keep pain sensations from being painful, Peter Harrison asks us to imagine a man who suffers from terrible nightmares. His wife observes his thrashing and moaning, but when he wakes in the morning, he has no memory of his nocturnal suffering. Harrison concludes that "there is no sense in which he feels that he has 'suffered' during the night, that he has felt fear or pain, for there is no conscious continuity between his waking self and his dreaming self."[160] Because the man has no memory of his nightmares when he is awake, he is "unable to say 'that happened to me.'"[161]

According to the advocate of the 'no-self' view, animal experiences are like the experiences of the dreaming self. Since animals lack continuity of consciousness their 'awareness' is just like "a succession of dream states."[162] In the case of the dreamer, one is unable to attribute these past, unpleasant experiences to oneself and, therefore, this makes the 'pain' of the dreamer morally unimportant. It is this inability to attribute past experiences to one's present self (for Harrison) and the inability to attribute past experiences to a Self/Soul (for Lewis) that make such experiences morally irrelevant. Harrison's formal argument is as follows:

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[158] Ibid, 61.
[159] Harrison is unclear about whether animals, infants and amnesiacs literally have different selves at every moment or have the same Self but without the memories necessary for continuity of consciousness.
[160] Peter Harrison, "Theodicy and Animal Pain," *Philosophy* 64 (1989): 88-89.
[161] Ibid, 90.
[162] Ibid, 89.

1) Continuity of experience is the crucial aspect of the human awareness of pain.
2) Animals lack that continuity of experience.
3) Therefore, animals do not experience pain as we do.[163]

To begin with, Harrison's conclusion does not follow from his premises. It only follows that animals lack "the crucial aspect of the human awareness of pain", not that "animals do not experience pain as we do": It is possible that an animal pain quale is qualitatively identical to a human pain quale even if animals lack "the crucial aspect of the human awareness of pain" (i.e. continuity of experience). For instance, a short-lived pain, like an electric shock experienced by a dog might be qualitatively and experientially indistinguishable from the same electric shock experienced by a human. Such a momentary pain seems like it would be a *prima facie* bad experience, even if one grants that animals do not have "continuity of experience". Harrison's own thought experiment demonstrates this. He asks us to imagine that a drug has been invented that can bring about memory loss. He continues:

> Let us suppose that doctors come to rely on amnesiasthetics to replace conventional anesthetics in surgery because their side-effects are nil. The operation of amnesiasthetics, we should bear in mind, is quite different from that of conventional anesthetics. The new drug seems only to paralyze the patient during surgery, and then wipe out all of his memories of the event. Whether the patient experiences any pain during the operation seems to be a moot point, for while there is no way for the patient to communicate his experiences during the course of the operation, upon recovery there is no recollection of what took place on the operating table.[164]

Harrison seems to think that there would be no moral problem in using amnesiasthetics instead of traditional anesthetics in painful operations. He writes:

> For the patient to 'own' the pain of surgery, again, some continuity must exist between the patient who is undergoing surgery, and the patient who is recovering from surgery…thus while the patient might grant that *pain was experienced* during the operation, he would not be inclined to say: *I experienced pain*."[165]

[163] Ibid, 91.
[164] Ibid, 89.
[165] Ibid, 89.

It is unclear whether Harrison believes that the patient who underwent the surgery is literally a different person from the person who is recovering from surgery or if the two are identical but lack the conscious continuity to make the pain of the surgery morally relevant. Either way, Harrison's example is deeply problematic: First, if the amnesiac is literally a different person from the person who underwent the surgery, this should make no moral difference. The fact still remains that some person suffered; whether that person is 'me' or not is not morally relevant in this case. Second, Harrison is also in trouble if he means that it is one's memory of a pain that makes the pain morally relevant. The amnesiac's inability to remember a past pain only lessens the amnesiac's present suffering; it can do nothing about the suffering that the amnesiac experienced during the procedure. While it might be better to forget about some of one's most painful experiences (this is probably why circumcision is practiced on infants and not adults), this does not show that the painful experience itself was not felt and that the painful experience was not bad.

The other problem with Lewis and Harrison's argument is that they make the bold empirical claim that animals do not have continuity of experience without considering evidence for their claim. There is a vast array of both anecdotal and experimental evidence that suggests that animals can experience events with duration (contrary to Lewis) and that animals have memories that 'connect' them with their past 'selves' (contrary to Harrison).

Contrary to Lewis, the preponderance of scientific evidence suggests that many animals have the ability to experience events with duration: First, there are plenty of anecdotal examples that support the idea that animals can experience events with duration. My cat Spike is an example: Spike enjoys being inside closed boxes. However, if Spike is in a closed box too long (like on a trip to the vet) he begins to cry and the longer he is in the box the louder and more mournful

his cries become. This seems to show that Spike has some awareness of the duration of the experience—he becomes more and more distressed the longer he remains in the box.

Further, experimental evidence seems to indicate that animals are able to experience events that are extended in time. For instance, 'peak procedure' experiments show that rats and pigeons can judge the duration of time. When animals are trained on a reinforcement schedule and come to expect a reward as a result of a certain behavior that is performed at certain time intervals, the animals will produce the behavior at the appropriate time in order to secure the reward: "This, so called peak procedure generally results in response-rate functions over time that peak at about the time that reinforcement is expected."[166] The author of the article concludes that "animals appear to be able to judge the passage of time."[167] At the very least experiments like the peak procedure tests show that the experience of some animals (like rats and pigeons) are not limited to an instantaneous present—they can judge time intervals that span an hour or two. Therefore some animals can be conscious of periods of time that are long enough for morally significant suffering on Lewis' standard.

Harrison, on the other hand, would be willing to grant that animals are capable of suffering for extended periods of time, yet he would deny that such suffering is morally meaningful. This is because Harrison believes that the only morally significant suffering is remembered suffering. As we saw above, this is absurd. The idea that a two-hour window of suffering (like the suffering experienced by the amnesiac) is morally unimportant is ridiculous. Although one need only defeat Harrison's moral premise (that the only morally meaningful suffering is remembered suffering) in order to defeat his argument, as it turns out, Harrison's factual premise (animals do not remember episodes of suffering from their pasts) is also false.

[166] Thomas R. Zentall, "Animals May not be Stuck in Time," *Learning and Motivation* 36 (2005): 208-225.
[167] Ibid, 210.

Recent research has challenged the assumption that animals are 'stuck in time'—that they cannot remember the past and anticipate the future.[168] In the last ten years there has been a spate of new research on the existence of 'episodic' memory in animals.[169] Episodic memory is what most of us think of when we use the word 'memory' and it is what Harrison believes is required for morally significant suffering. There is generally thought to be three different types of memory: procedural memory, semantic memory and episodic memory. [170] While procedural memory requires the recall of various skills and semantic memory requires the recall of certain facts, episodic memory requires 'mental time travel' or the ability to relive past events in the mind's eye. When an individual has an episodic memory, she is able to attribute past experiences to herself. For example, it is not enough to know that some seeds were cached under the tree (this is semantic memory), a being with episodic memory will recall that 'I cached the seeds under the tree' and will remember the event by picturing itself hiding the seeds under a particular tree.

If it can be shown that at least some animals have episodic memory, then this would show that Harrison is wrong. Animals with episodic memory would be able to remember events in their pasts as events that happened to them. This would show that these animals can remember past episodes of pain and would be capable of suffering on Harrison's strange criterion for morally relevant suffering.

Oddly enough, the best evidence that some animals have episodic memory does not come from experiments where animal memory is tested. This is because experiments designed to test

[168] C.R. Raby, et al., "Planning for the Future by Western Scrub-Jays," *Nature* 445 (2007): 919-921.
[169] Zhou, Wenyi and Jonathon D. Crystal. "Validation of a Rodent Model of Episodic Memory." *Animal Cognition* 14 (2011): 325-340; Clayton, N. S., J. Russell and A. Dickenson. "Are Animals Stuck in Time or Are they Chronesthetic Creatures." *Topics in Cognitive Science* 1 (2009): 59-71; Correia, Sergio P.C., Anthony Dickenson and Nicola S. Clayton. "Western Scrub-Jays Anticipate Future Needs Independently of Their Current Motivational State." *Current Biology* 17 (2007): 856-861; C.R. Raby et al., "Planning for the Future by Western Scrub-Jays," *Nature* 445 (2007): 919-921.
[170] Endel Tulving, *Elements of Episodic Memory*, (New York: Oxford University Press, 1983).

memory can't distinguish between the different types of memory on the basis of behavior. If a rat runs a maze more quickly its second or third time through, a scientist may wonder if the rat remembers the maze (e.g. it has episodic memories where it pictures itself running the maze previously) or if the rat has procedural or semantic memories that aid its maze-solving abilities. The problem with memory tests is that any behavior that seems to show the presence of episodic memory could also be explained by the presence of simpler memory capacities. Because episodic memory is inherently private, observed behavior tells us nothing about an animal's mental content. Therefore, the best evidence for the presence of episodic memory ironically comes from an animal ability to plan for the future. Evolutionary biologists have speculated about the reason parallel and seemingly redundant memory systems (e.g. semantic and episodic memory systems) would have evolved when the behaviors they produce are so similar—evolutionary biologists have wondered about what evolutionary advantage episodic memory would confer on creatures over and above semantic memory. A possible answer has come from the discovery that both episodic memory and "prospective memory" or future planning are processed in the same area of the brain.[171] From this discovery some scientists have drawn the conclusion that the behavioral advantage that the episodic memory system provides is not necessarily in remembering the past (semantic memory can accomplish this task) but in planning for the future. Clayton et al. explain:

> "…the function of episodic memory lies not with the benefits of remembering per se, but that its function is to support future planning, the ability to travel forwards in the mind's eye to imagine future events and scenarios."[172]

Clayton et al. speculate that creatures that are able to plan for the future may use the same area of the brain to remember the past though episodic memory.

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[171] D. L. Schacter, D.R. Addis and R. L. Buckner, "The Prospective Brain: Remembering the Past to Imagine the Future," *Nature Reviews Neuroscience* 8 (2007): 657-661.
[172] N.S. Clayton, et. al, "Are Animals Stuck in Time or Are the Chronesthetic Creatures?" 62.

In the last few years, various animal studies have been performed in order to determine if animals are genuinely able to plan for the future. In one important study Western Scrub Jays were taught that when they were housed in one compartment they received breakfast, but when they were housed in another compartment they did not receive breakfast. After they learned this pattern the birds were given the opportunity to cache seeds before sunset. On the very first trial the birds cached the seeds in only those compartments where they had not received breakfast. This study seems to indicate that the birds could anticipate their future needs and demonstrated this by caching the seeds where they knew they would be hungry in the future.[173] Other studies done with rats[174], mice[175], orangutans and chimpanzees[176] have shown similar abilities to anticipate the future. The link between prospective and episodic memory in the brain gives us reason to believe that those animals that demonstrate prospective ability will also have memories of their past that are episodic in nature.

In this section, I have argued that the first neo-Cartesian position, the no-Self view, is deeply flawed. First, I challenged the moral claims that a) intense but momentary pains are morally unimportant and b) pains that are forgotten are morally unimportant. Second, I challenged the empirical claim that animals don't have conscious experiences that persist through time and can't remember their past experiences. Given both anecdotal evidence and scientific evidence, there is good reason to believe that some non-human animals can have experiences that are extended in time and in addition, can remember these experiences later. Therefore, even given Lewis and

[173] Sergio P.C. Correia et al. "Western Scrub-Jays Anticipate Future Needs Independently of Their Current Motivational State," *Current Biology* 17 (2007): 856-861.
[174] S. J. Babb and J. D. Crystal, "Episodic-like Memory in the Rat," *Current Biology* 16 (2006): 1317-1321; Zhou, Wenyi and Jonathon D. Crystal. "Validation of a Rodent Model of Episodic Memory." *Animal Cognition* 14 (2011): 325-340.
[175] E. Dere et. al, "Episodic-like Memory in Mice: Simultaneous Assessment of Object, Place and Temporal Order Memory," *Brain Research Protocols* 16 (2005): 10-19.
[176] M. Osvath and H. Osvath, "Chimpanzee and Orang-utan Forethought: Self-control and Pre-Experience in the Face of Future Tool Use," *Animal Cognition* 11 (2008): 661-674.

Harrison's problematic moral standards, contemporary scientific studies on animal memory suggests that animals would be capable of suffering.

2. Higher-Order Theories of Consciousness: The HOT and DHOT Views

Some advocates of higher-order theories of consciousness believe that the correct theory of consciousness together with empirical facts about animal intelligence, make it highly unlikely that animals are capable of having phenomenally conscious experiences. For the higher-order (HO) theorist, consciousness is a meta-psychological state: one becomes conscious of a given pain or sensation when one psychological state, namely, a higher-order mental state, takes another lower-order mental state as its object. According to the higher-order theorist, there is nothing special about mental properties that make them directly responsible for phenomenal consciousness. Instead, it is the right sort of representational relationship between mental states that is responsible for the qualitative feel of conscious experience. Peter Carruthers, in particular, has argued that although animals have many of the first-order mental states that humans do—they can respond successfully to their environment through evolutionarily perfected behavioral reflexes, action schemas and even simple conceptual thought and reasoning—but animals lack the appropriate higher-order representation of these first-order states that would allow them to enjoy conscious experience.[177] Contrary to Thomas Nagel there is nothing it is like to be these animals.[178] The 'experiences' of the bat, cat and bear are blank, dark, and empty.

Some higher-order views of consciousness, like the higher-order perception theory (HOP) or the higher-order experience theory (HOE), make it much easier for animals to qualify as conscious

[177] Peter Carruthers, *Phenomenal Consciousness: A Naturalistic Theory*, (New York: Cambridge University Press, 1999), 124-125.
[178] Thomas Nagel, "What is it like to be a Bat?" *The Philosophical Review* 83, no. 4 (1974): 435-450.

beings than other HO theories, like the higher-order thought theory of consciousness (HOT). HOT theory, in both is actualist (HOT) and dispositionalist (DHOT) varieties, has the most demanding criteria for consciousness among HO theories because the higher-order state in virtue of which a creature is said to have a phenomenally conscious experience is a relatively cognitively complex thought or belief state rather than a simpler perceptual or experience state.[179] Carruthers argues that both HOT and DHOT imply that animals don't have phenomenally conscious mental states. On HOT and DHOT theory a mental state is phenomenally conscious if for any mental state M, M actually causes (or on DHOT theory, is disposed to cause) "an activated belief (generally a non-conscious one) that I have M, and caus[es] it non-inferentially."[180] In other words, in order to have a phenomenally conscious mental state, one must have (or be disposed to have) the belief that 'I have M.' And in order to have the belief that 'I have M' 1) a creature must have the concept 'I'—the creature must know that the mental state belongs to it and not some other creature, 2) a creature must have the concept 'have' or the concept of 'having an experience', 'a perception' or 'a seeming', and 3) a creature must be able to represent the contents of M, by a specific concept such as 'tree', 'green' or 'squirrel' or the indexical 'that thing.' When a creature fulfills all three criteria, the creature will have all the necessary components to have a higher-order thought of the form, 'I have M.'

Carruthers argues that animals aren't able to form the thought that 'I have M' because they don't have a 'theory of mind' that will allow them to conceive of themselves (criterion 1) as having experiences (criterion 2) in which their first order concepts (criterion 3) are embedded. Carruthers explains:

[179] Carruthers would disagree with this assessment arguing that higher-order perceptual and experience states only seem like they require less cognitive complexity than thought or belief states. Other HO theorists disagree.
[180] Carruthers, *Phenomenal Consciousness*, 219, 227.

> HOTs require the possession by a creature with a 'theory of mind', within which its concepts of experience and thought will be embedded. Since there is vigorous debate about whether even chimpanzees possess a theory of mind which is sufficiently elaborate to contain a concept of experience as a subjective state of the perceiver, it seems most unlikely that dogs, cats or bats are capable of the requisite HOTs.[181]

According to Carruthers, those with a 'theory of mind' will have a mindreading faculty that will allow them to conceive of themselves as having an experience, perception or seeming in which their first order concepts will be embedded. For Carruthers the mindreading faculty plays the functional role of fulfilling criterion 1 and 2 (and perhaps 3) thereby transforming one's first-order mental states into second-order phenomenally conscious states.[182]

Because it is supposed to follow from both the actualist and dispositonalist versions of HOT theory that animals are not conscious, we might ask why we should accept HOT as the correct account of consciousness. Why should the ability to think about pain be a necessary condition for the experience of pain? In other words, why should the capacity to think about one's mental states be essential in making these states conscious? This requirement for consciousness seems odd.

In addition, many philosophers have taken the result that the higher-order theories of consciousness rule out animal consciousness as a *reductio* for the position (e.g. Dretske, Kim, Seager, Searle). For instance, Jaegwon Kim writes:

> But how plausible is it to suppose that these animals have the cognitive capacity to form self-regarding thoughts of the sort required by the higher-order thought account of consciousness? In fact it isn't clear that we would want to attribute any intentional states, like beliefs and thoughts to such creatures. Would we for that reason deny consciousness to such animals? Don't infants not yet capable of self-referential thoughts experience pains when they have colic?...The higher-order thought account of consciousness

[181] Ibid, 194.

[182] These three criteria are necessary conditions for phenomenal consciousness and along with a few other criteria, (e.g. the HOT must be aimed at one's own mental state, the HOT must be non-inferential, the HOT must be aimed at a presently occurring mental state etc…) are jointly sufficient. Because there is no real debate over whether animals could achieve the other conditions necessary for conscious experience (i.e. it seems as if animals could easily achieve the other necessary conditions for consciousness if they could achieve criteria one through three), I will argue, as Carruthers does, that the possession of the above three necessary conditions for phenomenal consciousness would be excellent evidence that animals are phenomenally conscious.

> makes the capacity for intentional states—of a fairly sophisticated sort—a prerequisite for having conscious states, and that seems wrong.[183]

Fred Dretske also argues against the plausibility of higher-order theories of consciousness on the grounds that they exclude animals and young children from having conscious experience:

> There are, however, two objections to HOT theories that are, in my mind, decisive…children before the age of three years are unable to conceptually represent themselves as experiencing or believing things. It is hard to see, therefore, how, at this early age, they could have a higher-order thought of the requisite kind…If they are unable to hold higher-order beliefs about lower-order thoughts and experiences, are we to conclude, therefore, that none of their thoughts and experiences are conscious?...If that is a consequence of a HOT theory, it strikes me as very close to a *reductio* (it would be a *reductio* if we really knew—instead of merely having strong intuitions—that their experience was not fundamentally different.)…The same should be said about animals…when a dog scratches, are we to believe that the itch is not conscious, or that the dog's experience is totally different from ours, because the dog has no conceptual resources for thinking that it is an itch, that it is irritating, or whatever (on a HOT theory) one has to think about an experience to make it conscious?[184]

Most people share Dretske's and Kim's intuitions about animal consciousness. The idea that other animals, especially other mammals and young children, are not conscious would be greeted by open-mouthed astonishment by the man on the street. Because the belief that animals (and young children) are conscious is a widely-held, common sense view, those that deny animal consciousness on the basis of higher-order theories must meet a fairly substantial burden of proof in order to overturn this view. Unless a strong case can be made against this common sense position, we are not justified in believing that animals do not have felt experiences. Indeed, Carruthers presents some fairly convincing scientific data on the existence of non-conscious experiences that would seem to defy some of our folk intuitions about the nature of consciousness. Therefore, I will take a different approach in making my case against the neo-Cartesians of the higher-order variety: I will argue that even if HOT or DHOT is the correct theory of consciousness, animals will still qualify as conscious beings on these theories. This is because many animals probably do meet necessary

[183] Jaegwon Kim, *Philosophy of Mind*, (Boulder, CO: Westview Press, 1996), 166.
[184] Fred Detske, *Naturalizing the Mind*, (Cambridge: MA, MIT Press, 1995), 110-111.

conditions one through three listed above—and this should give us good reason to believe that at least some non-human animals, especially other mammals, can form higher-order thoughts. Carruthers' argument that animals do not have these capacities relies on an uncharitable and overly skeptical interpretation of the data on mindreading and metacognition in non-human animals and an implausible evolutionary story where humans, but not other animals, have evolved the necessary structures for phenomenally conscious experience.

i. Motivating the Plausibility of Non-Conscious Experience

In order to motivate the plausibility of his position, Carruthers points to the existence of a class of experiences paradoxically known as 'non-conscious experiences.' Contrary to our folk intuitions Carruthers argues that it is indeed possible for our lower-systems to be aware of what is going on around us, while our higher, conscious minds are unaware or unconscious of what our lower systems perceive.[185] Carruthers argues that animals experience the world non-consciously while humans have both conscious and non-conscious experiences. Three examples are typically offered to motivate the plausibility of Carruthers' position:

One common example of non-conscious perception is the experience we have all had of an automatic reflexive response to an injury. Suppose we accidently touch a hot pot handle on the stove. It often is the case that we quickly draw back before we become conscious of the pain sensations radiating from our burned hand. In this case the conscious feeling of pain lags slightly behind the non-conscious perception of pain. This happens because electrical impulses are transmitted by nociceptors at the burn site to the dorsal horn of the spinal cord. When the nociceptive signal reaches the dorsal horn it triggers a reflex response causing us to jerk our hand

[185] Carruthers, *Phenomenal Consciousness*, 199.

away from the hot object. Only later (up to two seconds depending on the type of tissue damage) when the signal reaches the brain do we experience the unpleasant sensation that we commonly associated with pain.[186] Some, like Carruthers, argue that unlike humans, animals only experience the non-conscious nociceptive response to noxious stimuli and do not experience conscious pain sensations.

The second example of non-conscious perception comes from the experience we have all had of driving on autopilot or of doing the dishes while engaged with other thoughts. Consider the following case:

> Suppose that Abbie is driving her car over a route she knows well, her conscious attention wholly abstracted from her surroundings…Suddenly she 'comes to', returning her attention to the task in hand with a startled realization that she has not the faintest idea what she has been doing or seeing for some minutes past. Yet there is a clear sense in which she must have been seeing, or she would have crashed the car. Her passenger sitting next to her may correctly report that she had seen a vehicle double-parked by the side of the road, for example, since she deftly steered the car around it. But she was not aware of seeing that obstacle, either at the time or in later memory.[187]

Because Abbie is able to avoid obstacles and navigate appropriately, we know that she is 'aware,' but in another important sense she is not aware. Her experience of driving on autopilot is a non-conscious one. Carruthers argues that there is no phenomenological quality to her experience of driving while in this state: she doesn't see (or more precisely, she isn't aware of) the double-parked cars, for instance. What Carruthers would have us learn from this example is that just because animals have sense organs and the ability to interact with their environment, does not mean that they are phenomenally conscious.[188] Instead, an animal's sense organs merely help it respond appropriately to its surroundings and do not necessarily mediate conscious experience.

[186] Valerie Gray Hardcastle, *The Myth of Pain*, (Cambridge, MA: MIT Press, 1999).
[187] Peter Carruthers, *The Animals Issue,* (New York: Cambridge University Press, 1992), 170.
[188] Ibid, 171.

While the automatic-driving example is an imperfect example of what Carruthers has in mind, (because it might be argued that Abbie is phenomenally conscious of her surroundings but not attending to her conscious experiences), it helps us get the idea. An example that would be more analogous comes from the phenomena of blindsight. In cases of blindsight, human patients with a damaged visual cortex are sometimes able to respond to visual stimuli without the subjective experience of sight.[189] Although patients suffering from blindsight report that they are unable to see objects in their visual field, they are still able to accurately identify shapes and are also able to "reach out and grasp objects of varying shapes and sizes, at various distances, with about 80-90 percent of normal accuracy."[190] In fact, these patients are able to catch a ball that is thrown to them with amazing precision, showing that these patients must receive visual stimuli. However, patients report that they cannot see the ball—they do not have the subjective, qualitative experience that we normally associate with sight.

Carruthers argues that all animals have 'experiences' that are analogous to the experiences of the distracted driver or the blindsight patient—their experiences are non-conscious. For instance, a hawk might receive sensory information that is indicative of 'seeing' a field mouse, but does not have the subjective experience of sight that we normally associate with seeing. Visual sensory information is received and processed, but the hawk does not experience the visual quale of a furry mouse scampering through the grass some hundred feet below. While only a few philosophers profess skepticism about the visual experiences of birds,[191] most would be skeptical about attributing phenomenal consciousness to jellyfish, earthworms or protozoa. Protozoa are likely examples of creatures whose experiences are non-conscious. They are able to respond to

[189] Peter Carruthers, "Brute Experience," *The Journal of Philosophy* 89 (1989): 258-269.
[190] Carruthers, *The Animals Issue*, 172.
[191] Norton Nelkin, "Pain and Pain Sensations," *The Journal of Philosophy* 83, No. 3 (1986): 132.

stimuli and act appropriately in order to navigate in their environment; however, there is good reason to think that such simple organisms are unable to have phenomenally conscious experiences.

The important question to be answered in this section, though, is not whether there are such things as non-conscious 'experiences' (because it seems as if there are) or if some very simple creatures like the earthworm, jellyfish or protozoon experience the world non-consciously (because they probably do); the important question is whether every non-human animal typically experiences the world non-consciously. This much stronger claim is what Carruthers argues follows from HOT theory.

ii. Phenomenal Consciousness on the Higher-Order Thought (HOT) Theory

It is important to remember that in the case of conscious perceptual states (as opposed to belief states) in both HOT and DHOT theories, the relation between higher and lower-order mental states is always non-inferential. For instance, when one becomes conscious of a pain, the awareness of the pain is immediate—there is no inferential or observational gap between the higher-order thought that one is in pain and the pain-state itself. One is not aware of the HOT itself unless one directs another thought, i.e. a third-order thought toward the second-order thought. If one directs a third-order thought toward a second-order thought, then one becomes introspectively aware of the thought. Normally we are not aware of our second-order thoughts. We (at least non-philosophers) spend most of our waking hours focused on the external world. Most are ordinarily aware of only what our HOTs mediate. This is because HOTs are normally the vehicles of awareness, not the subjects of awareness. Carruthers explains:

> When I consciously see that there is a dagger on the desk before me, the primary (often the only) focus of my attention is the dagger itself. In normal cases of conscious perception our experiences are, as it were, transparent—representing the world to us without themselves being objects of attention. It is, of course, possible to pay attention to one's conscious experiences, as when I attempt a phenomenological description of my visual field. But this is a sophisticated and relatively unusual thing to do.[192]

Therefore, animals and young children do not need to have the ability to introspect or reflect on their own experiences in order to have phenomenally conscious experiences. Although it may sound as if HOT theory would require animals like cows to actively contemplate their own thoughts as they graze, cows need not have this capacity in order to qualify as conscious beings on HOT theory. As we saw above, one is not typically aware of one's second-order thoughts when one is having conscious experiences. Higher-order thoughts merely put us in touch with our first-order mental states which convey the phenomenological qualities of the external world.[193] Therefore, introspection is not a necessary condition for conscious experience on HOT theory.

On HOT theory one must merely have the *ability* to have second-order thoughts about one's first-order mental states. According to Carruthers, non-conscious, lower-order mental states are made phenomenally conscious when they are 'consumed' by the mindreading faculty which is capable of producing higher-order thoughts about the contents of the lower-order mental states.[194] Carruthers explains that when the mindreading faculty receives as input "a visual representation of a man bending over, for example, it should be capable of forming the judgment, 'I am seeing a man bending over'" given that the person in question has the concepts of 'man' and 'bending over.' Carruthers continues:

> This is the way in which introspection of perceptual, imagistic, and somatosensory mental events is achieved, I suggest. Given that the mind-reading faculty possesses the concepts sight, hearing and so

[192] Carruthers, *The Animals Issue*, 179.
[193] If it was the case that one needed to be aware of a second-order thought in order to be aware of the first-order thought then HOT theory would be vulnerable to vicious regress objections. For this reason, HOT theorists are careful to point out that one's subjective experience terminates in a thought of which one is unaware.
[194] See figure 8.1 in Carruthers, *Phenomenal Consciousness*, 228.

> forth (together with a concept of self), it should be able to activate and deploy those concepts in the presence of the appropriate sort of perceptual input on a recognitional or quasi-recognitional basis.[195]

The mindreading faculty is therefore, a crucial element in creating higher-order thoughts that would render our experiences phenomenally conscious. Creatures that possess a mindreading faculty would be capable of having two out of three necessary conditions for conscious experience—they would be able to attribute their experiences (criterion 2) to themselves (criterion 1).

The third criterion for phenomenally conscious experience is the ability to apply the relevant concepts to one's experience. Carruthers argues that one would not be able to form the thought that 'I see a man bending over' if one did not have the concepts 'man' and 'bending over.' Instead, a creature with a mindreading faculty that lacked the concepts 'man' and 'bending over' might see something—the creature might have a phenomenally conscious experience—but would be unable to conceive of its visual representation as such. Carruthers explains the role that concepts play in perception:

> Perception presents us with a complex array of surfaces and filled spaces, even though we have no idea *what* we are perceiving, and/or have no concepts appropriate to what we perceive. Imagine a hunter-gatherer transported to some high-tech scientific laboratory, for example—she may have literally no idea what anything that she is seeing *is*; but for all that she will see the distribution of surfaces, shapes and masses; she will have a distinct idea which are distinct objects; which are liftable; and so on.[196]

So, strictly speaking, a person (or creature) may be able to have a phenomenally conscious experience of object, *O,* even if the person had no sophisticated concept for *O.*

Let us first examine whether some animals meet the third criterion for phenomenal consciousness (concepts) and then we will move on to explore whether animals have a mindreading faculty that would let them meet criteria one and two.

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[195] Peter Carruthers, "How we know our own Minds: The Relationship between Mindreading and Metacognition." *Behavioral and Brain Sciences* 32 (2009): 124.
[196] Carruthers, *Phenomenal Consciousness*, 10.

iii. Animal Concepts

Some philosophers have been skeptical about the ability of animals to have any thoughts at all because they assume that fine-grained linguistic representations are the only basis for conceptual representation.[197] For instance, skeptical philosophers point out that a common folk explanation for a dog's behavior (e.g. a dog runs around the base of a tree barking at a squirrel in a branch overhead) might be something like 'the dog believes the squirrel is in the tree' or 'the dog thinks the squirrel is in the tree.' However, the skeptical philosopher argues that it is a mistake to attribute thoughts to non-linguistic animals: the dog can't have the thought, 'the squirrel is in the tree' because having this thought requires the dog to entertain the proposition 'the squirrel is in the tree'. But in order to entertain this proposition the dog would have to have the concepts 'squirrel', 'in' and 'tree.' And it is doubtful that non-linguistic creatures are capable of having these concepts.[198]

However, as Colin Allen has pointed out, it doesn't follow from the fact that the dog lacks the standard *human* concept 'squirrel' that it doesn't have a concept of 'squirrel' at all.[199] In fact, it is doubtful that among humans that there is *the* concept 'squirrel.' Biologists and squirrel lovers will have a richer concept of 'squirrel' than the average person. A child might have a very rough understanding of the concept 'squirrel' –a child might not understand that a squirrel is a warm-blooded, mammal—but it doesn't follow that children have no concept of 'squirrel'. So if it turns out that the dog does have a concept of 'squirrel,' then its concept will differ in many ways from the

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[197] Eric Saidel, "Attributing Mental Representations to Animals," *The Philosophy of Animal Minds*, ed. Robert W. Lurz, (New York: Cambridge University Press, 2009), pp. 35-51; Colin Allen, "Animal Concepts Revisited: The Use of Self-Monitoring as an Empirical Approach," *Erkenntnis* 51 (1999): 33-40.

[198] Donald Davidson, "Thought and Talk," in S. Guttenplan ed., *Mind and Language*, (New York, Oxford University Press, 1975); Daniel C. Dennett, *Consciousness Explained*, (New York: Allen Lane 1991).

[199] Colin Allen, "Animal Concepts Revisited: The Use of Self-Monitoring as an Empirical Approach," *Erkenntnis* 51 (1999): 33-40.

typical human concept of 'squirrel.' For instance, the dog probably will not know many of the things humans typically do about squirrels, but a dog's concept of 'squirrel' might include some things the typical human concept of 'squirrel' lacks like the smell and, perhaps, the taste of squirrel. So if it turns out that the dog does have a course-grained concept, 'squirrel,' this concept might be joined with other course-grained concepts to form the basis of a propositional attitude that would qualify as a HOT.

The ability to sort the world according to difference seems like it could be the most basic conceptual capacity that could serve as the basis for higher-order thoughts. HOT theorist Rocco Gennaro argues that the minimal conceptual representation that would qualify as a HOT would be the indexical thought of *this* experience (thing or feeling) being different from *that* experience (thing or feeling). Gennaro explains:

> Some creatures will be able to conceptualize, and so be aware of their mental state *qua* their differences from other mental states. One might just be aware of a token-M as different from M', M'' and so on… We may not even be able to understand the more coarse-grained way in which some cognitively deficient creatures conceptualize the world and their inner states, let alone be able to capture it in our language. But all we require is that they do *in some way or other*.[200]

So at the very least, an animal has to have the universal concept 'different from' in order to know that "this is different from that."

According to research on categorization abilities in animals "it has been found that pigeons, parrots, rhesus monkeys, baboons and chimpanzees are capable of learning and applying the same/different concept across a wide variety of simultaneously presented visual elements."[201] In fact, pigeons are able to differentiate pictures of human faces (including novel human faces) from

[200] Rocco Gennaro, "Higher-Order Thoughts, Animal Consciousness, and Misrepresentation: A reply to Carruthers and Levine," Rocco J. Gennaro ed. *Higher-Order Theories of Consciousness,* (Philadelphia: John Benjamins Publishing Company, 2004), 62-63.
[201] Zhanna Reznikova, *Animal Intelligence: From Individual to Social Cognition*, (New York: Cambridge University Press, 2007), 152.

other objects indicating that pigeons have some general understanding of what makes a picture of a human face different from a picture of a dog or a chair.

In another experiment on concept formation in animals, psychologists John Pilley and Alliston Reid were able to teach a Border Collie named 'Chaser' a vocabulary of over one-thousand words. In this experiment Chaser demonstrated her proficiency in applying and categorizing various concepts by fetching toys by name from a room blocked from the view of researchers. In various double-blind procedures Chaser demonstrated an understanding of the difference between common nouns, proper nouns and verbal commands and was able to form categories represented by common nouns by "map[ing] one label onto many objects" and by "map[ing] up to three labels onto the same object without error."[202] Chaser's ability to identify objects shows that she is able to make fairly fine-grained visual and auditory discriminations between objects. For example, Chaser effectively responded to the command to get a toy named, 'Al.' In order to succeed in her task Chaser must have been able to recognize the visual qualities of that particular toy as distinct from the other toys in the group. In addition, she had to understand the auditory quality of the name 'Al' as distinct from the auditory qualities of the names of her other toys in order to succeed in her task. In another task, Chaser was able to consistently pick out circles showing that Chaser had the universal concept, 'circle,' as she was able to pick out circular disks of different sizes, colors and textures. These tests demonstrate that Chaser understands a variety of concepts and is able to apply these to her visual (and auditory) experiences. This experiment seems to show that dogs like

[202] Chaser could identify one her toys by three verbal identifiers: its proper name and certain common noun designators such as ball or frisbee. Chaser was also able to combine a verbal command with a proper name by producing "appropriate behaviors when three different commands (take, paw, and nose) were randomly combined with three different objects (Libs, ABC, Lamb) across 14 independent trials in a double-blind procedure." See John W. Pilley and Alliston K. Reid, "Border Collie Comprehends Object Names as Verbal Referents," *Behavior Processes* (2010).

Chaser have the ability to form fairly sophisticated concepts of the sort necessary for higher-order thoughts of the form 'I have M' or 'I see M' on HOT theory.

It seems that Carruthers would agree that many animals, even very many simple animals have concepts: In his paper "On Being Simple-Minded," he argues that even if humans don't know exactly how a given animal is conceiving of a given object, this does not mean that the animal does not have a concept of that thing. He writes:

> …we don't know how much the ape knows about termites, nor how exactly she conceptualizes them, but we do know that she believes *of* the termites in that mound that they are there, and we know that she wants to eat them. And on this matter common sense and cognitive science agree. Through careful experimentation scientists can map the boundaries of a creature's concepts, and can explore the extent of its knowledge of the things with which it deals. These discoveries can then be used to provide an external characterization of the creature's beliefs and goals, even if the concepts in question are so alien to us that we couldn't co-think them with the creature in the content of a that-clause.[203]

Carruthers would, therefore, have no problem attributing concepts to animals. However, for Carruthers, animal concepts are first-order mental states. They are non-conscious states that help an animal to successfully negotiate its surroundings. While Carruthers would admit that animals have one necessary condition for conscious experience (i.e. the possession of concepts) without the other necessary conditions for consciousness, animals cannot be conscious. In other words, if an animal is to have the conscious experience of the taste of termites, or the conscious experience of the sight of a squirrel, the animal would need to also have the capacities that come with the mindreading faculty—the ability to attribute experiences to oneself (i.e. criteria 1 and 2). And to this we turn next.

[203] Peter Carruthers, "On Being Simple Minded," *American Philosophical Quarterly* 41, no. 3, (2004): 205-220.

iv. The Mindreading Faculty

Carruthers argues that it is doubtful that animals have higher-order thoughts because many animals (with the possible exception of the great apes) are incapable of mindreading. Mindreading is the ability to attribute mental states such as thoughts, beliefs, intentions and desires to others. According to Carruthers, the mindreading faculty allows the possessor to both attribute mental states to others and to represent the contents of one's own mind. In other words, the mindreading faculty generates both the ability to know the minds of others and the ability to know our own minds. Interestingly, Carruthers denies that our "access to our own minds is…different in kind than our access to the minds of other people."[204] Therefore, for Carruthers, someone who is unaware of the mental states of others will also be unaware of their own mental states. Carruthers concludes that any subject, including young children and some autistic adults, that is unable to mindread will not have access to their own minds and will, therefore, lack phenomenal consciousness:

> Note that it is not only non-human animals, but also young children who will lack phenomenal consciousness…A similar point holds in connection with adult autistic people…Autism is increasingly thought of as a kind of mind-blindness. But if autistic subjects are blind to their own mental states, then that will mean they are incapable of self-directed HORs [--higher-order representations]; which in turn will mean that they lack phenomenally conscious mental states, if any form of HOR theory is correct.[205]

Carruthers' argument for the inability of animals to have thoughts about their own mental states is flawed in several ways. First, Carruthers argues as if there is near universal scientific consensus that animals lack mindreading capabilities.[206] The fact is that the scientific community is split on whether the empirical evidence to supports the hypothesis that some animals are mind readers.[207] Second,

[204] Carruthers, "How We Know our own Minds," 121.
[205] Carruthers, *Phenomenal Consciousness*, 202.
[206] Ibid, 194.
[207] Robert W. Lurz, *Mindreading Animals: The Debate over What Animals Know about Other Minds*, (Cambridge, MA: MIT Press, 2011).

Carruthers seems to take experimental evidence of the failure of certain animals to pass mindreading tests as evidence of their general inability to mindread. This interpretation of the empirical evidence is problematic, as we will see below. And third, Carruthers takes the inability to attribute mental states to others as evidence of an animal's inability to have phenomenally conscious mental states of its own. However, there is no good reason to believe that those who cannot form thoughts about the thoughts of *others* would be incapable of having thoughts about their *own* mental states.

Historically, most of the experimental evidence that has been available for the existence of thoughts about mental states (or HOTs) in animals comes from experiments where animals are encouraged to predict the thoughts of others.[208] There is an obvious reason why experiments are not designed to directly assess an animal's own thoughts: An experimenter can't ask non-language-using subjects about the contents of their mental states and there is no known method (or it is simply impossible) of extracting intentional content directly from the brain. There are three paradigmatic tests used to assess whether animals have a theory of mind: deceit tests, false-belief tests and competition tests. Results from these experiments seem to indicate that some animals are capable of forming thoughts about the thoughts of others. I will briefly review some of the experimental evidence for mindreading capacities in animals and discuss the implications of the results.

Some argue that the practice of deceit is proof of second-order mental states because one must be able to predict what sorts of behavior will illicit false beliefs in others. Therefore, those

[208] Exceptions are tests for animal metacognition, which we will discuss later and the discovery of F5 "mirror" neurons. F5 neurons fire when a subject (e.g. a monkey) is about to perform an intentional action, like grasping an object but these same neurons also fire when the subject is watching another perform the same intentional action. When the monkey watches another's actions, the watcher's brain mirrors the 'watchee's' intention to act. See Alvin Goldman, *Simulating Minds: The Philosophy, Psychology, and Neuroscience of Mindreading*, (Oxford: Oxford University Press, 2006).

who practice deceit will have thoughts about the thoughts of others. Instances of the use of deceit by animals have been extensively cataloged;[209] here is one example: American primatologist Emil Menzel observed the following instance of deception between chimps named, 'Belle' and 'Rocky' while he was conducting spatial memory experiments on captive chimpanzees:

> In the study, Menzel showed Belle the location of some hidden food in the 1-acre field where the chimpanzees lived and returned Belle to her group mates. The group was then released into the field. On every occasion of their release, Belle made a straight line for the hidden food. The alpha male of the group, Rocky, eventually caught on to this pattern of behavior and began to follow Belle to the hiding place of the food, where-upon he would quickly push her aside and consume all the food. On one occasion of the group's release, however, Belle unexpectedly went in the opposite direction from where she saw the food hidden. However, while Rocky was preoccupied with looking in the wrong place, Belle quickly doubled back and consumed the hidden food.[210]

Attempts to replicate Menzel's observation of deception among his chimpanzee subjects have been successfully repeated in other primates.[211] These instances of deception seem to indicate that primates like Belle are able to predict what behaviors might elicit false beliefs in conspecifics. Some scientists have drawn the conclusion that instances of deception among primates show that these animals are capable of having thoughts about the thoughts (specifically, false beliefs) of others.

Other experiment paradigms such as false-belief tests and competition paradigm tests seem to indicate that a variety of animals have mindreading capabilities. In one false-belief paradigm experiment bottlenose dolphins were able to discern when a human experimenter held a true or false belief about the location of fish. In the experiment the dolphins observed a baiter place a fish in one of two boxes that was hidden from view by a screen. The dolphins also observed a human (i.e. the communicator) watch the baiter place the fish in the boxes. The human, who was able to

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[209] R. Byrne and A. Whiten, "Tactical Deception in Primates: The 1990 Database," *Primate Report* 27 (1990): 1-101.
[210] Lurz, *Mindreading Animals*, 11.
[211] S. Hirata and T. Matsuzawa, "Tactics to Obtain a Hidden Food Item in Chimpanzee Pairs," *Animal Cognition* 4 (2001): 284-289; S. Coussi-Korbel, "Learning to Outwit a Competitor in Mangabeys," *Journal of Comparative Pscyhology* 108 (1994): 164-171.

observe where the fish were placed, then tapped the box that contained the fish. The dolphins were then given the opportunity to choose one of the two boxes. If they chose the correct box, the dolphin received the fish. The dolphins quickly learned that the box the communicator tapped contained the fish. In the false-belief portion of the test, the dolphins observed the baiter place the fish in the container while the communicator watched. Then when the communicator turned his back or left the area, the baiter then removed the screen and switched the position of the two boxes. When the communicator returned, he tapped the empty box. The experimenters predicted that the dolphins would form the belief that the communicator had an incorrect belief about the location of the fish and choose the box opposite to the one the communicator indicated *only if* the dolphins were capable of attributing beliefs to the communicator. The dolphins did just this on their first try and were able to choose the correct location of the fish on succeeding attempts where false belief and true belief tests (i.e. a portion of the test where the communicator returns to observe the baiter switch the box locations) were interspersed.[212]

Other positive results for the existence of mindreading in animals have come from competition paradigm experiments where one animal has to correctly interpret the intentions of a conspecific in order to beat it to a food source. These experiments have been successfully performed on scrub jays, ravens, bee-eater birds, goats and monkeys.[213]

While some scientists maintain that there is good reason to believe that some animals have mindreading capacities, the scientific community at large is split about how to interpret the data. However, even if animals fail certain mindreading tests this does not show that animals don't have thoughts about the thoughts of others and more importantly, this does not show that animals don't

[212] Alain Tschudin, "'Mindreading' Mammals: Attribution of Belief Task with Dolphins," *Animal Welfare* 10 (2001): 119-127; Alain Tschudin, "Belief Attribution Tasks with Dolphins: What Social Minds can Reveal about Rationality," in *Rational Animals*, eds. S. Hurley and M. Nudds, (Oxford: Oxford University Press, 2006), 413-436.
[213] Lurz, *Mindreading Animals*, 15.

have thoughts about their own thoughts/mental states. First, experiments designed to encourage animals to predict the beliefs of others, overlook the possibility that animals might have thoughts about the desires (or other attitudinal states) of others while being incapable of having thoughts about the *beliefs* of others. (In fact one popular skeptical interpretation of some mindreading experiments is that animals have beliefs about the perceptual experiences of other animals, but do not have thoughts about the beliefs of other animals.) If animals had thoughts about others' desires (or other mental states) this would show that they *are* capable of having HOTs.

Evidence from developmental psychology shows that children under the age of three often attribute desires to themselves and others, but rarely make belief attributions. In one study, developmental psychologists Karen Bartsch and Henry Welllman found that "an over-whelming use of desire verbs, often found in conjunction with no belief verbs at all, is characteristic before about two-and-a-half years of age. After that time, the amount of belief verb production increases…"[214] Bartsch and Wellman argue that children demonstrate genuine understanding of the concept of desire because they are able to contrast their desires with the desire of another (e.g. "'Do you want me to look both ways? I don't want to look both ways…'"[215]). The apparent purpose of the advanced development of desire psychology in young children is to "function in planning and practical reasoning that is independent of language, whereas the primary function of [belief psychology] is to enhance the child's ability as a conversationalist."[216] Therefore, if it is plausible that in early stages of development children are unable to attribute beliefs to others but can attribute desires, then it is also plausible that some non-human animals are able to attribute desires

[214] Karen Bartsch and Henry Wellman, *Children Talk about the Mind* (New York: Oxford University Press, 1995), 27. quoted in Michael Ridge, "Taking Solipsism Seriously: Nonhuman Animals and Meta-Cognitive Theories of Consciousness," 339.
[215] Ibid, 339.
[216] Ridge, Michael. "Taking Solipsism Seriously: Nonhuman Animals and Meta-Cognitive Theories of Consciousness," 328.

without also being able to attribute beliefs to others. If this were the case, animals would be capable of having higher-order thoughts, but might fail tests that are designed to have them predict the beliefs of others.

Most importantly, there is still the possibility that "some non-human animals might be *unreflective solipsists*—capable of having thoughts about their own mental states, but incapable of having thoughts about the mental states of others."[217] As Michael Ridge points out, it is fallacious to take evidence that animals lack thoughts about the thoughts of others as evidence that animals lack HOTs about their own mental states. If this were the case, animals would qualify as phenomenally conscious because they could have higher-order-thoughts about their own thoughts, but their higher-order thoughts would not show up in mindreading tests. In addition one would expect that the ability to have thoughts about one's own mental states would precede (both evolutionarily and developmentally) the ability to have thoughts about the mental states of others. Therefore, contrary to Carruthers, it seems too quick to claim that animals cannot form higher-order thoughts because they fail certain tests designed to detect mindreading capabilities. First, there are some good scientific studies that seem to suggest that some animals do have mindreading capacities. Second, even if it were the case that these studies turned out to be methodologically flawed or some other creative explanation could be given to explain away the appearance of mindreading abilities in animals, it does not follow that some animals could not have thoughts about their own mental states.

So now that we have seen that what some philosophers have taken as evidence against animals having HOTs is, at worst, inconclusive, we might wonder if there is any other positive evidence for the presence of second-order thoughts in animals. Further evidence for the existence

[217] Ibid, 318.

of higher-order thoughts in animals comes from new research in animal metacognition. Metacognition is cognition about one's own cognitive states—those with metacognitive abilities are able to know what they know and know what they don't know. In humans metacognitive processes are often manifested in feelings of uncertainty and information-seeking behavior as well as deferred response behavior.[218] In the last ten years there has been a growing body of research in the area of animal metacognition: research in animal metacognition seems to indicate that some animals are aware of what they know and what they don't know and respond like their human counterparts in similar testing scenarios. There are three main test paradigms for the study of metacognition in animals: uncertainty response tests, gambling tests and information-seeking tests. While a detailed account of these experiments is both informative and fascinating, for the sake of space I will limit my discussion to the results of the uncertainty response paradigm.

In two similar uncertainty response experiments monkeys[219] where taught to discriminate between dense and sparse visual patterns by pressing a button marked 'D' for 'dense' and another marked 'S' for 'sparse' while dolphins[220] were trained to discriminate between high and low-pitched auditory signals by pressing levers, one designated for comparatively higher-pitched sounds and the other for lower-pitched sounds. The animals would receive a food reward for a correct response and penalty for an incorrect response (which was a time-out period where they could not participate in the next test question and therefore could not secure a food reward). The animals were then familiarized with a third button or lever which represented an 'I don't know' option.

[218] J. David Smith, "The Study of Animal Metacognition," *Trends in Cognitive Science* 13 (2009): 389-396.
[219] W. Shields, et al., "Uncertain Responses by Humans and Rhesus Monkeys (*Macaca mulatta*) in a Psychophysical Same–different Task," *Journal of Experimental Psychology: General*, 126 (1997): 147-164.
[220] J. David Smith, et al., "The Uncertain Response in the Bottlenosed Dolphin," *Journal of Experimental Psychology: General* 124, (1995): 391-408.

When animals chose this option, they were not given a food reward, but were allowed to progress to the next test question without having to undergo a time-out penalty.

During tests when the three options (sparse, dense and unsure or high, low and unsure) were present the animals would consistently select the uncertainty response when the test questions were particularly difficult. (These were questions that the researchers previously determined would elicit correct responses that corresponded with chance.) What is striking about this experiment is that humans tested in a similar paradigm exhibited similar response patterns. The human subjects explained that they selected the uncertainty button when they were aware that they didn't know the answer to a question. The researchers concluded that like the humans subjects, the animals were probably also aware of their own uncertainty when they selected the third option.

In another uncertainty paradigm experiment, pigs were taught to discriminate between different shapes and objects. While the pigs performed at an overall 90% accuracy level, researchers observed that the pigs physically backed away after they had chosen incorrect answers on the test. In the test, only one pig backed away from a correct answer, while the others only backed away when they had given incorrect answers. Even though no external cues were given that would indicate to the pigs that they had chosen incorrectly (e.g. a buzzing sound or failure to secure a reward) the pigs seemed to know when they had misapplied one of their concepts about the shape, size or type of object in the test question.[221]

These studies seem to indicate that some animals are able assess their levels of certainty and uncertainty about their answers to test question indicating that these animals have higher-order thoughts. Metacognition experiments seem to show that some non-human animals fulfill

[221] Keddy-Hector et al., "Cognition in Domestic Pigs: Relational Concepts and Error Recognition," 1999 in Colin Allen, "Animal Concepts Revised," 38.

criteria one and two by having thoughts about their own mental states. When this data is combined with what we know about the conceptual abilities of animals (criterion 3), animals have the crucial components necessary to form higher-order thoughts. Therefore, we have no good reason, even on HOT models of consciousness, to say that at least some non-human animals don't experience phenomenally conscious mental states.

v. Phenomenal Consciousness on the Dispositional Higher-Order Thought Theory (DHOT)

On Carruthers particular version of HOT theory, DHOT or the *Dispositional* Higher Order Thought Theory of Consciousness, he argues that animals can't be phenomenally conscious because they lack a fundamental piece of neural architecture that would allow them to have higher-order thoughts. So, despite the reasons I offered for thinking that animals can have higher-order thoughts on HOT theory, Carruthers argues that DHOT is importantly different:[222] On DHOT, one need not have an actual HOT in order to have a conscious mental state; one need only have the disposition to have a HOT—"there need not *actually* be *any* HOT occurring, in order for a given perceptual state to count as phenomenally conscious, on this account."[223] However, one might wonder why the mere availability to a system capable of producing higher-order thoughts would be enough to confer consciousness on first-order mental states. If no actual higher-order thought is necessary on DHOT, what is the difficulty in granting phenomenal consciousness to animals? Carruthers explanation of the working of dispositional consciousness in the case of humans is rather complicated, but it is fairly simple in the case of animals.

[222] Peter Carruthers, "Metacognition in Animals: A Skeptical Look." *Mind and Language* 22, no. 1 (2007): 58-89.
[223] Carruthers, *Phenomenal Consciousness*, 227.

For humans, the mind is designed so that "perceptual contents are regularly passed to two or more short-term memory stores, C (conscious) and N (non-conscious)" where C is "apt to give rise to a HOT about itself, should circumstances demand."[224] The perceptual contents that are fed into C are attached to a "HOT consumer module" which will "transform the intentional contents of the events in C…by virtue of the powers of the HOT consumer system."[225] No actual HOT is necessary for conscious awareness because a mental event in C, say for instance, with the content 'red' has an analog in the higher-order system, 'seems red.' The higher-order system is able to produce the analog 'seems red' when 'red' is made available to the system through the subsystem C. Carruthers explains, "It is in virtue of the availability of first-order perceptual contents to a mind-reading system which understands the is-seems distinction and/or contains recognitional concepts of experience, that all of those first-order contents are, at the same time, higher-order ones."[226] Carruthers dispositional account of consciousness is very close to Locke's 'inner sense' view. And simply put, the inner-sense (or higher-order experience) model of consciousness holds that creatures have an inner sensory faculty that is charged with scanning the outputs of first-order perceptual experiences (that come from outer sensory faculties) rendering them conscious.[227] Roughly, this is why humans are able to have conscious experiences without needing to have actual HOTs.

Animals, however, are unable to have conscious experiences because they simply do not have subsystem C. Caruthers argue that evolution has provided humans with two perceptual sub-systems, C and N. As we saw above, the primary function of C is to make content available to a

[224] Ibid, 228.
[225] Ibid, 242.
[226] Ibid, 243.
[227] Peter Carruthers, "Higher-Order Theories of Consciousness," *Stanford Encyclopedia of Philosophy* (2009), ed. Edward N. Zalta, URL=<http://plato.stanford.edu/archives/fall2009/entries/consciousness-higher/>.

higher-order system that renders the contents of C conscious. However, Carruthers argues that because perceptual system C is a relatively recent evolutionary advance, animals only have the more primitive perceptual system, N, which mediates action-guiding, yet non-conscious experiences.

Carruthers appeals to empirical and evolutionary evidence to support his dual-processing account. First, Carruthers appeals to the classical neurophysiological view of pain which is that humans have two distinct neural pathways responsible for processing pain signals.[228] One of the pathways processes "the sensory or descriptive components of pain sensations" and the other "is responsible for the affective or motivational dimensions of pain."[229] Carruthers explains:

> Pain in humans is mediated through two types of nerve, which generate distinct projections in the brain subserving distinct functions. Very roughly, the 'new path' is fast; it is projected into the higher centers of the brain, and is responsible for precise pain location and fine discrimination of feel. The 'old path' is, by contrast slow; it is projected primarily to the more ancient limbic system in the brain, and gives rise to aversion (the desire for the pain to cease).[230]

In humans these two pathways are normally integrated, however they sometimes are processed separately in the case of injury. For instance, some brain-damaged patients say that they feel painful sensations and understand that they are painful, yet are indifferent about the continuance of their pain. These patients are also indifferent about future pain and do not attempt to avoid it. This seems to suggest that these patients have sustained damage to their 'lower' or medial pain processing system—the system which gives rise to the feeling of pain and thus aversive behavior in the presence of painful stimuli. Carruthers also reports that "some types of morphine can suppress

[228] According to the McGill Pain Questionnaire the descriptive component of pain which is processed in 'higher' pathway can be described with such words as throbbing, shooting, boring, stabbing, cutting, gnawing, wrenching, scalding, stinging, heavy and splitting while the affective quality of pain which is processed though the 'lower' pathway can be described as annoying, troubling, miserable, intense, unbearable, nagging, nauseating, agonizing, torturing.

[229] Colin Allen et al., "Deciphering Animal Pain," ed. Murat Aydede, *Pain: New Essays on Its Nature and the Methodology of Study*, (Cambridge, MA: MIT Press, 2005), 353-354.

[230] Carruthers, "Brute Experience," 266.

the activity of the old path, while leaving the new path fully functioning."[231] Patients treated with particular types of morphine report that their pain feels the same yet it no longer bothers them. Carruthers argues that animals have only one active pathway and this single pathway allows animals to display aversive behavior in the presence of noxious stimuli, without the phenomenological sensations that unusually accompany pain in humans.

However, this physiological explanation for the lack of pain experiences in animals is utterly implausible for three reasons. First, as Adam Shriver points out in his paper, "Minding Mammals," evidence from positron emission tomography (PET scans) and other experimental results indicate that all mammals have both the higher and lower pain-processing pathways.[232] Therefore, Carruthers is mistaken in asserting that all non-human animals do not have a higher pain-processing pathway. The second reason Carruthers explanation is implausible is because, according to Carruthers, it is precisely the 'lower' pain-processing system that is responsible for the aversive quality/hurtfulness of pain. As Carruthers points out morphine desensitizes the lower pathway (because there are more opioid receptors along this path) while leaving the 'higher,' lateral pathway largely unaffected. Because we know that human patients experience the relief of pain when they are given morphine that disables the lower-pathway, we can reasonably assume that those (animals or humans) that have aversive pain signals traveling along the lower-pathway will experience pain. Third, newer research in pain processing seems to indicate that Carruthers has the neurological story backwards—the affective, aversive feeling of pain is processed in the higher region of the brain while the sensory component of pain is processed in the older regions of the

[231] Ibid, 267.
[232] Adam Shriver, "Minding Mammals," *Philosophical Psychology* 19, no. 4, (2006): 433-442.

brain.[233] While this indicates that it is metaphysically possible that non-mammals only experience the sensory component of pain and not the affective component of pain, there is no reason to think that some other part of the brain might mediate the aversive component of pain. This is especially true of the functionalist theory of mind that Carruthers endorses.

Studies in neuroplasticity have shown that the brain can be rewired so that areas of the brain previously thought to be solely responsible for visual, tactile or auditory processing can take on new abilities. In one study newborn ferrets had their ocular nerves rewired so that these nerves fed into the auditory cortex instead of the visual cortex. The ferrets in the experiment were able to develop fully functional visual abilities using only the auditory center of their brain.[234] Since it is possible for non-mammals to have independently evolved neural structures that mediate conscious pain sensations, it would be too quick to conclude that non-mammals that lack the newer affective pain pathway do not experience pain as aversive.

In addition, it precisely the aversive quality of pain that motivates us to avoid it. In experiments where mammals are given morphine in order to diminish the aversive quality of pain, the behavior of the mammals changes. Humans and other mammals who have been given morphine no longer try to avoid noxious stimuli. So it seems that if non-mammals only experienced the sensory aspect of pain and not the affective/aversive aspect of pain, we would observe much of the same behavior we do in mammals with ablated or morphine-treated affective pathways. But since we do not see this behavior in non-mammals we have some reason to believe that animals that display avoidance behavior in the presence of noxious stimuli are experiencing the aversive aspect of pain.

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[233] Stephen McMahon and Martin Kolzenburg, *Wall and Melzach's Textbook on Pain,* 5th Edition, (New York: Churchill Livingstone, 2005).

[234] Jitendra Sharma, Alessandra Angelucci and Mriganka Sur, "Induction of Visual Orientation Modules in Auditory Cortex," *Nature* 404, No. 6780, (2000): 841-848.

Carruthers also gives an evolutionary account of how a dual-processing system might have arisen. He argues that the 'newer' system would have been indirectly selected for by the evolutionary advantages conferred on those creatures with mindreading capabilities. For instance, if one's friend eats a bite of food and makes a 'sour face,' someone with mind-reading capabilities would form the belief that the food was bitter or had gone bad etc…. There would be a clear evolutionary advantage to those possessing this ability: Mindreading capabilities would have given mammals living in cooperative groups a survival advantage. Carruthers writes:

> …the mind-reading faculty would have needed to have access to a full range of perceptual representations. It would have needed access to auditory input in order to play a role in generating interpretation of heard speech, and it would have needed to have access to visual input in order to represent and interpret people's movements and gestures, as well as to generate representations of the form, 'A sees that P' or 'A sees that [demonstrative object/event]'.[235]

In short, phenomenal consciousness developed because of selective pressures favoring individuals who could make inferences about the mental states of others.

Initially this account sounds fairly plausible. It is indeed true that animals that live in cooperative groups tend to have greater intelligence than their solitary counterparts indicating that group-living encourages the development of relatively advanced capacities. However, as Colin Allen has pointed out, Carruthers' evolutionary story is too general to account for the evolution of *all* of our sensory capacities. Carruthers' story only accounts for the evolutionary development of hearing and vision. Allen explains:

> Because intentional communication between humans takes place predominantly in the modalities of hearing and vision (and perhaps to some extent touch), Carruthers' focus on these two modalities…seems designed to enhance the plausibility of his thesis that interpretation (in the sense of mental attribution) constitutes a driving force for evolution. But the thesis is much less plausible with respect to other sensory modalities, particularly smell and taste, not to mention the many forms of somatosensory perception.[236]

[235] Carruthers, *Phenomenal Consciousnes*, 331.
[236] Colin Allen, "Animal Pain," *Nous* 38, no. 4 (2004): 630.

In general mind-reading capabilities in humans rely only on hearing, vision (and to a lesser extent touch). Humans typically do not form beliefs about the mental states of others based on smell, for instance. One can imagine how being able to have conscious experiences of smell and taste might have had certain evolutionary advantages, but these advantages would have been *directly* selected for. If Carruthers wants to argue that humans/primates are the only creatures with phenomenal consciousness, then phenomenal consciousness would need to be something that only benefited higher animals…thus, his story about the indirect selection of conscious experience through selection for mind-reading capacities. How, then could our other sensory faculties, like taste and smell, have arisen if these faculties did not aid us in mind reading? Perhaps they conferred some very slight advantage in our interpretation of others' mental states. Or perhaps they once gave us an evolutionary advantage, but humans have since lost these capacities (e.g. the capacity to make inferences about others' mental states based on smell).

Allen argues that neither of these responses is plausible. First, if evolution selects for slight advantages in mind-reading capabilities it would make sense that humans would be conscious of the deliverances of the vomeronasal system, for instance. Although human behavior seems to be influenced by vomerolfaction (i.e. the detection of pheromones), humans are not phenomenally conscious of these perceptions. Allen argues:

> Indeed it seems much more straightforward to think of cases where it would be adaptively advantageous to know whether one's pheromones have been detected and are generating an intense desire for intercourse in a conspecific, than it is to think of adaptive scenarios for more mundane odors. It is far from obvious why we have phenomenally conscious smell and taste but are oblivious to vomerolfaction.[237]

[237] Ibid, 630.

Given the failure of Carruthers' account it becomes very unlikely that humans are the only animals that have conscious experiences. Evolutionarily speaking we would expect to see, at the very least, a gradual development of consciousness (and the mechanisms necessary for consciousness) over time with animals 'closest' to humans having experiences that are phenomenologically akin to our own experiences.

vi. Conclusion

I have argued that we have good reason to believe that at least some non-human animals are able to produce higher-order thoughts of the form, 'I have M.' First, from the data on metacognition, we saw that at least some animals have knowledge of their own mental states. And we saw that if animals have knowledge of their own mental states then animals will know that their experiences belong to them and not some other creature. This fulfills criterion 1. Second, we saw that there is some evidence from mindreading experiments that animals have the concepts of 'having an experience', 'a perception' or 'a seeming.' In addition the results from metacogniton experiments show that animals have concepts of their own experiences because they are able to attribute thoughts, beliefs, and other experiences to themselves. This fulfills criterion 2. And third, we saw that many animals have concepts and are therefore able to represent the contents of many of their experiences in some way or other. This fulfills criterion 3. This gives us good reason to believe that even if HOT theory is the correct view of consciousness, at least some animals would qualify as conscious beings on this theory.

In the last part of this section, I looked at Carruthers' particular version of HOT theory, DHOT. Contrary to Carruthers, I argued that we have no good reason to think that all non-human animals lack the neural architecture needed to form higher-order thoughts. Instead, there is good

experimental evidence, neurobiological evidence, and evolutionary evidence that, at least other mammals, have the neural architecture necessary for the formation of higher-order thoughts and thus would be capable of having phenomenally conscious experiences.[238]

3. Michael Murray's Neo-Cartesian Defense

In the second chapter of his book, *Nature Red in Tooth and Claw: Theism and the Problem of Animal Suffering,* Michael Murray concludes that his neo-Cartesian defense (or causa Dei) [239] succeeds in undercutting the problem of animal suffering. He argues that while we don't know enough to say that the neo-Cartesian solution to the problem of animal pain is true, we also don't know enough to say that it is false. He argues that because we cannot rule out the possibility that animals do not suffer, atheologians can't say that they know that animal suffering poses a problem for God's goodness. In short, Murray writes, "our acceptances don't warrant the rejection of the view."[240] Therefore, for all we know animals don't suffer and there is no problem of animal pain. Murray explains:

> Still, we must remain mindful of the fact that one need not believe the neo-Cartesian views to be true in order to think that they add up to a successful explanation. One need only believe that our acceptances do not warrant rejection of the view. Neo-Cartesian explanations at least live up to this minimal challenge.[241]

[238] This section has been previously published: Beth Seacord, "Animals, Phenomenal Consciousness and Higher-Order Theories of Mind," *Philo* 14, no. 2 (2011): 1-22.
[239] Michael Murray reserves the term 'defense' for responses to the logical problem of evil. He uses the Leibnizian term 'de causa Dei' or CD to describe defenses constructed for the purpose of undercutting the evidential version of the problem of evil. In this dissertation, I will use the more standard term 'defense' for both responses to the logical and evidential versions of the problem of evil.
[240] Ibid, 72.
[241] Ibid.

However Murray's assessment of the evidence is mistaken: It seems that we do know enough about animal minds to reject his defense—our acceptances do warrant the rejection of neo-Cartesiansim. Murrays' goal is to offer "explanations … [that] do not stand in tension with…a common set of justified acceptances endorsed by individuals who are reasonably well-educated in matters of contemporary philosophy and science."[242] However, educated 21st century readers do have good reason to reject neo-Cartesianism. In what follows, I will argue that the educated reader has access to the evidence of neurobiology, cognitive ethology and evolutionary biology and therefore has good reason to reject Murray's neo-Cartesian defense. In the following section I will survey some of the evidence that we have for believing that many animals experience conscious pain.

i. The Standard Argument from Analogy for Animal Pain

Arguments from analogy typically compare two things. Let us suppose we are comparing X and Y. X and Y both have property P. We see that X has some further property Q. So we infer that Y also has property Q. Take for example, William Paley's famous design argument. The universe is compared to an watch. Both the universe and the watch have property, P; they are intricate, complex etc. The watch also has property Q—a designer. Paley then argues that it is most likely that the universe is similar to the watch in the unobserved respect—the universe also has Q—the universe has a designer.

[242] Murray, 72.

Not all arguments from analogy are as weak as Paley's design argument. Take for example the well established fact[243] that the results of scientific experiments performed on animals are generalizable to humans. The argument from analogy that scientist make in these cases is that when we observe rats ingest a certain carcinogen and develop a tumor then we can infer that if humans ingest the same carcinogen then humans will also develop tumors. This argument from analogy is incredibly strong because we know that animals and humans are similar in the relevant respects giving us good reason to believe that animals and humans will also be similar in unobserved respects.

The standard argument from analogy for animal pain is extremely strong because we know so much about the pain behaviors and neurophysiological structures that are correlated with conscious pain experiences in humans. This gives us reason to believe that if animals have similar pain behaviors and neurophysiological structures then it is incredibly likely that they must have similar pain experiences. Here is a more formal presentation of the argument from analogy for animal pain:

1. Neurophysiological structures *x,y,z* and behaviors α, β are strongly correlated with conscious pain in humans.
2. Some non-human animals have neurophysiological structures analogous to *x,y,z* and 'pain' behaviors that are analogous to α, β.
3. Therefore, non-human animals with neurophysiological structures analogous to *x,y,z* and behaviors analogous to α, β are likely to have conscious pain experiences.

In his book, *In Nature's Interests: Interests, Animal Rights and Environmental Ethics,* Gary Varner appeals to neurophysiological and behavioral similarities between humans and animals to argue

[243] Kristin Shrader-Freshette personal correspondence.

that at least some animals experience conscious pain.[244] In what follows I will examine Varner's list of neurophysiological and behavioral criteria paying special attention to marginal cases in the hopes of 1) separating primitive animals that do not experience conscious pain (e.g. bacteria and other microbes) from animals that clearly seem to experience conscious pain (e.g. mammals) and 2) in doing so discover what criteria are necessary and sufficient for attributing conscious pain to other animals.

The first criterion for the conscious experience of pain on Varner's list is the presence of nociceptors. Nociceptors are neural endings that specialize in the detection of noxious stimuli. In humans there are four kinds of nociceptors: mechanical nociceptors which detect tissue damage, thermal nociceptors which are activated in very hot or cold temperatures, chemical nociceptors that respond to threshold amounts of chemicals like capsaicin found in chili peppers, and 'sleeping' nociceptors which register pain in inflamed tissues surrounding wounded flesh.

In the animal kingdom, nociceptors are widespread. Biologist Victoria Braithwaite concludes that "nociceptive-like systems are very ancient in evolutionary terms."[245] They are found in such simple animals as "Cnidarians, the animal group that contains jellyfish, corals, and sea anemones."[246] Experiments on pain thresholds in snails (the *Cepaea nemoralis*) have shown that they are sensitive to heat. When a hot plate is heated to 40^{o} C (the threshold at which the snail's thermal nocieceptors are activated) the snail will respond by lifting part of its foot in the air.[247] However, the ability to detect noxious stimuli through nociception is merely a necessary condition for the conscious experience of pain. Simple invertebrates, like the snail, "possess diffuse nerve

[244] Gary E. Varner, *In Nature's Interests: Interests, Animal Rights and Environmental Ethics*, 49.
[245] Ibid, 38.
[246] Victoria Braithwaite, *Do Fish Feel Pain?,* 34.
[247] Ibid, 37.

nets that allow electric neurons, to pass through their bodies."[248] But since "there is no brain and no specialized areas with clusters or bunches of neurons"[249] in these simple creatures, it seems that they could not experience conscious pain. Thus the presence of nociceptors is a necessary but not a sufficient condition for conscious pain.

The second criterion on Varner's list is the presence of a central nervous system (CNS) which includes the brain and spinal cord. While having a CNS is a prerequisite for experiencing pain sensations, all bilaterian animals (i.e. animals that have bilateral symmetry—a front, back, top and bottom) have a CNS. This includes very simple animals like flatworms and insects. While some scientists argue that the presence of a CNS in lower animals (like insects) should make us reticent to conclude that these animals do not experience pain,[250] other scientists are more confident that insects are not capable of having conscious experiences.[251] This is because simple animals have very primitive brains and nervous systems. For instance, the flatworm has a CNS, but its brain consists of only two fused ganglia. The relative simplicity of the brains and nervous systems of insects makes it unlikely that anything as sophisticated as a conscious experience could arise from them. Therefore, one can conclude that a central nervous system with a relatively sophisticated brain is required for sentient pain.

The third criterion for the conscious experience of pain on Varner's list is the *connection* of the nociceptors via the peripheral nervous system (PNS) to the central nervous system. Obviously, if the nociceptors are not attached to the CNS, pain messages cannot reach the brain. Some researchers argue that the ganglia in insects are so loosely associated that pain signals probably

[248] Ibid, 34.
[249] Ibid.
[250] D. R. Griffin, *Animal Thinking*, (Cambridge, MA: Harvard University Press, 1984).; Robert Elwood, "Pain Experience in Hermit Crabs?" *Animal Behavior* 77 (2009): 1243-6.
[251] C.H. Eisemann, et al., "Do Insects Feel Pain? A Biological View," *Experientia* 40 (1984): 164-167.; Victoria Braithwaite, *Do Fish Feel Pain?,* 129.

never reach their primitive brains. For instance, Eisemann et al. conclude that "the neural organization of insects…does not appear to support the occurrence of a pain state."[252] Therefore, animals must have a system of interconnected neural pathways including a PNS and a CNS that are connected to the brain. And since insects seem not to have the right neural structures, this gives us reason to believe that insects do not experience conscious pain.

In an article on the evolution of nocicieption, Lynne Sneddon argues that the neural architecture that allows higher vertebrates to experience pain "must have evolved between the agnathans and the emergence of fishes."[253] Agnathans are a type of fish which are our distant evolutionary relatives. Bony fish later branched from agnathans (after amphibians had emerged from their agnatha relatives) and thus have a shared neural architecture. There is evidence then, that these two types of fish can experience conscious pain as their neural architecture is similar to higher vertebrates.[254] Thus there is good evidence from both evolutionary biology and neurophysiology that boney fish (osteichthyes), agnathans and animals which are more sophisticated have a neurological structure that is capable of supporting conscious pain.

Varner's fourth criterion for conscious pain is the presence of endogenous opioids (e.g. endorphins, endomorphins, dynorphins etc…). Endogenous opioids are opiates that are naturally produced by the body. When these chemicals bind to opioid receptors in the brain, in the CNS, or in the PNS, naturally occurring opiates produce an analgesic effect in humans. Endogenous opioids are common throughout the animal kingdom. They are found in worms, insects, fish, birds and mammals[255] and have been shown to alter pain behaviors in these animals:[256]

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[252] C.H. Eisemann, et al., "Do Insects Feel Pain? A Biological View," *Experientia* 40 (1984): 164-167.
[253] Lynne U. Sneddon, "Evolution of Nociception in Vertebrates: Comparative Analysis of Lower Vertebrates," *Brain Research Reviews* 46 (2004): 126.
[254] Ibid., 125.
[255] Ibid., 53.

> Opiate binding sites, with properties similar to those of mammalian opiate receptors have been shown to be present in the neural tissue of the marine mollusk (*Mytilus edulis*). Kavaliers et al. have shown that administration of low doses of the opioids peptides methionine-enkephalin and b-endorphin produces 'analgesic' effects in terrestrial snails of the species *Cepaea nomoralis* and that morphine has a similar effect…Enkephalin-like substances and their receptors have also been found in insects, and opiate agonists and antagonists have been shown to modulate nociceptive-type responses in several species of arthropod, including mantis shrimps (*Squilla mantis*), honeybees, and praying mantes.[257]

Although the presence of opiate receptors is a good clue that animals that have them are able to experience pain, they aren't sufficient to show that animals experience pain. For instance, very simple animals like the snail have opiate receptors, but do not have a nervous system that is complex enough to make it likely that these creatures experience conscious pain. So, one should not conclude that all animals that have endogenous opiods can experience conscious pain.

The fifth criterion for the conscious experience of pain comes from animal behavior. Varner argues that there is good reason to think that animals experience pain if they behave as if they are in pain. For instance, it would be safe to assume that a dog feels pain if it yelps, cries, and nurses its paw after the paw is injured. However, just because an animal reacts as if it is in pain, does not mean that the animal is actually experiencing conscious pain. Behavioral reactions to aversive stimuli are found throughout the animal kingdom. Even the single celled Protozoa exhibits nociceptive-type responses: "The ciliated protozoon Paramecium, for example, changes the rate and form of its ciliary beat in response to aversive stimulation (such as a poke with a fine needle) so as to effect typical avoidance and escape reactions."[258] Nociceptive responses are also found in anemones that "show protective withdrawal responses by retracting their tentacles and oral disc," earthworms that "show rapid withdrawal reflexes mediated by giant nerve fibers when subjected to

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[256] Ewan St. John and Gary R. Lewin, "Nociceptors: a Phylogenetic View," *Journal of Comparative Physiology* 195 (2009): 1094.
[257] Jane A. Smith, "A Question of Pain in Invertebrates," *Institute for Laboratory Animal Research Journal* 22, no. 1-2 (1991): online edition.
[258] Jane A. Smith, "A Question of Pain in Invertebrates," online version.

unfavorable stimuli" and medicinal leeches that "show pronounced writhing and coiling responses when their skin is pinched or damaged."[259] Though these behaviors seem to indicate that these creatures are experiencing conscious pain, as I argued above the simplicity of their nervous systems makes it unlikely that they are. This shows that pain behaviors aren't a sufficient condition for inferring that a creature is experiencing conscious pain sensations.[260]

Pain behaviors also aren't a necessary condition for the conscious experience of pain because many animals don't react to noxious stimuli in the way we would expect them to. For example, prey animals like mice tend to mask pain behaviors, presumably to make them less vulnerable to predators. Non-mammals like amphibians, reptiles and fish don't exhibit typical mammalian pain behaviors. For instance, amphibians, reptiles and fish can't cry out or perspire.[261] (However, several species of bony fish demonstrate behavior that we associate with pain including increased heart rate, decreased hunger and decreased attention.[262]) Therefore, behavioral evidence gives us neither necessary nor sufficient reason for attributing conscious pain to animals.

I would be remiss if I did not also point out that behavioral evidence gives us neither necessary nor sufficient reason to attribute conscious pain to other *humans*. Take the well-known antics of soccer players on the field. The well-versed soccer fan knows better than to attribute conscious pain to these players who seem to writhe in agony. Pain behavior in other humans gives us reason to believe that others are feeling pain in the absence of evidence to the contrary (e.g.

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[259] Ibid.

[260] One study on pain behavior in rats showed that when rats are given 'mildly painful' shocks to their tails this produces antinociception (or reduced responsiveness to noxious stimuli) for up to 10 minutes. (This is measured by a decrease in the reflex response of the tail to the electric shock.) But during this time rats "will vocalize more rapidly to the same stimulus."[260] Although there is good evidence that rats are less susceptible to feelings of pain, they produce more vocalizations. One would be wrong to infer from behavior alone that these rats are feeling more pain during periods of antinociception. Thus, aversive behavior in the presence of noxious stimuli is not sufficient for the inference that conscious pain is present.

[261] Charles Darwin, *The Expression of the Emotions in Man and Animals*, (New York: D. Appleton and Company, 1873), 73.

[262] Victoria Braithwaite, Do Fish Feel Pain?, 46-74.

being a professional soccer player). In the case of pain behaviors of very simple animals like worms and snails, their simple neural architecture gives us reason to believe that they are not experiencing conscious pain.

The sixth criterion for the conscious experience of pain on Varner's list also comes from animal behavior. If an animal's pain responses are changed by analgesic drugs, then this is good evidence that the animal can experience pain. A great many experiments have shown that animal behavior is altered by pain-relieving drugs.[263] For instance, in one experiment rats were given two kinds of water to drink from: one was sweetened with sugar and the other was mixed with an unpalatable pain-relieving drug. Healthy rats favored the sweeter water, but rats with arthritic joints preferred the water mixed with the pain reliever.[264] Experiments of this type indicate that the behavior of these animals is influenced by their preference for pain-relieving analgesics. Many other studies have shown that analgesics will alter the behavior of animals including the behavior of fish, birds, and mammals. However analgesics have also been shown to alter the pain responses of very simple organisms like the snail. As argued above, it is unlikely that snails experience pain sensations so this criterion is not a sufficient condition for conscious pain.

When the criteria on Varner's list are combined we can see that creatures that have a functioning system of nociceptors that are connected through the peripheral nervous system to the central nervous system (which includes the forebrain) are likely candidates for the experience of conscious pain. The forebrain is the area where the unpleasantness of pain sensations is processed in humans. For this reason animals that have electrical pain impulses that register in the forebrain

[263] L.S. Chervova and D.N. Lapshin, "Opiod Modulation of Pain Threshold in Fish," *Doklady Biological Sciences* 375 (2000): 590-1.
[264] Victoria Braithwaite, *Do Fish Feel Pain?*, 30.

are most likely experiencing conscious pain.[265] Various fish species have been shown to register pain impulses in the forebrain:

> …both goldfish and trout could detect the pinprick and that the signal it generated was relayed to different areas within the brain including the telencephalon, or forebrain…Overall these results are very important because they show that the forebrain of the fish is involved in the response to a pin prick—the forebrain is the place in birds and mammals where higher order information processing occurs.[266]

Therefore, based on Gary Varner's analogical argument we can conclude that bony fish species (osteichthyes) as well as other more sophisticated animal species are all capable of experiencing conscious pain.

ii. Strengthening the Argument from Analogy

Skeptics of animal consciousness attack the argument from analogy by pointing to dissimilarities between behaviors (e.g. absence of linguistic abilities) and dissimilarities between neurophysiological structures (e.g. different brain structures) in order to undermine the argument from analogy. Because the criteria on Varner's list are vulnerable to these objections, what is needed are "theoretical reasons for connecting" the criteria on Varner's list "to attributions of

[265] We should not be dogmatic, however, about the presence of a forebrain as a necessary condition for the experience of conscious pain. As Colin Allen points out, "it is important not to place too much importance on any single chunk of neural tissue." This is because there is good evidence that the presence of certain brain structures are not necessary for conscious experience (Allen, 356) One cannot infer, for instance, that hawks do not have conscious visual experiences because they do not have the brain structures that are correlated with sight in humans. Studies in neuroplasticity have shown that the brain can be rewired so that areas of the brain previously thought to be solely responsible for visual, tactile or auditory processing can take on new abilities. In one study newborn ferrets had their ocular nerves rewired so that these nerves fed into the auditory cortex instead of the visual cortex. The ferrets in the experiment were able to develop fully functional visual abilities using only the auditory center of their brain. [Jitendra Sharma, Alessandra Angelucci and Mriganka Sur, "Induction of Visual Orientation Modules in Auditory Cortex," *Nature* 404, No. 6780, (2000): 841-848] Since it is possible for non-mammals to have independently evolved neural structures that mediate conscious pain sensations, it would be too quick to conclude that non-mammals without electrical activity in the forebrain do not experience conscious pain.

[266] Victoria Braithwaite, Do Fish Feel Pain?, 72.

conscious pain."[267] Colin Allen argues that "a functional understanding of pain in the context of learning would provide a framework for assessing comparisons of anatomy, physiology, and behavior."[268] Finding such a theoretical framework would increase the probability that animals that have certain physical structures and display pain behaviors are experiencing conscious pain. If the behaviors and neurophysiological structures on Varner's list were evaluated in terms of the evolutionary advantages that they conferred on creatures that could learn from conscious pain, then this would close off objections from disanalogy and make a stronger case for conscious pain in animals. In short, the argument would not rest solely on the similarity of certain behaviors and physiological structures to those of humans. A case can be made that certain types of learning are unlikely to occur without phenomenally conscious experiences. And an evolutionary story can be told that makes it *prima facie* likely that the development of crucial neurophysiological structures aids the evolutionarily advantageous ability to learn from conscious experiences. We can structure our hypothesis as follows: The function (or partial function) of a system of nociceptors that are connected to the CNS is to produce conscious pain experiences that facilitate evolutionarily adaptive learning. Confirming evidence for this hypothesis would come from studies that (1) show that animals have the physical structures that are strongly correlated with the conscious experience of pain in humans and would (2) show that conscious pain aids these creatures in evolutionary advantageous learning. For this reason, evidence from studies on learning and pain taken together with neurophysiological data will strengthen the case for the conscious experience of pain in a given creature.

It is crucial to separate those studies where conscious experience is necessary for learning from those where conscious experience is unnecessary. For example, some studies show rather

[267] Colin Allen, et al., "Deciphering Animal Pain," 352.
[268] Ibid., 353.

conclusively that conscious experience is not necessary for some types of learning (e.g. classical conditioning and simple forms of operant conditioning). In one study, the spinal cords of rats were transected at the second thoracic vertebrae. Even with the neural paths to the brain severed, the rats' spinal cords were able to display adaptive behavioral modifications that demonstrated four distinct types of learning including learned escape and avoidance behaviors in response to electric shock. The authors of the study conclude that contrary to the traditional understanding of the function of the spinal cord, the spinal cord is capable of 'learning' on its own! They write:

> Our studies have shown that the spinal cord is inherently capable of adapting to environmental events including electrical stimulation, and is sensitive to the temporal relationships between stimuli. In particular, spinal neurons seem to learn punishment relations….Traditionally the spinal cord has been viewed as a simple conduit of information traveling to and from the brain. Clearly, this is not the case. In our studies, the spinal cord learned the relationship between a specific leg position and electrical stimulation of the tibialis anterior muscle.[269]

Because learning is happening in the absence of a brain, the rats' learned responses are obviously non-conscious. Similar studies have also been performed on headless insects, showing that the insect's "vental nerve cord is capable of mediated learning."[270]

In order to demonstrate that *conscious* pain facilitates learning, experiments must be designed to show that an animal can achieve a more sophisticated type of learning than that which could occur non-consciously in the species under consideration. Colin Allen suggests that "some kinds of learning…seem to be closely correlated to conscious awareness, for example, trace conditioning as opposed to delay conditioning…"[271] In this vein Fuchs and LaBuda have suggested a test paradigm that would employ advanced learning and would help determine which animals have

[269] M.A. Hook and J.W. Grau, "An Animal Model of Functional Electrical Stimulation: Evidence that the Central Nervous System Modulates the Consequences of Training," *Spinal Cord* 45 (2007): 709.
[270] Thomas Alloway, "Learning and Memory in Insects," *Annual Review of Entomology* 17, (1972): 43-56.
[271] Colin Allen, et al., "Deciphering Animal Pain," 356.

conscious pain experiences.[272] The tests would allow animals to decide where an aversive stimulus is applied—to an injured or uninjured body part. Fuchs and LaBuda performed this test paradigm on animal subject:

> The basic paradigm requires the use of a chamber that is equally divided into a dark side and a light side. Under normal conditions, rats naturally prefer the dark area of the environment. During behavioral testing, a mechanical stimulus is applied to an injured hindpaw when the animal is within the dark area or to the non-injured contralateral hindpaw when the animal is within the light area of the chamber…Control animals spend about 20-40 percent of the time on the light side of the chamber. However, the animals that have an injury demonstrate escape avoidance behavior toward the dark side of the chamber and a shift-in preference toward the light side of the chamber.[273]

If the rats in the above experiment were not conscious, what we would expect to see would be a marked preference for the darker environment, with flight to the lighted environment after the shock. At this point non-conscious animals would either 'forget' about the shock and return to the 'preferred' darker environment to be shocked again (on their injured paw), or the animals would remain to be shocked (on their uninjured paw) in the lighter environment just to flea into the darker space to repeat the process. The fact that the rats in the experiment are able to demonstrate learning that goes beyond simple escape and avoidance behaviors shows that the learning taking place is aided by the rats' conscious pain experiences.

In another experiment researchers investigated the role that pain plays in decreasing normal behaviors such as appetite and attention to novel stimuli. "Attention is regarded to be a higher order cognitive process; the animal needs to focus on a single thing while ignoring other aspects of the environment."[274] Fish that were subjected to aversive stimuli were unable to focus their attention on objects that control fish considered 'scary.' When the fish were given pain

[272] C. J. LaBuda and P.N. Fuchs, "A Behavioral Test Paradigm to Measure the Aversive Quality of Inflammatory and Neuropathic Pain in Rats," *Experimental Neurology* 163 (2000): 490-494.
[273] Colin Allen, et al., "Deciphering Animal Pain," 358-359.
[274] Ibid, 67.

relievers their ability to attend to 'scary' objects in their environment improved. This seems to indicate that the fish in the experiment were distracted by conscious pain sensations.

It would be preferable to avoid experimental models that purposefully inflict painful stimuli on animals in order to discover if these animals are capable of experiencing conscious pain. Scientists should strive to design studies that will minimize the aversive stimuli that is inflicted during the experiment. One option is to investigate other types of conscious experience (i.e. other than pain experiences) that aid learning. Of course it is possible for a creature to have conscious sensory experiences of sight, sound and smell yet not have the conscious experience of pain.[275] However, those who are skeptical of pain experiences in animals are also skeptical of the ability of animals to have any type of conscious experience. Therefore, establishing that animals have some conscious sensations would go a long way toward dispelling skepticism about their ability to feel pain.

One way to test for the conscious experience of animals is to check for an animal's ability to detect misinformation. If an animal is able to "discriminate between tokens of a given stimulus type according to whether those tokens carry misinformation,"[276] then this would indicate a more sophisticated type of learning than merely operant learning or habituation. In this experiment model, a food source is placed upwind from an animal but the food source is behind an impenetrable wall (the scent is released through a small grate in the wall). One might infer that an animal is conscious if the animal is able to detect the misinformation (i.e. the animal smells the food but there is no food available) it is receiving about the situation. So the animal's ability to sense the

[275] This is evidenced by a rare disorder in humans called congenital analgesia or CIPA (congenital insensitivity to pain with anhidrosis). Humans with CIPA report normal conscious sensations of sight and sound yet are unable to feel pain. Although it is possible for animals to have normal sensory experiences yet be unable to experience pain, this would be highly unlikely.

[276] Marc Bekoff and Colin Allen, *Species of Mind: The Philosophy and Biology of Cognitive Ethology*, (Cambridge, MA: MIT Press, 1997), 149.

food source would not change, but the animal's judgments about its perceptions would. Marc Bekoff argues that:

> The general capacity for treating perception and belief independently is an empirically testable phenomenon even in the absence of linguistic report. Behavioral evidence that an organism is subject to illusion yet can make choices that depend on rejecting the illusory properties can replace direct verbal reporting.…In our view, attributing conscious, subjective experiences may provide the best explanation for the ability of some organisms to make this distinction.[277]

So for instance, in the above experiment model, if an animal quickly learns that despite the odor of the food, the food is unavailable and ceases to pursue the food source, one can infer from its relatively quick response, that this type of learning is not simple conditioned or habituated learning. For instance, an octopus will quickly learn that when the smell of food is illusive and will cease to pursue the scent in a scenarios like the above.[278] In contrast, a bacterium will always follow a chemical gradient emanating from a piece of food whether or not the food source is available.[279] Bacteria are not able to learn which tokens of an experience carry misrepresentation and which do not. Therefore, the ability to detect misrepresentations of sensory information is a very good indicator that a given animal is conscious.

Although relevant research on the conscious experience of non-human animals has only been carried out in a handful of species, one might make a tentative generalization about the distribution of pain in the animal kingdom. There is good evidence that mammals, birds, reptiles, amphibians, and fish (agnathan and bony fish) experience conscious pain. However, it is unlikely that animals less sophisticated than fish[280] with the exception of Cephalapods[281] have the capacity to experience conscious pain.

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[277] Ibid, 152.
[278] Colin Allen, personal correspondence.
[279] Marc Bekoff and Colin Allen, *Species of Mind: The Philosophy and Biology of Cognitive Ethology*, 148-149.
[280] There is some evidence to suggest that cartilaginous fish like sharks and rays do not experience conscious pain.

iii. Murray's Four Neo-Cartesian Proposals

Despite the evidence that gives most educated people living in our time reason to believe that animals experience pain, Murray advances four neo-Cartesian proposals that are supposed to make us doubt what we had previously taken ourselves to believe about the capacity of animals to feel pain. Murray tries to give educated readers good reason to doubt this justified belief by advancing four different neo-Cartesian proposals. He writes, "each of the four proposals, if true, would have the moral significance necessary to sustain a neo-Cartesian explanation with respect to

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[281] Cephalopods, particularly octopi, are invertebrates yet have incredibly complex nervous systems. The octopus' "eight suction-cupped legs contain gangliated cords with almost three times the neurons of the central nervous system." And "the ratio of brain weight to body weight in cephalopods is greater than that of most fish and herps…" (i.e. snakes). Octopi have been able to reveal their intelligence in various tests where they are able to run mazes and successfully recognize and manipulate objects. In addition, octopi have demonstrated observational learning by showing a statistically significant improvement after watching other octopi perform tests. Some speculate that the relatively advanced intelligence of the octopi developed as a result of their unique relationship to their environment:

> …they are born two to three millimeters in length and yet they grow to have an arm span of a meter or more and several kilograms in weight. Consequently they must continually re-learn what is predator and what is prey. Fish eat them when they are small, but they eat fish at maturity. Plankton, on which they rely when very small, are of little use to them when they are grown. Relatedly, as they grow, soft-bodied octopi must use successively larger cavities for shelter…and this means that they must continually relearn their surroundings as they relocate from time to time.

Because of various evolutionary pressures on species at every level of evolutionary tree, there is not a scientifically defensible way to draw a line between *taxa* saying that all species above a certain line are conscious while all species below the line are non-conscious. Therefore, scientists face the difficult and time-consuming task of applying a workable model that will accurately gauge the distribution of conscious awareness, specifically conscious pain, across the animal kingdom. For the purposes of this dissertation, I will make certain generalizations about the ability of certain classes of animals to feel pain. For instance, we might conclude based on studies of some members of the order *Rodentia,* (e.g. tests performed on rats, mice, guinea pigs and squirrels) that all members of this order are sensitive to all types of pain. But as we saw above in the case of the naked mole rat, scientists might discover that a species member of the order or family might be an exception to the generalization. On the other hand, scientists may discover an exception to the generalization that some class of creatures is incapable of experiencing pain like cephalopods that belong to the same phylum as snails and clams. References: Gary Varner, *In Natures Interests: Interests, Animal Rights and Environmental Ethics*, (New York: Oxford University Press, 1998); Fiorito, Graziano and Pietro Scotto. "Observational Learning in Octopus Vulgaris." *Science* 256 (1992): 545-47; M. J. Wells, *Octopus: Physiology and Behavior of an Advanced Invertebrate, (*London: Chapman and Hall, 1978).

animal pain."[282] Murray thinks his neo-Cartesian defense succeeds because we don't know enough to reject all four positions. However, as I argued above, the educated reader has access to the evidence of neurobiology, cognitive ethology and evolutionary biology and therefore should have good reason to reject each of Murray's four neo-Cartesian positions.

Murray's first position distinguishes between two types of consciousness—access consciousness and phenomenal consciousness. Access consciousness is the ability to respond to one's environment—plants have access consciousness: they are able to respond to their environment by turning toward the sun, for example. However, plants do not have phenomenal consciousness; they don't turn toward the sun because they believe that it is healthier or more pleasant for them to do so. Neo-Cartesians of Murray's first type argue that all non-human animals have access consciousness but not phenomenal conscious. They are aware of their environment in one sense but are not aware of it in another important sense. Murray defines this first position as follows:

> 1. Many nonhuman creatures are conscious in as much as they are alive, awake and have sensations. These creatures have mental states that give them perceptual access to features of their environment in a way that allows them to make the requisite discriminations necessary for psychological control over their behavior. Yet, unlike the sensory states possessed by humans the mechanisms whereby these organisms have access to the world lack any phenomenal character whatsoever. There is an intrinsic difference between the sensory states of nonhumans and humans in this phenomenal respect.[283]

The Cartesians of the first group cite the phenomena of 'blindsight' and its analogue 'blind pain' to support their position. As we saw in the section above, on Carruthers' DHOT theory, human patients with a damaged visual cortex are sometimes able to respond to visual stimuli without the subjective experience of sight.[284] For instance they may be able to catch a ball even though they report that they did not see the ball. Such experience is likened to sleepwalking or driving on

[282] Murray, 58.
[283] Murray, 53-4.
[284] Peter Carruthers, "Brute Experience," *The Journal of Philosophy* 89 (1989): 258-269.

'autopilot.' Like the automatic driver who is not 'aware' of one's surroundings, one is still able to respond to one's environment by avoiding obstacles and navigating appropriately. Some neo-Cartesians believe that the experiences of all non-human animals (or all non-primates) are limited to access consciousness—animals can gather and respond to sensory information, but lack the phenomenal consciousness that humans usually experience.

However, both the blindsight and the automatic driving example given to support the idea that animals do not have phenomenal consciousness are faulty. First, humans that experience blindsight have lesions on their striate cortex (part of the visual cortex), but many higher animals have perfectly healthy visual cortices. Because of this, it is reasonable to assume that animals do not have experiences that are analogous with blindsight. However, skeptics point out that "the phenomenon of blindsight shows only that a functioning striate cortex is a physically necessary condition for conscious visual experience, not that it is sufficient."[285] Further, "it may be that in the case of everyday non-conscious experience the striate cortex is indeed active, but that its information is not made available to whatever structures in the human brain that underlie consciousness."[286] However, when monkeys are given similar lesions on their striate cortex (or have their striate cortex removed) as human blindsight patients, they show many of the same behaviors as the human patients in blindsight cases. What is notable, however, is that the behavior of the 'blindsighted' monkeys is as different from normal monkeys as human blindsight patients are from normally functioning humans.[287] In addition, human blindsight patients do not "spontaneously respond to things presented to their scotomas, but must be trained to make

[285] Ibid., 260.
[286] Ibid.
[287] P. Stoerig and A. Cowey, "Blindsight in Man and Monkey," *Brain* 120 (1997): 535-559.

responses using a forced-response paradigm."[288] So for instance if a ball were thrown at a blindsight patient who was not yet trained to respond to items in their area of 'blindness', they would not be able to catch the ball thrown in their direction. This gives us reason to believe that animals, who regularly respond to external stimuli without training, are not experiencing a condition analogous to blindsight. Although Murray is careful to point out that the phenomena of blindsight is not conclusive evidence that animals lack phenomenal consciousness, these examples have been used with much rhetorical force by neo-Cartesians.

In addition, the comparison between animal behavior and automatic, non-conscious human behavior in these examples is faulty. First, the automatic driver example is more likely an example of selective attention and not non-conscious experience. The driver is conscious of many things, for instance, the song on the radio or the conversation she is having with her passenger. Selective attention is not evidence for non-conscious experience. We ignore much of what we see every day, choosing to focus our attention on some things and not on others. For example, we might 'see' the other customers in the coffee shop, carefully winding our way around them on our way to pick up our order, but we don't choose to focus on them and will not remember them later. Similarly, animals probably choose to ignore much of what they see, focusing only on what is deemed important. However, there is no evidence that animals are unable to recall salient experiences after they occur. If all of an animal's experiences were non-conscious, then, like the automatic driver, they would be unable to recall any of these non-coconscious experiences. However, Colin Allen notes that unlike "the unconscious experiences of the events that occurred during automatic driving…there is no evidence that animals are similarly unable to recall their allegedly unconscious

[288] Colin Allen, "Animal Pain," 626.

experiences."[289] If the scrub jays in the memory experiments mentioned above were truly unconscious when it cached its seeds, then it would not be able to remember where those seeds were later.

The next three of Murray's neo-Cartesian positions are inspired by the higher-order views of consciousness. As we have already seen we have good reason to believe that some higher animals (like mammals and birds and perhaps reptiles, amphibians and fish) have the capacity to form higher-order thoughts. Murray's second and third neo-Cartesian positions are as follows:

> 2. For a mental state to be a conscious state (phenomenally) requires an accompanying higher-order mental state (a HOT) that has the state as its intentional object. This HOT must be a thought that one is, oneself, in that first-order state. Only humans have the cognitive faculties required to form the conception of themselves being in a first-order state that one must have in order to have a HOT.
>
> 3. Some non-human creatures have states that have intrinsic phenomenal qualities analogous to those possessed by humans when they are in states of pain. These creatures lack, however, any higher-order states. They have no access to the fact that they are having a particular feeling, though they are indeed having it. Since phenomenal properties of states of pain and other sensory states are intrinsic to the states themselves, there is no difference on this score between humans and other creatures.[290]

Both of these positions hold that animals must direct a second-order thought toward a first order 'pain' state in order to have a phenomenally conscious experience of pain. Position number two is a functionalist version of HOT theory and is closest to Carruthers' own version of HOT.

Functionalists, like Carruthers believe that there is nothing intrinsically painful about first-order states for humans or animals; "instead the phenomenal properties turn on the extrinsic features of the state, viz., whether the creature is aware of itself as being in that first-order state."[291] Because this external relation exists between the second and first-order states in humans and not animals, humans experience pain while animals do not. Position number three is a non-

[289] Ibid.
[290] Murray, 55-6
[291] Michael J. Murray and Glenn Ross, "Neo-Cartesianism and the Problem of Animal Suffering," *Faith and Philosophy* 23, No. 2 (2006): 176.

functionalist version of HOT theory. Non-functionalists admit that first-order states are intrinsically painful, but argue that animals "do not have the access to the fact that they are having this particular feeling, though they are indeed having it."[292] On this view, animals are not able to direct higher-order focus toward their first-order sensations in order to notice them.

As we have already seen, even if HOT theory is true, I have already argued that there are good reasons to believe that some animals have the necessary higher-order thoughts for phenomenal consciousness on HOT theory. This should give us reason to doubt positions two and three above. In addition, it isn't even clear that the third position is coherent; it seems to be saying that animal pain states are both phenomenally conscious and not phenomenally conscious at the same time. As Robert Francescotti has pointed out, "…if these states are phenomenally similar to those we have, as (3) claims, then there would be a 'what it is like character' to these states, and in particular something like the distressful feel of our pain states would accompany their pain states as well."[293] The most charitable way to interpret position three is that animals have phenomenally conscious pain states but they don't attend to them. An animal in 'pain' is like the distracted diver who 'sees' the road and the other cars but does not attend to them and therefore, in a sense, is not aware of them. However, pain is importantly different from other phenomenally conscious states. We often 'tune out' certain visual, auditory or taste sensations choosing to attend to some sensations and not to others; however, pain sensations, especially intense pain sensations, are importantly different than visual, auditory or taste sensations. While we can choose not to attend to certain visual or auditory stimuli, pain, especially intense pain, is much harder to 'tune out'. Therefore, if "non-human creatures have states that have intrinsic phenomenal qualities analogous

[292] Ibid., 176.
[293] Robert Francescotti, "The Problem of Animal Pain and Suffering," *Companion to the Problem of Evil*, eds. Justin McBrayer and Daniel Howard-Snyder, New York: Blackwell, 2013.

to those possessed by humans when they are in states of pain," then it seems that animals like humans would also have difficulty 'tuning out' pain sensations.

Murray's fourth position is also inspired by the higher-order theory of consciousness. Even though this position admits of the possibility that some animals are able to form higher-order thoughts, these animals don't suffer from their 'pains':

> 4. Most nonhuman animals lack the cognitive faculties required to be in a higher-order state of recognizing themselves to be in a first-order state of pain. Those that can on occasion achieve a second-order access to their first-order state of pain nonetheless do not have the capacity to regard that second-order state as undesirable.[294]

The fourth neo-Cartesian position is that although most animals do not have higher-order thoughts, there might be a few who do. But according to hypothesis four even though these animals have access to their lower-order mental state they do not find their 'pain' states to be unpleasant. In short, some animals might receive the cognitive significance of the 'pain' experience but not the affective sensation of 'pain'. On this view animals have first-order 'pain' states and second-order awareness of the 'pain' states, yet they do not understand the 'pain' to be undesirable. As we saw above, some human patients who have damaged prefrontal cortices display this kind of behavior. These patients say that they feel 'painful' sensations and understand that they are 'painful', yet are indifferent about the continuance of their 'pain'.[295] In addition these patients do not attempt to avoid 'painful' events in the future. Studies of human patients with this condition show that awareness of 'pain' and the aversive experience of pain are not necessarily connected. Murray points out that research in neurophysiology has established that there are two distinct neural pathways in humans, one that processes cognitive information and another that processes affective information. In humans these two pathways are normally integrated, however they are sometimes

[294] Murray, 57.
[295] Peter Carruthers, "Brute Experience," *The Journal of Philosophy* 89 (1989): 267.

processed separately.[296] It is the difference in function of these two neural pathways that explain this phenomenon. Murray, like Carruthers, argues that because animals have only one pain pathway, this single pathway allows animals to understand the cognitive significance of their 'pain' without the affective experience of the unpleasantness of 'pain'. This would explain animal pain behavior without also having to postulate animal suffering.

Murray's fourth position is unconvincing for several reasons. First, we saw above, humans with damage to their affective pathway are indifferent to the continuance of their pain and don't take steps to eliminate it. As Murray notes, humans with a damaged affective pathway don't try to rid themselves of their 'pain' experiences and they don't try to avoid future 'pain' experiences. This behavior is importantly different from typical animal behavior. Animals that are subjected to aversive stimuli do not behave as if they are indifferent to their pains; they try to escape the aversive stimuli and take steps to avoid it in the future. In addition, as discussed above, when mammals are given morphine (which affectively shuts down the affective pathways but not the cognitive pathway when given in the correct dosage) mammals behave just like the humans with damaged affective pathways—mammals on morphine were indifferent to pain and were not motivated to rid themselves of aversive stimuli.

Second, *pace* Murray, non-human mammals do have both affective and cognitive neural pathways showing that at the very least position number four does not eliminate the problem of mammal pain.[297] And as we saw above, it would be too quick to conclude that non-mammals do not experience the aversiveness of pain because they lack the affective pathway. This is because it

[296]Murray cites evidence of two facial recognition disorders: Prosopagnosia and Capgras Syndrome. Humans with Prosopagnosia aren't able to recognize 'familiar' faces—they lack the cognitive ability to identify faces. However Prosopagnosiacs react physiologically as if they do recognize a familiar person. Those with Capgras Syndrome, on the other hand, are able to recognize a familiar face but lack the affective and physiological reactions associated with seeing someone familiar. As a result, those with Capgras Syndrome often report that they believe their friends and loved one's to be clones instead of trusted relations.

[297] Adam Shriver, ibid.

is possible for non-mammals to have independently evolved neural structures that mediate conscious pain sensations.

4. Conclusion

In this chapter I examined three neo-Cartesian proposals (the No-self view, the HOT/DHOT views and Murray's neo-Cartesian defense) and found each of the positions to be utterly unconvincing on empirical and/or philosophical grounds. First, I argued that Lewis and Harrison's moral claim, that forgotten pains and momentary pain are morally unimportant is strongly counter-intuitive. In addition I argued that the supposition that animals do not experience events that are extended in time was not supported by empirical evidence. Second, I argued that Carruthers' higher-order theory of consciousness is implausible on both philosophical and empirical grounds. I object to Carruthers on philosophical grounds arguing that it seems odd that consciousness consists in an external relation between higher and lower-order thoughts. Further, I argued that even if Carruthers' theory of consciousness is the correct one, there is good evidence that animals meet the criteria that Carruthers' lays out for conscious experience in his HOT and DHOT theories. Third, I examined Michael Murray's neo-Cartesian defense. He argues that strange cases like blindsight, blindpain, Capgrass Syndrome and other strange neurological damage and illnesses give us reason to doubt that animals are not capable of experiencing conscious pain. He argues that for all we know animals are like neurologically damaged humans who do not have access to their pains or do not find their 'pains' undesirable. Contrary to Murray, I argue that a person educated in 21st century science has access to data from evolutionary biology, neurophysiology and cognitive ethology and therefore should have no reason to doubt that animals are capable of experiencing conscious pain.

Chapter Four:

Animal Pain and the Regularity of Nature

That there is much suffering in the world no one disputes. Some have attempted to explain this by reference to man by imagining that it serves for his moral improvement. But the number of men in the world is as nothing when compared with that of all other sentient beings, and these often suffer greatly with no moral improvement. A being so powerful and so full of knowledge as a God who could create the universe, is to our finite minds omnipotent and omniscient, and it revolts our understanding to suppose that his benevolence is not [sic.] unbounded , for what advantage can there be in the suffering of millions of the lower animals throughout almost endless time.[298]

–Charles Darwin

Some theists respond to the problem of animal pain by making a two-fold argument: First, they argue that all the pain and suffering caused by natural evil is outweighed by the good of having a natural world that operates according to regular natural laws. On this account natural evil might be outweighed by either the intrinsic good of natural regularity, as some like Saint Thomas of Aquinas and Gottfried Leibniz have suggested, or the instrumental good of natural regularity. Having a regular natural order might be instrumentally good for at least four reasons: (i) it allows us to predict the effects of our actions and therefore gives moral agents greater moral responsibility than they otherwise would have; (ii) it allows for the pleasure of scientific discovery; (iii) it reveals the orderliness of the divine mind and (iv) it allows God to remain hidden and thus allows people to develop the proper attitudes of faith. The second part of the argument from the good of natural regularity is that animal pain is an unavoidable side-effect of having regular natural laws. This is because, as Michael Murray argues, we have no reason to believe that God could have created another, better injury-detection system other than one that involves the conscious experience of

[298] Charles Darwin, *The Autobiography of Charles Darwin*, ed. Barlow, Nora, (London: Collins, 1958), online version: http://darwin-online.org.uk/content/frameset?itemID=F1497&viewtype=text&pageseq=1

pain. In order for this two-fold defense to succeed, its defender must give us reason to believe (a) that the intrinsic and/or instrumental goods of having a regular natural world (taken alone or combined) outweigh the suffering caused by the operation of regular natural laws and (b) it must show that natural regularity is a necessary condition for obtaining these goods. In addition the defender of this position must give us reason to believe that animal suffering is an unavoidable by-product of obtaining goods (i)-(iv).

I will argue that while I am unsure about whether the goods of having a world that operates according to predictable, regular natural laws outweigh all the pain and suffering that occurs in the natural world, it is clear that animal suffering is not an unavoidable side-effect of natural regularity. I will argue that the good of human moral freedom, the good of scientific discovery, the good of knowing God and the (purported) good of divine hiddenness could all be had without animals suffering. There are two ways that God might have achieved this: First, God might have drastically reduced animal suffering by producing miracles for the benefit of animals only in the absence of humans.[299] Second, God might have created a painless (or much less painful) injury detection system for animals.

1. The Intrinsic and Instrumental Goods of a Regular World

i. The Good of Human Moral Freedom

One of the most well-known responses to the problem of moral evil is the free will defense. This argument dates back to the third century when St. Augustine argued that evil is the

[299] Some theists might argue that God does miraculously intervene to mitigate animal suffering. Or they argue that, for all we know, God does intervene to mitigate animal suffering.

unfortunate result of the sinful actions of free persons.[300] Those that endorse the free will defense argue that morally significant freedom requires a choice between good and evil. They argue that it is much better for beings to freely choose the good than to be forced to choose the good by a ready-made propensity for the good or by a limited range of merely good options. Our moral freedom is, purportedly, such a great good that it is worth the 'risk' that some humans will abuse this freedom. As Richard Swinburne explains, "It is good that the free choices of humans should involve *genuine* responsibility for other humans, and that involves the opportunity to benefit *or* harm them."[301] Because it is logically impossible for God to make someone *freely* choose good, 'genuine' libertarian freedom involves the real possibility that free creatures will sometimes choose to do evil.

The natural regularity defense is an extension of the free will defense. Sometimes called the 'consequent free will defense,'[302] the natural regularity defense purports to explain why God allows animals (and humans) to suffer from natural evils. According to the natural regularity defense, natural evil is the inevitable result of having a world with the particular set of natural laws that we have. God allows us to suffer from the regular workings of the physical world because such suffering is outweighed by the moral freedom that living in a regular physical world brings. In order for human beings to have meaningful moral freedom, we not only need to have a free choice between good and evil, but we also need to be able to predict the effects of our actions. The choice to benefit another will be empty (*pace* Kant) if we cannot bring about beneficial results in the world. And we can't do this if we cannot predict which actions of ours will be beneficial. Similarly, we cannot make a meaningful choice to harm another if we cannot predict that an action of ours

[300] Augustine, *On Free Choice of the Will*, trans. Thomas Williams, (Indianapolis: Hackett Publishing, 1993).
[301] Richard Swinburne, *Is There a God?*, (New York: Oxford University Press, 1996), 99.
[302] Michael Murray, *Nature Red in Tooth and Claw: Theism and the Problem of Animal Suffering,109.*

will be harmful. For instance, if I desire to harm another, I must know that punching him in the nose will bring about such harm. In a world where there are no regular natural laws, I could not know that force is (roughly[303]) the product of mass and acceleration and therefore, could not predict the effect of my punch.

What does it mean for a world to operate according to regular natural laws? Roughly, a world is regular if it is governed by physically necessary, but contingent, exceptionless regularities. Regularities are exceptionless if they hold true at all times and in all places in a universe.[304] On the contrary, a system is irregular if the laws of nature fail to hold in some way. For example, if according to the second law of thermodynamics, every closed system tends toward equilibrium over time, and there is a world where closed systems don't tend toward equilibrium, then the second law of thermodynamics fails in that world. However, as I argued in the final section of chapter one, it seems that occasional irregularity would not threaten our moral freedom; only massive irregularity would do so. For instance, suppose God chooses to suspend the second law of thermodynamics in order to temporarily prevent the decay of the body of an important saint as a sign of that saint's holiness (as suggested in the *Brothers Karamazov*[305]). However, as we saw in chapter one, this small, natural irregularity caused by a temporary and local suspension of the second law of thermodynamics should not threaten our moral freedom.[306] Peter van Inwagen explains that "a world…containing all the miracles recorded in the Old and New Testaments would not…be massively irregular, for those miracles were too small (if size is measured in terms of the

[303] I do not need to know the equation F=MA to know roughly how this equation might operate in the actual world.
[304] Thank you to Tylder Hildebrant for his input in this section.
[305] Fyodor Dostoevsky, *The Brothers Karamazov* (New York: Barnes and Noble Classics, 2004).
[306] In *The Brothers Karamazov*, however, the saints are counting on a miracle upon Father Zosima's death. They hope that a miracle will attract pilgrims and help make the monastery more prosperous. One might argue that the expectation of a miracle upon the death of a saint kept the (corrupt and self-centered) monks from looking for ways to make the monastery prosperous by their own efforts. In addition, according to Christian doctrine, one should not expect a miracle in the same way that we would expect natural physical outcomes. This is because God is a personal agent and can perform a miracle whenever and wherever God wishes.

amounts of matter directly affected) and too few and far between." [307] Since individuals (excluding Moses, Elijah and Jesus) do not experience the miraculous on a daily, monthly or yearly basis, the existence of miracles do not undermine our ability to predict the natural effects of our actions. Therefore, small-scale disruptions in the natural order do not threaten our ability to make accurate predictions about the way the world would normally work.

In contrast, a world that is *massively* irregular would undermine our ability to predict the effects of our actions. A world might be massively irregular if God regularly intervened in the workings of nature "by means of an ages-long series of ubiquitous miracles."[308] For instance, if there were a world where God intervened every time a projectile was fired so that it harmlessly swerved around its target, such widespread disruption of the laws of nature would make this world massively irregular. Or if there were a world where "lambs are miraculously hidden from lions, and lions are compensated for the resulting restriction on their diets by physically impossible falls of high-protein manna," this world would also be massively irregular.[309] A massively irregular world might also be one that is deceptive. For example a world that came into existence five minutes ago with the appearance of age or a "world in which beasts (beasts having the physical structures of and exhibiting the pain-behavior of actual beasts) felt no pain would be on that account alone massively irregular."[310] These massively irregular worlds would undermine our ability to be fully informed about the likely effects of our actions and therefore would undermine moral agency.

One might object that it is still possible to have moral knowledge in a massively irregular world. However, while having moral knowledge is possible, it is impossible to *act* morally (or immorally) in a massively irregular universe. For instance, one might know that it is morally wrong

[307] Peter van Inwagen, *The Problem of Evil*, (Oxford: Oxford University Press, 2006), 114.
[308] Ibid, 115.
[309] Ibid.
[310] Ibid.

to cause unnecessary suffering, but one would be unable to predict what one might do to cause or alleviate pain if the world did not operate according to regular natural laws.

Living in an ordered universe allows us to take control of our surroundings. We can use the methods of science to search for cures for diseases, develop tools, cultivate crops, and to protect ourselves from natural disasters. We can also use scientific inquiry in order to improve lives and alleviate human and animal suffering. Alternately, we can use what we learn from science to harm others by developing weapons or biological pathogens or we can ignore what we learn from science and continue to use toxic substances that cause birth defects, disease and cancer in vulnerable populations. An intelligible natural world opens these possibilities, thereby allowing great scope for moral or immoral action.

However, an unfortunate byproduct of the operation of regular natural laws is pain, injury, and death. Both humans and animals are subject to the forces of nature. As Michael Murray puts it, "…nomic regularity might sometimes require that bits of matter come into contact with other bits of matter in a way that results in harm to creatures."[311] Heavy objects fall as a result of the regular operation of the law of gravity and sometimes these heavy objects fall on unsuspecting humans and animals. Lightning is a result of the buildup of electrical charges. Sometimes lightning will strike dry tinder, igniting a forest fire and, as William Rowe has famously pointed out, unwitting fawns might be "trapped, horribly burned" and left for days dying in "terrible agony."[312]

Catastrophic disasters such as tornados, hurricanes, tsunamis and earthquakes as well as natural events such as floods, fires, plagues, drought and famine claim both human and animal lives. Such is the inevitable outcome for fragile beings that live in an ordered universe with laws like

[311] Michael Murray, *Nature Red in Tooth and Claw: Theism and the Problem of Animal Suffering (*New York: Oxford University Press, 2008), 152.
[312] William Rowe, "The Problem of Evil and Some Varieties of Atheism," *The Evidential Argument from Evil,* ed. Daniel Howard-Snyder, (Bloomington, IN: Indiana University Press, 1996), 4.

ours. But according to the natural regularity defense, such suffering is outweighed by the predictability that natural laws bring.

Even if one grants that the good of libertarian freedom outweighs the liabilities of natural evil, one must also show that the outweighing goods cannot be had without natural evil: The natural regularity defense explains why *humans* must suffer moral and natural evils, but it does not explain why *animals* also must suffer these evils. No one would seriously contend that animals use their observations of the natural world to make important moral choices.[313] (In chapter five, I will consider the possibility that animals use their knowledge of the natural world to perform valuable moral or amoral acts). In order for the consequent free will defense to successfully explain all natural evil, one must also show that all animal suffering is a necessary condition for the goods discussed above or is an unavoidable by-product of these goods. But first, let us look at other ways that natural evil might be outweighed by the good of natural regularity.

ii. The Good of Scientific Discovery

In addition to the good of informed moral agency, another good that natural regularity allows is the possibility of scientific inquiry. As we have already seen, the knowledge we gain from scientific investigation allows us to exercise control over our environment and gives us the opportunity to bring about good and evil in our world. In addition, the ability to investigate and understand our ordered and intelligible natural world gives many humans immense intellectual pleasure. The 19th century geologist and theologian George Frederick Wright argued that part of

[313] Marc Bekoff and Jessica Pierce advance the view that other mammals exhibit a rudimentary form of morality in Marc Bekoff and Jessica Pierce, *Wild Justice: The Moral Lives of Animals,* Chicago: The University of Chicago Press, 2009.

the reason for the "general laws of production and preservation" that produce ancient organisms (like trilobites) is for the pleasure of the paleontologist who unearths them. He writes:

> The purpose of that low organism is by no means exhaustively explained when we have taken a measure of the sensational happiness he derived from his monotonous existence…But a far higher purpose is served in the adaptation of this complicated organism and the position of his tomb in a sedimentary deposit to arrest the attention and direct the reasoning of a scientific observer. A page of Darwin has to a single reader more 'value in us' than all the elements had to the whole race of trilobites in Silurian seas.[314]

Some humans undoubtedly derive great pleasure from scientific discovery. In our own century, James Watson's account of his co-discovery of the double-helix structure of DNA chronicles the great joys (and disappointments) of scientific inquiry.[315] In the following excerpt from *The Double Helix*, James Watson recounts the joy he experienced when he solved the puzzle of "why the number of purine residues exactly equaled the number of pyrimidine:"[316]

> Suddenly I became aware that an adenine-thymine pair held together by two hydrogen bonds was identical in shape to a guanine-cytosine pair held together by at least two hydrogen bonds….Quickly I called Jerry over to ask him whether this time he had any objection to my new base pairs. When he said no, my morale skyrocketed, for I suspected that we now had the answer to the riddle….Upon his arrival Francis did not get more than halfway through the door before I let loose that the answer to everything was in our hands.[317]

This was clearly an exciting time for Francis Crick and James Watson. However, do the joys of scientific discovery really outweigh the pain and suffering caused by natural evil? One would have to argue that the pleasure that some amateur and professional scientists get from their investigations and discoveries outweigh millennia of pain and suffering caused by drought and famine, mental and physical illness, congenital defects, and injury caused by earthquakes, volcanoes, hurricanes and tsunamis. Even if one admits that intellectual discovery is

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[314] George Frederick Wright, *Studies in Science and Religion,* (Andover: Draper, 1882), 243, quoted in Michael Murray, *Nature Red in Tooth and Claw: Theism and the Problem of Animal Suffering,* 142.
[315] James Watson, *The Double Helix: A Personal Account of the Discovery of the Structure of DNA*, (London: Weidenfeld and Nicolson, 1981).
[316] Ibid, 114.
[317] Ibid, 114-15.

incommensurable with physical pleasure and pain, it seems highly implausible that the pleasure (intellectual or otherwise) that some derive from scientific inquiry would do much to offset such pain and suffering.

While the good of scientific discovery does not do much on its own to outweigh all the suffering that occurred in the earth's long evolutionary history, one must add the good of scientific inquiry to the other goods that natural regularity might permit. I am unsure about whether the cumulative goods of natural regularity outweigh the evils of animal suffering but as I will argue below, these outweighing goods can be had with much less animal suffering.

iii. The Good of the Nature of God Revealed

Are there other goods that might outweigh natural evil? In addition to moral freedom and the good of intellectual inquiry, an ordered universe is also good for a third reason—it reflects the nature of the Creator. This is (allegedly) both intrinsically and instrumentally good. It is intrinsically good because if God created the universe, then it is a manifestation of God's handiwork. Since God's perfection is unsurpassable, it would be a great good for the natural world to mirror the order and rationality of the divine mind.

Natural regularity is also instrumentally good because it gives us reason to believe that God exists and helps us understand his character. According to Christian tradition, the elegant workings of nature should be seen as proof of the existence of God. For instance, Saint Paul says that God's existence should be evident to all those who have observed his handiwork:

> For since the creation of the world God's invisible qualities—his eternal power and divine nature—have been clearly seen, being understood from what has been made, so that people are without excuse.[318]

[318] Romans 1:20, *New International Version*.

The Psalmist makes a similar point through poetic device. He tells us that we can gain knowledge of God by observing the work of God's hands.

> The heavens declare the glory of God;
> the skies proclaim the work of his hands.
> Day to day they pour forth speech;
> night after night they reveal knowledge.
> They have no speech, they use no words;
> no sounds is heard from them.
> Yet their voice goes out into all the earth
> their words to the ends of the world. [319]

It was a pre-Darwinian maxim that the ordered workings of complex natural systems attest to the existence of an intelligent designer. And if God's end for mankind is that we come to know him, then creating an ordered world that reflects the divine nature might be one way of reaching this goal. Living in an ordered universe gives humans the opportunity to know God, and this is instrumentally good because according to orthodox Christian tradition, knowing God is the *summum bonum*.

If it is the case that humans come to know God through His creation and knowing God is the greatest good, then the good of knowing God clearly outweighs (by definition) the pain and suffering caused by natural evil. But is natural regularity a *necessary condition* for obtaining the *summum bonum?* Can't humans come to know God in other ways than by observing the stars? Natural theology is only one way that some come to know God. Theologians argue that special revelation, miracles and the internal testimony of the Holy Spirit are all ways in which humans come to know God. Thus, natural regularity isn't a necessary condition for knowledge of God.

In addition, one wonders why animals must suffer from natural evil. Animals cannot come to know God through natural theology. Why then do animals have to suffer from the effects of natural regularity when they do not reap the benefits? There does not appear to be any necessary

[319] Psalm 19:1-4, *New International Version*.

connection between the suffering of animals and the goods that humans enjoy—moral freedom, scientific inquiry and knowledge of God. Even the very existence of animals is not necessary for these things. It seems perfectly coherent to conceive of a world operating according to natural laws that contains only the kind of creatures that can benefit from natural regularity—human creatures. In this world the goods of scientific inquiry, moral responsibility and knowledge of God could all be achieved without animal suffering.[320] However, God might have good *independent* reasons for creating non-human animals:

One reason God might have had for creating diverse animal and plant life was because these 'lower' life forms were a necessary pre-requisite for the development 'higher,' human life forms. As we saw in chapter one, Peter van Inwagen argues that we cannot rule out the possibility that non-human animal life was needed for the evolution of human life. For all we know, it may not have been within God's power to create human animals without first creating less-sophisticated life forms (without also creating a massively irregular world). Van Inwagen writes:

> …(at least, for all we know) only in a universe like ours could intelligent life, or indeed life of any sort develop by the operation of the laws of nature, unsupplemented by miracles….The mechanisms underlying biological evolution may be just what most biologists seem to suppose—the production of new genes by random mutation and the culling of gene pools by environmental selection pressure—or they may be more subtle.[321]

Since the existence of higher-level sentient creatures, like ourselves, is a very great good, and the pre-existence of lower-level creatures might have been metaphysically necessary for attaining this end, van Inwagen argues that God might be justified in creating the vast panoply of life that he did. However, as I argued in chapter one, it is highly implausible that an omnipotent God could not have

[320] Peter van Inwagen would deny that conceivability is a guide to possibility in this case. Other prominent metaphysicians would disagree but an extended discussion of modal epistemology is beyond the scope of this dissertation. See David Chalmers, "Does Conceivability Entail Possibility?" *Conceivability and Possibility* eds. T. Gendler & J. Hawthorne (New York: Oxford University Press, 2002), 145-200.
[321] Peter van Inwagen, *The Problem of Evil*, 119.

created human life without first creating other, more primitive life-forms and it is also highly implausible that God would have sacrificed some great good by designing a world with less animal suffering. After all God is supposed to have created time and space, light and darkness out of nothing.

Another reason God might have had for creating a "great chain of being" of plant and animal species was as a reflection of the divine nature. Even though animals do not benefit from their knowledge of God (at least in this life), some theologians have speculated that a diverse created order—a world populated by a panoply of flora and fauna—serves to reflect divine goodness, artistry and abundance. According to orthodox Christian theology, God's decision to create comes from an overflowing of God's being. God 'pours out' his excess in a creative expression of his goodness. In order to make his goodness manifest, God creates a variety of creatures from immaterial angelic beings to sentient intelligent animals to non-sentient plants, rocks and minerals. St. Thomas argues that the diversity of animal life is great good:

> For he brought things into being in order that His goodness might be communicated to creatures, and be represented by them; and because His goodness could not be adequately represented by one creature alone, He produced many and diverse creatures, that what was wanting to one in the representation of the divine goodness might be supplied by another. For goodness, which in God is simple and uniform, in creatures is manifold and divided and hence the whole universe together participates in the divine goodness more perfectly, and represents it better than any single creature whatever.[322]

Leibniz also argues that "the glory of God is…multiplied by as many entirely different representations of his work."[323] Having the glory of God made manifest through biodiversity is both instrumentally and intrinsically good. Biodiversity is instrumentally good, as Aquinas points out,

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[322] St. Thomas of Aquinas, *Summa Theologiae* 47, a1, Fathers of the English Dominican province, trans. (Wheaton: Christian Classics, 1981), quoted in Michael Murray, *Nature Red in Tooth and Claw: Theism and the Problem of Animal Suffering,* 115.

[323] Gottfried Leibniz, *Discourse on Metaphysics IV, Philosophical Essays* eds. Roger Ariew and Daniel Gerber (Indianapolis, Hackett, 1989), quoted in Michael J. Murray, *Nature Red in Tooth and Claw: Theism and the Problem of Animal Suffering*, 116.

because "…His goodness might be communicated to creatures." God's nature is represented to us through the diversity of the created order. Although St. Thomas does not tell us how God's goodness is revealed to us through plant and animal life, we can infer from the passage above that every type of plant—the poplar, the lichen, the pansy—and every type of animal—the buffalo, the lemur and the frog—reflect a part of divine goodness. So by walking through a botanical conservatory or wildlife preserve, humans might come to know God's goodness. This is either because God's nature is revealed in every animal—the monkey, God's humor, the ant, God's industriousness. Or God's creative power and generosity is displayed in his creation of the vast array of life on Earth.

As we saw above there are other ways for humans to come to know God, so on this count biodiversity is not a necessary condition for achieving this good. However, Leibniz and Aquinas also argue that biodiversity is intrinsically good because it reflects the divine nature and the divine nature is incommensurably good. Not many of us would deny that the variety of plant and animal life on our planet is a great good in itself.

Since biodiversity is good in itself and is also good because it is a reflection of the divine mind, we see why animal existence might be a necessary condition for achieving these goods. But this does not tell us why *pain and suffering* are necessary for attaining these goods. While the existence of a diverse array of flora and fauna is intrinsically good, do animals need to suffer in order to secure the goods that natural regularity brings? Van Inwagen argues that for all we know animal suffering is an unavoidable by-product of the evolutionary process. He writes, "…the natural evolution of higher sentient life in a universe like ours essentially involves suffering, or there is every reason to believe it does."[324] But is suffering really necessary at all? It seems as if God could

[324] Ibid, 115.

have created alternate, non-painful mechanisms that would also have allowed animals to escape bodily injury (as I will argue in section two). And, as I will argue below, it seems as if God could have drastically reduced animal suffering by producing miracles for the benefit of animals (in the absence of humans) or by creating a non-painful or less-painful injury detection system.

iv. The (Purported) Good of Divine Hiddenness

Another instrumental good of having a world that obeys regular natural laws is that it allows God to remain hidden. Some argue that if God were to regularly interfere with the workings of nature by producing miracles, then many of the valuable aspects of religious faith would be undermined. Many theologians believe that divine hiddenness is important because it allows people to believe in the right way and for the right reasons. First, some argue that God wants people to freely choose to enter into a loving relationship with himself and not be coerced by overwhelming and undeniable evidence of his existence. However, it doesn't seem that miraculous intervention in the natural world would necessarily compel belief. For instance, Christian tradition records the experience of the disciples who experienced miracle after miracle, yet still did not believe. Peter van Inwagen also argues that a determined skeptic could deny God's existence even if the stars in the sky spelled out 'I am who I am.' He writes:

> Let me make two points. First, these signs you want God to place in the world would have to recur periodically, or, after a few generations had passed, people like you would say that the stories about the signs had grown in the telling—perhaps from the seed of an astronomical prodigy that, remarkable as it was, had some purely natural explanation. Secondly, even the 'I am who I am' story wouldn't make the existence of God evident to a sufficiently determined skeptic—for even the (apparent) rearrangement of the stars could be the work of a lesser being than God. We can imagine no sign that would *have* to be the work of a necessary, omnipresent, omnipotent being. Any sign you might imagine you could also imagine to be the production of a contingent, locally present being whose powers, though vastly greater than ours, are finite.[325]

[325] Peter van Inwagen, "What Is the Problem of the Hiddenness of God? *Divine Hiddenness: New Essays*, ed. Daniel Howard-Snyder and Paul K. Moser, (New York: Cambridge University Press, 2002), 28-9.

Even, if van Inwagen is wrong and the sorts of miracles that God produced did compel belief, the belief that God exists is not the same thing as choosing to enter into a relationship with God. In the Christian tradition it is said that the demons in hell believe that God exits yet they choose to live apart from God. So even if one had undeniable proof of God's existence, it is still possible to freely decide to enter into a relationship with God. Therefore, having very good evidence for God's existence in the form of miraculous intervention in the natural world would not result in our being coerced by God to enter into a relationship with him.

A second reason that some believe that divine hiddenness is important is that it give us the opportunity to develop the right inner attitudes as we "recognize the wretchedness of life on our own, without God."[326] Presumably this is a great good because it fosters humility about human self-sufficiency and might also deepen our joy and gratefulness at eventually entering into a relationship with God. However, as I argued above, the mere belief in the existence of God does compel us to enter into a relationship with God. Therefore people would still have the opportunity to try to 'go it alone' without God. Those who choose to live without God would still have a chance to experience wretchedness without him, thereby developing humility. They also might experience the joy of entering into a relationship with God. So hiddenness is not a necessary condition for these goods.

Another reason why God might want to remain hidden is that it gives us the chance to believe for the right reason.[327] Some have argued that if God produced glorious miracles, then people might turn to God out of fear instead of love. God wants us to believe for the right reasons

[326] Daniel Howard-Snyder and Paul K. Moser, "Introduction: The Hiddenness of God," *Divine Hiddenness: New Essays*, ed. Daniel Howard-Snyder and Paul K. Moser, (New York: Cambridge University Press, 2002), 10.
[327] This is absurd on its face: As a youth minister I learned that the vast majority of Christians commit to Christianity (or convert to Christianity) before the age of 18. This means that most people who are Christians are socialized as Christians and don't choose the faith through a critical evaluation of their beliefs.

so therefore God does not overwhelm us with the fear and trembling that is supposed to occur in the presence of his glory. If this were to happen then we might be "coerced to act in accordance with the revealed information, resulting in good choices and ultimately good character for which [we] are not responsible."[328] In response, one first might argue that because reward and punishment are delayed a great while—until the afterlife, this delay might allow people to choose to do what they wish at the present time despite the fact that rewards and punishments will be meted out in the distant future. Second, God might reveal himself by producing miracles but keep the details of divine reward and punishment to himself. If God did this then no one could object that our moral choices would not be our own.[329]

In addition, as noted above, these responses to divine hiddenness overlook the possibility that God could reduce the amount of suffering in the world without sacrificing any of the (purported) goods that remaining hidden might serve. God might miraculously intervene to help animals when humans are not around. For example, invisible angelic hands could save fawns from forest fires, put fallen eaglets back in their nests or reach down to right tortoises stranded on their backs.[330] Miracles like these produced in the absence of humans would drastically reduce animal suffering while allowing humans to experience all the goods of natural regularity. This would not undermine the human experience of natural regularity because in the presence of humans, tortoises could remain on the backs, fawns could still burn in forest fires and eaglets could still fall from their nests.

[328] Ibid, 14.
[329] Ibid.
[330] For all we know, God does do this.

v. Conclusion

Much of the suffering that occurs is not a necessary condition for human moral freedom, scientific inquiry, the knowledge of God or divine hiddenness as these purported goods might have been had without the extent of animal suffering that we have in our world. In this section, I have argued that while I am unsure about whether the goods of having a world that operates according to natural laws (in the presence of humans) outweigh animal suffering, animal suffering is not a necessary condition for these goods. In the next section, I will continue my argument that animal suffering is not necessary for these goods as God might have created a non-painful injury detection system in non-human animals.

2. Is Pain Necessary for Embodied Existence?

Some argue that creatures could not flourish in a regular world without bodily pain. For instance, Michael Murray argues that "…the ability to experience pain and suffering is necessary for living organisms to survive and flourish in a physical environment governed by physical laws."[331] Michael Murray presents an interesting conceptual and empirical case to support the idea that pain is necessary for the wellbeing of sentient, embodied, higher-level creatures. He argues that pleasurable incentives, reflex behavior and induced beliefs about noxious stimuli all fail to help consistently safeguard embodied creatures from harm. Murray reasons that because these alternative mechanisms would fail to keep creatures safe from harm, physical pain is the only other effective, metaphysically possible mechanism that God might have created.

[331] Michael J. Murray, *Nature Red in Tooth and Claw: Theism and the Problem of Animal Suffering,* 115.

First, Murray considers whether pleasurable incentives might take the place of painful disincentives in regulating behavior. Instead of experiencing a painful sensation that causes one to pull away from some harmful stimuli, Murray wonders whether a creature might be rewarded by intense pleasure when it pulls away from harmful stimuli. But it is easy to see why this mechanism would fail to safeguard creatures from harm. If such experiences are pleasurable, creatures might seek out these pleasurable incentives instead of avoiding them in the first place. Murray writes:

> …imagine the prospect of having children re-wired with such an injury-avoidance mechanism. If they were to experience powerful feelings of pleasure when removing their hands from fires, one would expect them not to avoid injury, but rather to spend their afternoons sticking their hands in fires and removing them! Not exactly adaptive behavior.[332]

If God made us so that we are rewarded by intense feelings of pleasure instead of penalized by pain, then there would be no incentive for us to avoid harmful behaviors. Instead, irrational or non-rational creatures would seek out harmful activities just in order to receive the pleasurable benefits of extracting themselves from them! This design plan would be clearly ineffective. However, there is another way that pleasure might serve to protect us from harm:

In part XI of the *Dialogues Concerning Natural Religion*, David Hume suggests that a good God might have created us so that we would experience a reduction in pleasure instead of pain when we encounter noxious stimuli. So instead of being rewarded by pleasure when one escapes from noxious stimuli, as Murray suggests, Hume argues that sentient creatures could be penalized by a reduction of pleasure. Here is Hume's argument:

> The first circumstance which introduces evil, is that contrivance or economy of the animal creation, by which pains, as well as pleasures, are employed to excite all creatures to action, and make them vigilant in the great work of self-preservation. Now pleasure alone, in its various degrees, seems to human understanding sufficient for this purpose. All animals might be constantly in a state of enjoyment: but when urged by any of the necessities of nature, such as thirst, hunger, weariness; instead of pain, they might feel a diminution of pleasure, by which they might be prompted to seek that object which is necessary to their subsistence. Men pursue pleasure as eagerly as they avoid pain; at least they might

[332] Ibid, 120.

> have been so constituted. It seems, therefore, plainly possible to carry on the business of life without any pain. Why then is any animal ever rendered susceptible of such a sensation?[333]

In short, Hume argues that since we know that both pain and pleasure are strong motivators in this world, it is conceivable that God could have created a world where pleasurable incentives were designed to be the sole motivator in 'the great work of self-preservation.' This suggestion is also problematic. This is because we are not distressed by the loss of pleasure in the same way that we are distressed by pain. We often feel satisfaction after a pleasurable event and are not strongly motivated to continue seeking pleasure, but instead are content to let the pleasurable sensations fade away. Consider the following case: I receive a gift certificate to a luxurious spa where I get a 60 minute massage from a very competent masseuse. When the hour is up, I may feel completely satisfied and relaxed or I may feel regret and wish that my gift certificate was for a 90 minute massage. I might ask to pay more money so I can extend the massage, but I would not be as motivated to do this as I would be to get the masseuse to stop if he decided to begin burning me with a white-hot branding iron. So it seems that we are not as motivated by the pursuit of pleasure as we are by the avoidance of pain.

Hume heads off this objection, however, by suggesting that God might have made us so that we would be as motivated by the pursuit of pleasure as we are by the avoidance pain. If this were the case then God could have made it so that the states that are the most closely connected to our flourishing would be the most pleasurable and those states that are most detrimental to our flourishing would be non-pleasurable, neutral states. So God might have arranged physical states activities, and behaviors on a scale from most beneficial to least beneficial with a corresponding pleasure at each level. Hume's proposal seems plausible given that in the actual world many of our

[333] David Hume, Part XI 205, *Dialogues Concerning Natural Religion*, ed. Kemp Smith, URL= http://www.anselm.edu/homepage/dbanach/dnr.htm

pleasures seem to be situation-sensitive. For instance, eating is pleasurable when one is very hungry; but as one gets full, the pleasure wanes. One can imagine that all pleasures could be designed so that they are sensitive to an individual's unique physical condition. For instance, if an individual has certain vitamin deficiencies, she might have cravings for the relevant foods. If certain individuals are underweight they might desire high-calorie foods and the opposite for overweight individuals. If an individual's muscle tone is inadequate, then she might derive more pleasure from physical exertion than would adequately muscled individuals.

At first blush, it seems that this sort of arrangement might be sufficient to protect creatures from bodily harm. However, the problem with Hume's account is that it would also block our ability to choose from a variety of harmless, but physically non-beneficial, activities. Recall that on Hume's proposed design-plan, creatures will experience a reduction in pleasure when they experience harm. And in order to motivate creatures to avoid harm, Hume has proposed that creatures should be designed to zealously seek out pleasure. It follows that creatures will not be content to experience low-grade or middling pleasures. Instead, creatures are designed to maximize their pleasure experiences. However, this sort of arrangement will be detrimental to those who value (or would have valued in a nearby possible world) the pursuit of activities that are neither physically harmful nor physically beneficial (e.g. stamp collecting). In addition, Hume's design plan will also discourage the development of deep social bonds that require the subordination of one's own desires and wellbeing for the good of another. The following example illustrates both objections: Suppose Fred decides it is very important to him to stay up all night in order to finish knitting a baby blanket for his wife Ethel's new baby. In general the relative importance of knitting won't rank very highly compared to the relative importance of getting a good night's rest in Hume's design plan (i.e. as a rule sleeping when one is tired will contribute to one's flourishing far more than knitting).

However, in some rare circumstances, an individual might believe that knitting is more important than sleeping. But on Hume's proposal it would be very difficult (or physiologically impossible) for Fred to choose to stay up all night given his innate and inordinately strong proclivity for choosing the activity that yields the most pleasure. It might also be difficult (or physiologically impossible) for knitting to be Fred's hobby. Surely the activity of knitting will rank low on the scale of pleasures; and according to Hume, Fred has been designed to avoid low-grade or middling pleasures.

One might object that God could have designed his creatures to be satisfied by any level of pleasure, low or high, but be repelled by the absence of pleasure. If this were the case then all harmful activities could be designed to be pleasure-neutral while harmless activities like knitting could be assigned low-grade pleasures. However, this proposal raises new problems. If harms were not ranked from serious to trivial, then this would not give creatures enough guidance about which activities are extremely important to avoid and which are only trivially so. Let's return to the knitting case above. Suppose that instead of spending one all-nighter finishing a baby blanket, Fred spends a week (or even a month) of sleepless nights knitting baby blankets. Missing one night of sleep is a relatively trivial harm compared to missing days of sleep. But on this revised proposal, Fred's guidance system couldn't warn him of the relative dangers of various activities because three days of missed sleep feels the same as three months of missed sleep.

The problem with Hume's account is that he proposes an overly simplistic account of the motivational forces affecting creatures. As Michael Tooley observes, Hume's account "reflects the unsound idea that every desire or preference must be either a desire for pleasure or a desire to be free of pain."[334] If God created us so that we are more strongly motivated by pleasure than we currently are, this might impede our ability to choose between great varieties of pleasure-neutral

[334] Michael Tooley and Alvin Plantinga, *Knowledge of God*, 112.

options. When many activities are experientially neutral—causing us neither physical pleasure nor physical pain—this opens up a large range of options from which we can choose. It is important that humans (and perhaps other, higher animals) have this neutral space open to us so that we are free to choose between knitting and one night of lost sleep without having to contend with inordinately strong desires pushing us one way or another.

The second alternative to pain that Murray considers is automatic reflex behavior. Some have suggested that God could have made his creatures so that automatic reflexes protect us from danger rather than consciously-mediated pain perception. However, Murray points out that reflex behavior alone would not allow animals to survive as well as reflexes accompanied by pain sensations. This is because the experience of pain allows creatures to regulate their behaviors situationally by choosing to heed or ignore their pain while reflexes do not allow for this flexibility. Murray explains that "hurtful pain constitutes or generates a countervailing desire that provides the intentional agent with an occasion to weigh the threat to its bodily integrity against the importance of satisfying the desire motivating its action."[335] Reflex behavior, on the other hand, does not allow creatures this flexibility: By definition, a reflex is beyond the control of the subject.[336] Murray explains that it is sometimes advantageous to take notice of noxious stimuli and other times it is not. Consider the following scenario:

> If I step on a tack it is appropriate for me to stop and pull it out of my foot before taking any more steps. But we surely would not want this sort of behavior hardwired into our behavior repertoire as a reflex. After all, if I am being chased by a hungry grizzly and happen to step on a tack, I had better keep running![337]

[335] Ibid, 119.
[336] Physiologically reflexes are small involuntary muscular responses (e.g. the blink reflex, patellar reflex, cough reflex, etc..) but the way I am using the word 'reflex' in this dissertation is to indicate any non-voluntary, automatic behavior.
[337] Ibid, 118.

The above case is meant to illustrate Murray's general point that feelings of pain can be ignored when a creature deems some other end to be more important than finding relief and succor, while unconscious, reflex behavior cannot be overridden by more important ends. However, the above 'grizzly bear case' seems to make the opposite point. The reason why humans and other animals do not stop to take the tack out of their foot is not because the creature under attack has stopped to "weigh the threat to its bodily integrity against the importance of satisfying the desire motivating its action," but because in such situations we often do not feel pain at all. In life-threatening situations, our fear triggers a physiological response that blocks pain perception. This might even allow us to run on our damaged foot without limping. So it is not a conscious decision that would keep us running from the grizzly despite the tack in our foot, but adrenaline that helps us to be temporarily oblivious to the pain. When we have reached relative safety and the adrenaline works its way out of our system, only then will we begin to feel pain and tend to our wounds. But what Murray doesn't consider is that unconscious reflexes might also have been designed to be temporarily suppressed by the effects of adrenaline. Adrenaline might also work to suppress the reflex response (as it blocks pain perception in the actual world) and when the danger has passed, the proposed reflex might come into effect—the creature would stop to tend to its wound. Therefore, Murray's grizzly bear example does not show that reflex behavior would not be sufficient to safeguard creatures from harm. Instead, one can imagine that adrenaline might block reflex responses just as it blocks pain responses in the actual world.

However, Murray's grizzly bear example can be amended so that it will support his general point. One can imagine, non-urgent, non-life threatening cases—cases where adrenaline would not kick in—where an agent might want to override a reflex response in order to finish a valued activity. Consider the following case: Suppose that Stephanie has decided to run the Los Angeles Marathon

and has invested a lot of time and money into training and preparing for the race. She has completed twenty-one miles of the race and with only five to go when all-of-a-sudden, she starts feeling pain in her ankle. In our world, Stephanie could decide to ignore the pain and continue to the finish line or she could decide that it is better for her to stop. But according to Murray the ability to weigh one's options in this manner would be impossible if our behavior is controlled by automatic reflexes—Stephanie would have to stop and tend to her ankle. While it is a good thing that in the actual world Stephanie has the option to continue the race or stop, this does not show that it is good, all things considered. Does the good of having the option to continue to damage one's body outweigh the very existence of pain and suffering? It is not clear that it does. However, even if the former does outweigh the latter, this doesn't show that reflex behavior is the only alternative to pain. As I will argue below, automatic reflexes could be an effective way to protect creatures from harm when these reflexes are combined with 'avoidance beliefs' instead of conscious pain.

The third alternative to pain that Murray considers is a mechanism that generates avoidance beliefs. Instinctual beliefs about hazardous substances and circumstances do help animals to avoid some environmental dangers. For instance, almost all sentient creatures have a natural aversion to loud noise, fire and fecal matter. However, these hard-wired beliefs work only for those threats that should be consistently avoided. A creature should not be hard-wired to avoid behaviors/situations that are sometimes helpful and other times are harmful. For example, walking is a wholesome activity but walking on an injured limb is not. Therefore, hard-wired avoidance beliefs would not sufficiently guard creatures from the vast array of perils that inevitably arise in a regular universe like ours.[338] However, this does not show that finely-tuned beliefs would not

[338] This raises the question of why the world has to be so dangerous in the first place.

safeguard creatures from harm. But Murray argues that this will not do the trick. To demonstrate why beliefs alone would not sufficiently safeguard creatures from harm, Murray turns to the work of Dr. Paul Brand.[339] Dr. Brand worked with leprosy patients in India in the 1940s. Leprosy or Hansen's disease is a bacterial infection that affects the peripheral nerves in the skin rendering patients insensitive to painful stimuli in the affected areas. When Hansen's disease goes untreated, patients unwittingly maim themselves while going about their daily activities, often loosing fingers, toes and even whole limbs suddenly or over time. As there was yet no cure for Hansen's disease in the 1940s, Dr. Brand's main objective was to help his patients avoid self-inflicted injury. He created numerous warning devices to help his patients recognize and avoid tissue damage. However, Dr. Brand explains why these devices failed to safeguard his patients:

> We had grandly talked of retaining 'the good parts of pain without the bad,' which meant designing a warning system that would not hurt. First we tried a device like a hearing aid that would…emit a piercing sound when they perceived an actual danger. But when a patient with a damaged hand turned a screwdriver too hard, the loud warning signal went off, he would simply override it….The sobering realization dawned on us that unless we built in a quality of compulsion, our substitute system would never work. Being alerted to the danger is not enough; our patient had to be forced to respond. Professor Tims of LSU said to me, almost in despair, 'Paul, it's no use. We'll never be able to protect these limbs unless the signal really hurts.'"[340]

According to Murray, this anecdote helps us to see that the beliefs that are induced by an alarm system are not as effective as pain sensations in eliciting appropriate bodily responses to harm. Pain intrudes on one's consciousness in a way that beliefs do not forcing sentient creatures to take notice. Therefore, Murray concludes that "…pain and suffering are required to preserve the integrity of sentient physical organisms engaged in intentional action…"[341]

Murray's account is flawed, however, because he assumes that just because Dr. Brand's alarm system failed to keep his patients safe, God could not have made a better, more-effective

[339] Paul Brand and Phillip Yancey, *Pain: The Gift Nobody Wants* (New York: Harper Collins Publishers, 1993).
[340] Ibid, 120.
[341] Ibid, 121.

'avoidance belief system.' One reason why Dr. Brand's alarm system might have been ineffective is because the patients did not really understand the danger that they were in when the alarm sounded. (This fact is illustrated by many of the disturbing anecdotes Dr. Brand tells throughout his book.[342]) Lepers in India in the 1940s probably received no formal education and because of this might not have understood the long-term effects of their condition. An alarm system like the one that Dr. Brand designed would have been more effective in a well-educated person—one who fully understood the import of the leprosy and the purpose of the alarm system. Therefore, the alarm system is unlike the proposed 'avoidance belief system' because the alarm system failed to generate the appropriate beliefs in the subject. An adequately designed avoidance belief system would help the subject understand the seriousness of the harm she is facing. It seems that an all powerful God could create such an alarm system.

Although Murray is right to be suspicious of the ability of pleasurable incentives and reflex behaviors *alone* to protect sentient creatures from harm, Murray overlooks some important alternatives. God might have designed us so that a combination of injury avoidance faculties might serve to protect us as well as, or better than, pain perception—reflexes, pleasurable incentives and avoidance belief-desire sets might be combined to effectively protect creatures from harm. For instance God might have designed pleasure to be finely tuned to our unique needs as suggested above (e.g. overweight people might find eating less enjoyable than underweight people). In addition, God could have created an 'alarm system' that generates the appropriate beliefs about

[342] Here is one such account: "An eager young patient caught my eye as he struggled across the edge of the courtyard on crutches, holding his bandaged left leg clear of the ground. Although he did his awkward best to hurry, the nimbler patients soon overtook him. As I watched, this man tucked his crutches under his arm and began to run on both feet with a very lopsided gate, waving wildly to get our attention. He ended up near the head of the line, where he stood panting leaning on his crutches wearing a smile of triumph….Walking toward him, I saw the bandages were wet with blood and his left foot flopped feely from side to side.…He walked on the end of his tibia, and with every step the naked bone dug into the ground. Nurses scolded the man quite sharply, but he seemed quite proud of himself for having run so fast." Paul Brand and Phillip Yancey, *Pain: The Gift Nobody Wants*, 7.

potential and actual injuries accompanied by the desire to escape from or attend to that harm. An ideal injury detection system might be made to be even more sensitive than our current pain system. For example our current pain system misses many potentially life threatening diseases. For instance cancer patients do not feel the pain of their cancers until it is too late to do anything about it.[343]

> Nearly always the disease is a drama in two acts, the first of which is played secretly in the silent depths of our tissues, every light extinguished, and not every candle lit. When pain develops, nearly always, the second act has been reached. It is too late. The issue has already been determined and the end is near. The pain has only made more distressing and more sad a situation already lost….If nature had any consideration for us, if she had the kindly attributes we attribute to her, it is not when a renal calculus can no longer be passed by the natural channels that she would warn us, but rather at the stage when it is no more than fine debris, and could easily be got rid of.[344]

An ideal injury detection system might generate beliefs about the presence of cancer and other stealthy diseases before the ravages of the disease set in. Another way that our proposed injury detection system might be more effective than our current system is that it would not generate false-signals about non-existent harms. As Michael Tooley points out that:

> These injury detectors often produce high levels of pain when there is no condition that poses a serious health risk to the individual. Consider for example, migraine headaches. These can make a person very miserable indeed, but the condition that causes such headaches is not a health-threatening condition.[345]

Therefore it seems that a non-painful injury detection system might be designed that is not only as effective as our current, painful injury detection system but even surpasses it.

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[343] Michael Tooley and Alvin Plantinga, *Knowledge of God*, 111.
[344] Rene Leriche, *The Surgery of Pain*, trans. Archibald Young (London: Bailliere, Tindall and Cox, 1939), 23-24; quoted in John Hick, *Evil and the Love of God*, (New York: Palgrave Macmillan, 2010) , 299.
[345] Ibid.

3. Conclusion

In this chapter I consider whether the benefits of having a regular natural order outweigh the overall disadvantage of natural evil. I consider whether the good of scientific inquiry, the good of gaining knowledge of God's nature, the purported good of God remaining hidden and the good of being able to make informed moral choices outweigh the terrible suffering that disease, famine, drought, plague and other natural disasters bring. I concede that the ability to predict the effects of actions in a world that operates according to regular natural laws might be such a great good that it outweighs natural evil. However, I argue that animal suffering is not a necessary condition for these goods as God might regularly break the laws of nature to drastically reduce animal suffering.

Next I considered three objections to the view that animal suffering is not necessary for any outweighing good. First, I examine Peter van Inwagen's objection that animal suffering is necessary for the evolution of human beings. I respond that it is highly unlikely that an all-powerful God did not have a different mechanism for creation at his disposal. The second objection to my claim that animal suffering is not necessary for any outweighing good comes from Michael Murray. He argues that physical pain is a necessary prerequisite for embodied existence. However, I argue that it is very plausible that God could have created other non-painful mechanisms that protect creatures from harm just as well, or better, than our current system.

Chapter Five:

Animal Suffering and Animal Virtue

Besides love and sympathy animals exhibit other qualities connected
with the social instincts, which in us would be called moral;
and I agree…that dogs possess something very much like a conscience.[346]
--Charles Darwin

As we saw in chapter four, the regular processes of nature allow for a great many goods including the good of human moral freedom. While I am not sure whether all the goods that accrue from having a world that operates according to natural laws outweigh animal suffering, I argued that animal suffering is *not* an unavoidable by-product of natural regularity as animals might have been outfitted with painless injury-detection systems or might have been spared much suffering via miraculous intervention.

In this chapter, I will explore the possibility that suffering might be instrumentally good for animals. Richard Swinburne argues that the suffering caused by natural evil provides animals with the opportunity to act virtuously in the face of hunger, danger and pain. Swinburne argues that without the challenges that natural hardships pose, animals would not have the chance to develop or demonstrate these supremely valuable moral virtues. While new research in cognitive ethology supports Swinburne's claim that animals are capable of behaving both virtuously and morally, I argue that the opportunities animals have to act virtuously do not offset their suffering.

[346] Charles Darwin, *The Descent of Man*, in Marc Bekoff and Jessica Pierce, *Wild Justice*, 145.

1. Richard Swinburne's Animal Virtue Theodicy

Richard Swinburne has argued that animals benefit from facing natural hardships like injury, disease, scarcity, hunger and loss because, like humans, they have the opportunity to behave virtuously in the face of these challenges. A world with natural evils is instrumentally good because it provides animals with opportunities to behave virtuously—opportunities that would be in short supply without natural evil. Swinburne writes:

> It is good that there be animals who show courage in the face of pain, to secure food and to find and rescue their mates and their young, and sympathetic concern for other animals. An animal life is of so much greater value for the heroism it shows…Yet an animal cannot go on looking for a mate despite failure to find it unless the mate is lost and the animal longs for it; nor decoy predators or explore despite risk of loss of life unless there are predators, and unless there is a risk of loss of life. There will not be predators unless sometimes animals get caught. A hunt would be only a game unless it was likely to end in an animal getting caught and killed; and animals would not then be involved in a serious endeavor. And there will not be a risk of loss of life unless sometimes life is lost.[347]

According to Swinburne the opportunity to exhibit virtue is such a great good that it outweighs the suffering that often accompanies it.

Before assessing Swinburne's theodicy, it is important to get clear on what virtues are. Roughly, a virtue is an ingrained good habit or disposition that is usually acquired with practice. Human persons are able to form their own characters through a series of choices—by making virtuous choices time and again, a person forms good habits or virtues. However, Swinburne does not think that animals have libertarian freedom—"animals do not freely choose."[348] So for

[347] Richard Swinburne, *Providence and the Problem of Evil* (New York: Oxford University Press, 1998), 171.
[348] Richard Swinburne, *Is There a God*?, 111.

Swinburne, animals can't enjoy the great good of forming one's own character by freely choosing between good and evil alternatives.[349] He writes:

> And if the animal does not freely choose the good action, it will only do the action because on balance it desires to do so; and when its desire to act is uncomplicated by conflicting desires, the good action will be spontaneous….The deterministic forces which lead to animals performing good actions sometimes lead to animals doing bad intentional actions—they may reject their offspring or wound their kin—and in this case the bad action cannot be attributed to free will.[350]

If animals cannot freely choose, then how can Swinburne attribute courage, sympathy and heroism to them? The answer is that Swinburne does not think that libertarian freedom is a necessary condition for the instantiation of moral virtues. Therefore, moral virtues can be ingrained dispositions for good that are innate or are acquired through social conditioning—not necessarily through free libertarian choices. So for Swinburne, animal actions can be virtuous even if they are not 'freely' chosen. Instead, animal actions often are *intentionally* chosen. Swinburne defines an intentional action as "one which an agent does because he or she means to do it."[351] So an animal might not 'freely' choose to act virtuously but it does so intentionally. For instance, a wolf might have an inborn disposition to display courage by defending the pack from some threat. So when some danger presents itself, the wolf might not have the 'genuine' libertarian freedom to run away; however, it does make the intentional choice to protect the pack and thereby (unwittingly) the wolf instantiates the virtue of courage. According to Swinburne, even though the choice to be courageous is not free (in the libertarian sense) it is intentionally chosen and this makes the virtuous actions of animals extremely valuable.

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[349] Swinburne's answer to the problem of animal pain comes very close to destroying his solution to the problem of moral evil. If animals don't need a genuine choice between good and evil in order to have valuable virtues, then why can't humans also enjoy these supremely valuable virtues without the possibility of some choosing evil?
[350] Richard Swinburne, *Providence and the Problem of Evil*, 171-72.
[351] Ibid, 88.

i. Empirical Evidence for Moral Behavior in Animals

One might increase the plausibility of Swinburne's theodicy by appealing to current research in cognitive ethology that shows that animals actually do engage in moral or proto-moral behaviors. In their book, *Wild Justice: The Moral Lives of Animals*, Marc Bekoff and Jessica Pierce, argue that animals display a "broad repertoire of moral behaviors" that include cooperation (e.g. behaviors like altruism, reciprocity, trust, punishment and revenge), empathy (e.g. sympathy, compassion, caring, helping, grieving and consoling) and justice (e.g. fair play, sharing, expectations of equity, indignation, retribution, spite).[352] Bekoff and Pierce define morality as "a suite of interrelated other-regarding behaviors that cultivate and regulate complex interactions within social groups."[353] Bekoff and Pierce write:

> Taking animal-behavior research as it stands now, there's compelling evidence for moral behavior in primates (particularly the great apes, but also at least some species of monkey), social carnivores (most well-studied are wolves, coyotes, and hyenas), cetaceans (dolphins and whales), elephants, and some rodents (rats and mice, at the very least). This isn't a comprehensive catalogue of all animals with moral behavior; it simply represents the animals whose social behavior has been studied well enough to provide ample data to draw conclusions. There are other species, such as ungulates and cats, for which data are simply lacking. But it would not be surprising to discover that they, too, have evolved moral behaviors.[354]

Research in cognitive ethology suggests that moral behavior is fairly wide-spread at least among mammals. If one takes this new research into account it might broaden the plausibility and scope of Swinburne's theodicy. In what follows I will give evidence for the existence of two types of moral behavior in animals: justice and empathy.

Although research into the presence of concepts of justice or fairness in animals is in its infancy, there have been some studies on primates and canids that seem to indicate the presence

[352] Marc Bekoff and Jessica Pierce, *Wild Justice: The Moral Lives of Animals*, (Chicago, IL: University of Chicago Press, 2009), 7.
[353] Ibid, 7.
[354] Ibid, 9.

of the concepts of justice. In a series of studies by Brosnan and de Waal,[355] researchers established that monkeys react unfavorably to inequality. In one experiment Capuchin monkeys were trained to exchange pieces of rock for food:

> One monkey was asked to swap a piece of granite for a grape. A second monkey, who had just witnessed the rock-for-grape trade, was asked to swap a rock for a piece of cucumber, a much less desirable treat. The short-changed monkey would refuse to cooperate with the researchers and wouldn't eat the cucumber and often threw it back at the human…a single monkey who traded a rock for a cucumber would be delighted with the outcome.[356]

In the experiment the monkeys seemed to understand when they were being treated unfairly and were upset by it. A skeptic might object that the monkey who received the cucumber is aware that the other monkeys exchanged their rocks for grapes and given that such an exchange is possible the monkey decides to hold out for the better reward. However this interpretation doesn't fully account for the indignant character of the monkey's behavior when it receives less favorable exchange than its conspecifics. The awareness of inequality is an important part of the concept of justice. Even if monkeys don't have a fully developed 'human' sense of justice they recognize and respond to inequality leading some ethologists to ascribe proto-moral behavior to them.

Other studies have established the presence of the concept of fairness in canids. Canids like wolves, coyotes, foxes and domestic dogs have a complex system of rules that govern their social interactions. Some of these rules can be seen during play behavior. Dogs and other canids communicate their intention to play by initiating with bowing gestures: "a dog asks another to play by crouching on her forelimbs, raising her hind end in the air, and often barking and wagging her tail as she bows."[357] The bow is a signal that the dog wants to play and that the dog's subsequent

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[355] S. F. Brosnan and Frans B. de Waal, "Monkeys Reject Unequal Pay," *Nature* 425 (2003): 297-99; "A Proximate Perspective on Reciprocal Altruism," *Human Nature* 13 (2004): 129-52; S. F. Bronsan, "Nonhuman Species Reaction to Inequality and their Implications for Fairness," *Social Justice Research* 19, (2006): 153-85.
[356] Marc Bekoff and Jessica Pierce, *Wild Justice: The Moral Lives of Animals*, 127-8.
[357] Ibid, 123.

behavior, although aggressive, should be interpreted as play behavior. After many years of observing play behavior in canids, Bekoff argues that the bowing behavior drastically reduces the likelihood of aggression during play.[358] The bowing gesture is not only used to initiate play, but to signal continued play, after a bite that was too hard or after an aggressive action that was only meant in fun.[359] However, Bekoff and Pierce argue that when canids violate social expectations in the context of play the other animals often show surprise by stopping play, cocking their heads and squinting their eyes. Play will only continue if the offending animal 'apologizes' by bowing. Among canids there are penalties for those who do not play by the rules:

> Play means play, and not fighting or mating. When there's a violation of these expectations, others react to this lack of fairness. For example young coyotes and wolves react negatively to unfair play by ending the encounter or by generally avoiding those who ask them to play and then don't follow the rules. Coyotes and wolves who play unfairly find it difficult to get others to play with them after they've been labeled a cheater.[360]

Canids seem to have an understanding of fairness and will respond by punished those who violate the social conventions.

Another type of moral behavior that is present in different levels of sophistication across the animal kingdom is empathy. Here are some examples of empathy in rodents and primates:

> CeAnn Lambert, director of the Indiana Coyote Rescue Center, witnessed a small act of heroism in a sink in her garage. Two baby mice had become trapped in the sink overnight, unable to scramble up the slick sides. They were exhausted and frightened. Lambert filled a small lid with water and placed it in the sink. One of the mice hopped over and drank, but the other seemed to exhausted to move and remained crouched in the same spot. The stronger mouse moved the mouse [sic] closer and closer to the water until the weaker mouse could drink…[361]

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[358] Ibid.
[359] Marc Bekoff, "Social Communication in Canids: Evidence of the Evolution of Stereo-typed Mammalian Display," *Science* 197 (1977): 1097-99; Marc Bekoff, "Play Signals as Punctuation: The Structure of Social Play in Canids," *Behaviour* 132 (1995): 419-29.
[360] Marc Bekoff and Jessica Pierce, *Wild Justice: The Moral Lives of Animals*, Chicago: University of Chicago Press, 2009.
[361] Ibid, 86.

Bekoff notes that there are numerous anecdotes like the above that seem to indicate that animals are capable of understanding when another is in distress. In 2006 the first study was published that was widely accepted in the scientific community to corroborate the existence of empathy in non-primates.[362] In this study the researchers discovered that mice that witnessed conspecifics in pain became more sensitive to pain themselves. This study showed that mice are clearly aware of the pain of others.[363] Other, older studies are widely acknowledged to establish something called 'the witnessing effect.' In a 1959 study Russell Church discovered that rats would refuse to push a lever to get a food reward when doing so caused a rat in a neighboring cage to get an electric shock. [364] Another 1962 study showed that rats helped other rats in distress. In this experiment rats were suspending in the air in a harness (which they greatly disliked). Other rats had the opportunity to help the suspended rat get down by pressing a lever. The non-suspended rats seemed to understand that the suspended rat was in distress and acted to alleviate the distress by pressing the lever to lower the suspended rat to the ground.[365] These studies seem to indicate that mice and rats seem to understand when another is in distress and this is a form of empathy.

In addition, it is widely accepted that primates have the ability to empathize with others. There are numerous studies establishing the ability of primates to express empathy. In a classic 1964 study rhesus monkeys would not pull a chain to get food if it caused another monkey to get an

[362] Dale Langford et al., "Social Modulation of Pain as Evidence for Empathy in Mice," *Science* 312, (2006): 1967-70, in Marc Bekoff and Jessica Pierce, *Wild Justice: The Moral Lives of Animals*, 86.
[363] This study does not establish that the mice were actually concerned for the wellbeing of their conspecifics as we would expect from fully empathetic behavior. It merely established that the mice were distressed by the pain of others. The source of this distress might only have been that the mice were afraid that they would also be subject to pain.
[364] Russell Church, "Emotional Reactions of Rats to the Pain of Others," *Journal of Comparative and Physiological Psychology* 52, (1959): 132-34 in Marc Bekoff and Jessica Pierce, *Wild Justice: The Moral Lives of Animals*, 96.
[365] George Rice and Priscilla Gainer, "'Altruism' in the Albino Rat," *Journal of Comparative and Physiological Psychology* 55 (1962): 123-25, in Marc Bekoff and Jessica Pierce, *Wild Justice: The Moral Lives of Animals*, 96.

electric shock.[366] In fact, "One monkey refused to pull the food chain for a full twelve days, starving itself seemingly to avoid causing pain to another."[367] In another 1977 study, Diana monkeys were trained to insert tokens into a slot to obtain food.[368] In the study the oldest female was having difficulty with the task and a younger male helped her by picking up the tokens that the female had dropped and inserted them in the slot letting the female keep the food for herself.[369] At the 2007 "Mind of the Chimpanzee Conference," attendees discussed the case of Knuckles the only known chimpanzee with cerebral palsy. Bekoff writes:

> What's surprising about Knuckles is not just that he himself manages to survive with a debilitating disease, but that the other chimpanzees in his group treat him differently. The community apparently understands that Knuckles is different, and adjust their behavior accordingly. Although a young male would normally be subjected to intimidating displays of aggression by older males, Knuckles is rarely subjected to such treatment. Even the alpha male is tolerant of Knuckles and grooms him gently.[370]

The behavior of the chimpanzees seemed to indicate that they understand that Knuckles is different and should be treated kindly and gently.

These anecdotes and experimental results seem to indicate that at least some animals are able to respond to others with fairness and empathy. These two virtues are but a small sample of the vast repertoire of moral behaviors (e.g. altruism, reciprocity, trust, sympathy, compassion, caring, helping, consoling, fair play, sharing and expectations of equity) that animals are capable of performing.

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[366] Wechkin, et al., "Shock to a Conspecific as an Aversive Stimuluus," *Psychological Science* 1 (1964): 17-18.
[367] Marc Bekoff and Jessica Pierce, *Wild Justice: The Moral Lives of Animals*, 98-9.
[368] Markowitz, *Behavioral Enrichment in the Zoo*, (New York: Van Reinhold Company, 1982).
[369] Marc Bekoff and Jessica Pierce, *Wild Justice: The Moral Lives of Animals*, 99.
[370] Ibid, 98.

ii. Evaluating Swinburne's Animal Virtue Theodicy

What is it about these virtuous intentional choices that make them so valuable—so valuable that they outweigh all extant animal suffering? One option is that animal virtues just tend to produce good consequences in the world (e.g. a courageous wolf protects the pack from harm). But if all that is good about animal virtue is that it tends to protect animals from pain and suffering, this doesn't tell us why pain and suffering were needed in the first place. Maybe what Swinburne has in mind is that the presence of virtues in animals might allow them to live a richer life than they otherwise would have. Swinburne seems to endorse this option. He writes, "God could have made a world in which animals got nothing but thrills out of life; but their life is richer for the complexity and difficulty of the tasks they face…the redness of nature 'in tooth and claw' is the red badge of courage."[371]

First, what does Swinburne mean by a 'richer' life? Maybe what Swinburne has in mind is that complex and difficult tasks give animals excitement. Many of us have the intuition that a life of excitement and adventure indicates a richer existence than a life spent idly enjoying bodily pleasures.[372] Robert Audi endorses this view when he argues that human sporting events wouldn't be the same if "injury were not a significant liability."[373] But it doesn't seem that either humans or animals need to face the potential for great pain and loss in order to enjoy 'difficult and complex tasks'.[374] Track and field, one of the greatest sports in the history of the world, is extremely

[371] Ibid, 173.
[372] This is of course, species relative; some creatures would probably not experience added richness from completing difficult and complex tasks.
[373] Robert Audi, *Rationality and Religious Commitment,* 236.
[374] As evidence of this veterinarians have developed a puzzle that dogs have to solve before they get their meals. In the wild animals spend much of their time trying to find their food. Domesticated animals often become bored because after they finish their food there is nothing left for them to do. The food puzzle is supposed to mimic the intellectual challenge that animals often face when finding food in the wild.

challenging and rewarding yet modern participants go to great lengths to avoid injury (e.g. it is a very common for athletes to stop mid-race if they feel tightness in their hamstring, for example.) In addition, many of the rules of basketball and soccer are designed to protect the athletes from harm and to promote an injury-free game. Only a few adrenaline-crazed dare-devils would argue that one needs to face injury or death to participate in an exciting game or to live an exciting life. Many working dogs like sheep dogs, for example, seem to enjoy the challenge of directing their flocks without having to face the threat of serious harm. Wild animals forage for food, seek shelter, search for mates, bear and care for offspring. These are difficult, complex and serious tasks, but for Swinburne this might not be enough. Consider two hypothetical herds of zebra: The first herd lives in a time of plenty and in a region with no natural predators (lions have been hunted to extinction by poachers and crocodiles live in rivers miles away), plenty of water, land and grass. The second herd lives in a time of relative scarcity, finding enough grass and water for the herd is difficult and the number of predators in existence is optimally balanced with the prey. From the following passage we can assume that Swinburne would argue that the lives of the animals in the first herd are not as rich as the lives of the animals that live in the second herd:

> …animal actions of sympathy, affection, courage and patience are great goods. Yet an animal cannot…decoy predators or explore despite risk of loss of life unless there are predators, and unless there is a risk of loss of life. A hunt would be only a game unless it was likely to end in an animal getting caught and killed; and animals would not then be involved in a serious endeavor.[375]

But it is highly counterintuitive that the lives of the animals in the second herd are richer than the lives of the animals in the first herd. It's true that the mothers in the first herd never get a chance to decoy predators to save their young, but it seems unlikely that this would make their lives any less rich than their counterparts. In order to see that this is true one only has to ask oneself if a human mother's life would be less rich if she did not get the chance to save her child from

[375] Richard Swinburne, *Providence and the Problem of Evil*, 171.

"predators" or those who would wish serious harm to her child. But this is clearly absurd. In fact, it seems that the act of rescuing one's child from serious danger, like a would-be murder, car accident or drowning, might result in post-traumatic stress rather than enrichment for a human mother. In fact my own mother still recounts the few instances that I was in some minor danger as a child with horror. If I asked my mother if missing out on these experiences would have made her life worse she would think it absurd.

Another way that the struggle against hardship might enrich the lives of animals is if it gave animals a reason to be proud of themselves. Humans tend to regard their lives with satisfaction when they overcome adversity. This is because they have accomplished something difficult. However, it does not seem very likely that animals would experience added richness through the knowledge that they are noble exemplars of their species. When the wolf pack succeeds in a particularly difficult and long hunt, the wolves do not congratulate themselves for a job well done. Most animals (except, perhaps the great apes) do not have the capacity to reflect upon their behavior and regard it with satisfaction the way that many humans do. Therefore animals do not have their lives enriched by self-congratulations when they overcome hardship.

Another way that animal lives might be made better through hardship is if it allowed animals to experience a greater variety of pleasures or goods—including non-bodily goods. Creatures that have the capacity to experience the pleasure that comes from forming attachments with others of their kind, for example, are able to experience a kind of deep satisfaction that might outweigh a great amount of bodily pain. There are two ways that suffering from natural evil might enhance the quality of relationships. The first way is if hardship provided the occasion for animals to form relationships in the first place. The scarcity of resources might force animals to form cooperative groups in order to survive. Some might argue that without the threat of hunger and

death, the wolf pack would disband (or would never form in the first place) and the animals would lose out on the great good of companionship. The second way is if pain and suffering gives the sufferer a chance to recognize the love of the caregiver or for the caregiver to recognize her love for the sufferer.

If either or both of these states-of-affairs are realized it could deepen the quality of the relationships among animals thereby adding richness to the lives of animals. However, it doesn't seem that suffering through disease, hunger, scarcity and injury are necessary conditions for developing friendship, communal bonds or relational love. It seems as if animals might still be able to form cooperative groups without scarcity, hunger and suffering. In a world without pain and suffering animals could seek companionship merely for the pleasure of being with others of their kind. In his book *The Emotional Lives of Animals*, cognitive ethologist Marc Bekoff argues that many species derive great pleasure simply from being in each other's company. Wolves, coyotes, foxes and dogs seek out the company of others just to play. Many of these associations are not prompted by necessity but by pleasure. In the book *Pleasurable Kingdom: Animals and the Nature of Feeling Good*, John Balcome observes two crows enjoying each other's company:

> During a recent trip to Assateague, Virginia I watched two fish crows (Corvus ossigragus)….They first engaged in flight play, then over the next 10 minutes, one bird (always the same one) repeatedly sidled up to the other, leaned over, and pointed his/her beak down, exposing the nape. The other bird responded by gently sweeping his/her bill through the feathers as though searching for parasites. There was every indication that they were mates or good buddies, and that their contact was as pleasurable for both giver and receiver, as a massage or caress between two humans.[376]

It seems to me that the kind of fun and companionship that the two crows had in the anecdote above could also be had in a world without pain and suffering.

[376]John Balcome, *Pleasurable Kingdom: Animals and the Nature of Feeling Good*, (London: Macmillan, 2006) in Marc Bekoff, *The Emotional Lives of Animals: A Leading Scientist Explores Animal Joy, Sorrow and Empathy—and Why They Matter*, (Novato, CA: New World Library, 2007), 55.

Swinburne might object that maybe it's the case that animal relationships are deepened through pain and suffering. Perhaps like human relationships, suffering provides an occasion to demonstrate compassion and selfless love. Consider the following story recounted by Marc Bekoff of the friendship between two dogs, Tika and Kobuk: Kobuk was an aggressive, 'talkative' dog who insisted on being first for any 'good dog activities.' Kobuk would usually push Tika aside or knock her over to get what he wanted. Bekoff writes:

> Then one day a small lump appeared on Tika's leg. It was diagnosed as a malignant tumor. Overnight Kobuk's behavior changed. He became subdued and even wouldn't leave Tika's side. Then Tika had her leg amputated and had trouble getting around. Kobuk…stopped shoving her aside and stopped caring whether she was allowed to get on the bed without him…Tika recovered and as her health grew after the amputation and operation, Kobuk became the bossy dog he'd always been....[377]

It is possible that Tika and Kobuk became more closely bonded because of this experience. While the dogs probably did not retain long-term (episodic) memories of the events, it's possible that Tika retained implicit memories of Kobuk's kindness leading to a closer relationship then they had previously. (We would have to ask Marc Bekoff about the state of their long-term friendship). However, it is absurd to say that it is better state of affairs for some animals, like Tika, to get sick so that some animals, like Kobuk, might demonstrate their care (rather than no animals getting sick at all). Imagine someone trying to make this case about human suffering: 'It is better that some spouses become severely ill or disabled so that their partners can demonstrate their compassion, patience and self-sacrifice.' Suffering is not a necessary condition for close friendship, selfless love or compassion. Don't we know of many human relationships that are rich and satisfying that do not include inordinate pain and suffering?[378] Consider Robert Audi's example: He writes, "How can a

[377] Marc Bekoff, *The Emotional Lives of Animals (*Novato, CA: New World Library, 2007) 76-77.
[378] Often in human relationships one partner is touched by the other's empathy and self-sacrifice and this serves to deepen their love and devotion. But it is doubtful that animal love functions this way.

mother give loving bedside care if the child is never sick?"[379] However, sickness is not necessary for 'loving bedside care.' Mothers of young children spend an inordinate amount of time and energy giving 'loving bedside care' to their healthy infants. Why must the child also be sick? My own best memories of 'loving bedside care' come from listening to bed-time stories when I was perfectly healthy. It seems then that illness, especially severe illness, is not necessary for the development of the virtues of selfless love or compassion.

Maybe what Swinburne has in mind is that virtues enhance the goodness of the world as a whole while not necessarily enhancing the individual lives of animals. Maybe the universe is just a better place because it contains virtuous creatures. Swinburne also endorses this view. He writes, "The world would be much the poorer without the courage of a wounded lion continuing to struggle despite its wound…"[380] On this view, even if the animal's life is not enriched by its own virtue, the world is much better for having contained the lion's courage. A world that includes individuals with the virtues of courage, compassion, temperance and magnanimity is a better world apart from any good consequences that these virtues might produce for the creatures themselves or for others. Even if one is inclined to believe that virtues, themselves, are valuable apart from any good outcome, it is not clear that the suffering that animals (or humans) endure outweighs the value a world gains by containing these animal virtues. To illustrate this, consider the following true story: In 1936 a team of four climbers attempted the first assent of the north face of Mount Eiger in Switzerland.[381] The team encountered a number of accidents on the way. Falling rock incapacitated one of the team which forced the rest to abort the climb and retreat carrying the injured climber down the face of the mountain. On the way down an avalanche struck dislodging a climber who fell

[379] Robert Audi, *Rationality and Religious Commitment,* 236.
[380] Ibid, 173.
[381] Heinrich Harrer, *The White Spider: The Classic Account of the Ascent of Eiger* (New York: Putnam, 1960).

to his death. Another climber was later smashed against the cliff face and died. The only uninjured climber, Toni Kurz, was left alone on Mt. Eiger with the originally injured team member in tow. After an unprotected night in below freezing temperatures the injured climber died. Kurz cut the dead climber loose and attempted to save himself. With one frozen hand, Kurz unraveled his rope to increase its length so that he might reach a ledge where rescuers waited. The rope was just a few meters too sort. Kurtz finally died hanging from that rope. While most of us would admire Kurz's tenacity, courage and endurance, most would also agree that the good of Kurz's instantiation of these virtues comes at too high a price. Given the suffering and death of Kurtz and his fellow climbers, it is better that they showed courage, self-sacrifice etc… than not, but this doesn't show that their suffering and death was necessary or that they outweigh the great cost at which they came. Is the world really better for all the animals who continue to struggle against death despite injuries and hunger? It seems that the good the world gains from containing virtues like endurance and courage does not outweigh their great suffering.

iii. Conclusion

Consequently Swinburne's theodicy for animal suffering fails for several reasons: First, animals can have rich satisfying lives, exciting experiences and fulfilling relationships without the pain and suffering that we have in this world. Second, the opportunity to overcome hardship does not enrich animal lives the way that it might for humans. This is because animals do not have the ability to regard their accomplishments with satisfaction the way humans do. Third, given that there is natural evil, our world is better for the courage, perseverance and sympathy it contains.

But it is questionable that the value a world gains from containing virtue outweighs the suffering that accompanies it.

Chapter Six:

The Argument from Animal Suffering and the Objection from Skeptical Theism

He may be fully convinced of the narrow limits of his understanding; but this will not help him in forming an inference concerning the goodness of superior powers, since he must form that inference from what he knows, not from what he is ignorant of…You are obliged, therefore, to reason with him merely from the known phenomena, and to drop every arbitrary supposition or conjecture.
--David Hume

i. An Introduction to Skeptical Theism

Skeptical theists are skeptical about our ability to make all-things-considered judgments about the way the world ought to be given the existence of an omniscient, omnipotent and perfectly good Being. Consider the particular evil experienced by William Rowe's hypothetical fawn that "is trapped, horribly burned, and lies in terrible agony for several days before death relieves its suffering."[382] It might seem to some that if an omniscient, omnipotent and perfectly good Being exists, then we would not expect to see utterly pointless (and therefore morally unjustified) instances of evil. However the skeptical theist argues that our cognitive position is limited such that even though the fawn's suffering might seem pointless to us, we are in not in a position to know that this evil is probably pointless—we are not in a position to know that God doesn't have a morally sufficient reason for permitting the fawn's suffering. As Alvin Plantinga wryly comments, "there is no reason to think that if God *did* have a reason for permitting the evil in question, we would be the first to know."[383]

[382] William Rowe, "The Problem of Evil and Some Varieties of Atheism," *American Philosophical Quarterly* 16, (1979): 225-41, reprinted in *The Evidential Argument from Evil*, ed. Daniel Howard-Snyder, (Bloomington, IN: Indiana University Press), 4.
[383] Alvin Plantinga, "Epistemic Probability and Evil," *The Evidential Argument from Evil*, Ed. Daniel Howard-Snyder, (Bloomington, IN: University of Indiana Press, 1996) 70.

William Alston offers the following analogy to illustrate why the skeptical theist believes that one is not warranted in concluding that any evil is gratuitous, pointless or morally unjustified: He explains that our knowledge of God's reasons for allowing certain instances (or types) of evil is similar to our knowledge of a chess master's reasons for making certain moves in a chess game. Alston writes:

> Having only the sketchiest grasp of chess, I fail to see any reason for Karpov to have made the move he did at a certain point in a game. Does that entitle me to conclude that he had no good reason for making that move?"[384]

The answer to Alston's rhetorical question is undoubtedly meant to be a resounding no: Because Karpov's knowledge of chess is so far above our own, we are not justified in concluding that Karpov probably has no good reason for a given move just because we can see no good reason for a given move. This sort of reasoning—reasoning from our inability to see some reason to the conclusion that there is no reason—relies on an inference that Stephen Wykstra has aptly named the 'noseeum inference.'[385] According to Wykstra, we are not justified in concluding that Karpov has no good reason for a given chess move just because we 'no-see-um' ; similarly, we cannot say that God probably has no good reason for allowing a given type of evil just because we can't imagine or 'see' what that reason might be.

Wykstra points out that Rowe's 1988 version of the evidential argument from evil relies on a noseeum inference.[386] Rowe's argument can be paraphrased as follows:

1) No good we know of justifies an omnipotent, omniscient, perfectly good being in permitting the fawn's suffering (E1)
2) Thus it is likely that no good at all justifies an omnipotent, omniscient, perfectly good being in permitting the fawn's suffering (E1).

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[384] William P. Alston, "Some (Temporarily) Final Thoughts on Evidential Arguments from Evil," *The Evidential Argument from Evil*, Ed. Daniel Howard-Snyder, (Bloomington, IN: University of Indiana Press, 1996), 317.
[385] Stephen Wykstra, "Rowe's Noseeum Arguments from Evil," in Daniel Howard-Snyder, ed. *The Evidential Argument from Evil* (Indianapolis, IN: Indiana University Press, 1996), 126-150.
[386] William Rowe, "Evil and Theodicy," *Philosophical Topics* 16 (1988): 119-32.

3) If an omnipotent, omniscient, perfectly good being exists then he does not permit unjustified
4) evils like E1
C) Therefore, there probably is no omnipotent, omniscient, perfectly good being.[387]

Rowe argues that because we aren't aware of any good that justifies God's permission of the fawn's suffering, then there probably isn't any good that justifies the fawn's suffering. Wkystra argues that this particular noseeum inference (from premise 1 to premise 2) is unjustified because it violates an epistemic principle which he calls the Condition on Reasonable Epistemic Access (CORNEA).[388] CORNEA states that we would only be justified in making noseeum inferences if we would expect to see the thing (or reason, etc…) in question if it were there. For example, we would be justified in arguing that there probably is no dog in the garage, if I can see no dog in the garage, but I would *not* be justified in arguing that there are probably no fleas in the garage if I can see no fleas in the garage.[389] The CORNEA principle allows the former noseeum inference but not the latter because dogs are the sort of thing that I would expect to see if they were there, but fleas are not. Because God's reasons are more like fleas than dogs, (i.e. we would not expect to see them if they were there) Wykstra argues that Rowe is not justified in making the noseeum inference from premise 1 to premise 2.

Other skeptical theists have tried to block the inference from premise 1 to premise 2 by developing just-so stories that if true would provide a morally sufficient reason for God's permission of evils like the fawn's suffering. I have called these just-so stories, 'defenses'. For example, in Peter van Inwagen's defense from chapter one, he argues that for all we know our world with its physical laws (including forest fires caused by lightning storms) is the only metaphysically possible,

[387] William Rowe, "The Evidential Argument from Evil: A Second Look," *The Evidential Argument from Evil*, ed. Daniel Howard-Snyder, (Bloomington, IN: Indiana University Press, 1996), 263.
[388] Wykstra has updated CORNEA several times to meet objections. His latest article is: Stephen Wykstra and Timothy Perrine, "Foundations of Skeptical Theism: CORNEA, CORE and Conditional Probabilities," *Faith and Philosophy* 29, no. 4 (2012): 375-399.
[389] Stephen Wykstra,"Rowe's Noseeum Arguments from Evil," 126-150.

non-irregular way God could have created a world with higher-level sentient creatures. And, for all we know, massive irregularity could be a much greater defect than the defect of the suffering of sentient creatures. If this is true then God can't be faulted for choosing regularity over irregularity in the design of the world. Thus if van Inwagen's story is not surprising on theism, this gives us a reason to reject the first premise of Rowe's argument above because it is possible that God has a morally sufficient reason for permitting the fawn's suffering.

However, if one believes van Inwagen's defense is implausible (as I argued in chapter one), then the skeptical theist might marshal other defenses designed to block the noseeum inference. In fact, the skeptical theist might point out that there are potentially a very large (or infinite) number of possible stories any one of which, if true, would explain how God is morally justified in permitting evil. The skeptical theist argues that if one cannot rule out all actual (and perhaps, potential stories), then one is not justified in making the noseeum inference form premise 1 to 2 above.

In fact, some skeptical theists have argued that it is sufficient to point out that many of these stories including the actual account of why God allows the fawn's suffering (if there is one) would be beyond our ken. Because it is possible that we would not have access to God's real reasons for permitting the fawn's suffering, and thus might not be able to create a convincing just-so story, some skeptical theists have argued that we don't need to offer any story at all to block the noseeum inference. Michael Bergmann has argued that it is sufficient to point out that for all we know, God might have knowledge of one or more very great goods (or the prevention of worse evils) for which he allowed the fawn's suffering that are beyond our ken. For all we know, the fawn's suffering is connected in such a way to these unknown goods so that even God could not achieve these goods without permitting the fawn's suffering. If this were the case then God would be morally justified in permitting the fawn's suffering. Bergmann argues that the following three

propositions are plausible, commonsense principles that give us good reason to reject the noseeum inference in Rowe's argument above:

> ST1: We have no good reason for thinking that the possible goods we know of are representative of the possible goods there are.
> ST2: We have no good reason for thinking that the possible evils we know of are representative of the possible evils there are.
> ST3: We have no good reason for thinking that the entailment relations we know of between possible goods and the permission of possible evils are representative of the entailment relations between possible good and the permission of possible evils.[390]

Because humans are not epistemically situated such that we would know if our awareness of goods represents a major portion of all possible goods (and evils) and entailment relations between them or if it represents only a very small portion of all possible goods (and evils) and the entailment relations between them—we have no idea whether our knowledge of goods and evils and the connections between them is representative of *all* the possible goods and evils and the connections between them or just a small portion of them. Therefore, if we have reason to believe that propositions ST1 and ST2 are true, then even if we can't see how a given evil might be outweighed by some good (or the prevention of a worse evil), this does not mean there isn't some inscrutable good that outweighs the evil in question.

Proposition ST3 expresses skepticism about our ability to know that "none of the possible goods we know of that outweigh E1 stand in entailment relations we know of to E1 such that obtaining those goods would permit justifying E1." [391] For instance, we know that it is much worse for ten fawns to die in a forest fire than for one fawn to die in a forest fire. So the act of saving the ten counts as a possible outweighing good that we know of. But it seems that an all-powerful God

[390] Michael Bergmann, "Skeptical Theism and Rowe's New Evidential Argument from Evil," *Nous* 35, vol. 2 (2001): 279.
[391] Michael Bergmann, "Skeptical Theism and the Problem of Evil," *Oxford Handbook of Philosophical Theology*, eds. Michael Rea and Thomas P. Flint, (New York: Oxford University Press, 2009), 374-402.

could have saved all the deer; it was not necessary for God to sacrifice the one. But if one accepts proposition ST3, then we are basically in the dark about the 'conditions of realization'[392] between possible goods and evils that we know of. For all we know there is some inscrutable connection between the sacrifice of the one deer and the saving of the ten that makes the sacrifice of the one necessary. In short, ST3 states we can't know that it isn't impossible for God to save the ten without sacrificing the one. Bergmann argues that if we take ST1-ST3 seriously these theses imply that God might have a perfectly good reason for permitting the fawn's suffering—a reason that is beyond our ken. If one accepts ST1-ST3 then these propositions undercut the inference from step one to step two in Rowe's argument above: Just because "No good we know of justifies an omnipotent, omniscient, perfectly good being in permitting E1" doesn't mean that "it is likely that no good at all justifies an omnipotent, omniscient, perfectly good being in permitting E1."[393] Some have argued that skeptical theists appeal to our epistemic limitations (relative to God's reasons for permitting evil) amounts to a total refutation of the probabilistic version of the problem of evil. In fact some skeptical theists believe that arguments from evil don't even succeed in establishing that evil provides some *prima facie* reason against belief in God.[394]

I will argue that even if one admits that ST1, ST2 and ST3 are plausible, we are still justified in believing that animal suffering makes it unlikely that an omnipotent, omniscient, benevolent God exits. In other words I will argue that my Hume-inspired argument is immune from the skeptical theist's criticisms.

[392] William Alston, "Some (Temporary) Final Thoughts on Evidential Arguments from Evil," 319.
[393] William Rowe, "The Problem of Evil and Some Varieties of Atheism," 4.
[394] Michael Bergmann, "Skeptical Theism and the Problem of Evil," 387-88.

1. Skeptical Theism and the Hume-Style Argument from Evil

Skeptical theism was initially developed as a response to Rowe-style arguments[395] that appeal to our intuition that there is probably no God-justifying reason for the permission of certain horrendous evils. In effect, Rowe-style arguments are arguments from failure of theodicy or our failure to find some God-justifying reason for E. However the skeptical theist objects via ST1-ST3 (or CORNEA) that we have no reason to think we would be able to discern God's morally sufficient reason for permitting E (if he had one) and thus the skeptical theist blocks Rowe's inference from step one to step two. As we saw above, this is because humans are not omniscient while God is—we cannot be sure that we can conceive of every good and evil (and the entailment relations between them).

Hume-style arguments from evil, on the other hand, are not vulnerable to the skeptical theist's objections because Hume-style arguments do not "rely, either explicitly or implicitly, on a premise asserting that an omnipotent and omniscient being would probably not have a morally sufficient reason to permit certain facts about good and evil."[396] Instead, my Hume-style argument focuses on the best explanation for the distribution of good and evil.

My argument is as follows where 'HI' is 'the hypothesis of indifference', 'T' is 'theism', '>!' stands for 'many times greater than', '≤' less than or equal to, 'Pr' is the 'epistemic probability[397] of' and E is 'the collected evidence (E_1 & E_2 & E_3) of animal suffering' that I have presented in this dissertation.

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[395] The 1988 and 1991 versions of Rowe's inductive arguments from evil are slightly different from Rowe's 1979 argument from evil. The 1988 and 1991 arguments can be paraphrased as follows: (1) No good we now of justifies an omnipotent, omniscient, perfectly good being in permitting certain evils; therefore, it's probable that (2) no good at all justifies an omnipotent, etc. god in permitting certain evils; therefore, its probable that (C) there is no omniscient, omnipotent, perfectly good God.

[396] Paul Draper, "The Skeptical Theist," 178.

[397] I understand epistemic probably as the degree to which evidence supports a hypothesis or the degree to which a rational person would assent to a hypothesis based on the evidence available to him or her.

1. All educated adult persons living in our time should believe that E is true.
2. Pr(HI/B) ≤ Pr (T/B)
3. Pr(E/HI & B) >! Pr(E/T & B)
4. If 1, 2 are true, then educated adult persons living in our time should reject classical theism (T).
5. Therefore educated adult persons living in our time should reject classical theism T.

In English, premise one says that the prior or antecedent probability of the hypothesis of indifference (HI) on background knowledge is not less than or equal to the antecedent probability of classical theism (T) on background knowledge. Premise two says that the probability of the evidence for animal suffering on the hypothesis of indifference and our background knowledge is many times greater (>!) than the evidence for animal suffering on theism and our background knowledge. Finally if premises one and two are true (as I will argue in this dissertation) then persons in our epistemic position should reject classical theism.[398]

Since the first hypothesis (HI) is inconsistent with the second hypothesis (T) and allegedly explains the facts much better than T, then it follows that it is *prima facie* more reasonable to believe the stronger explanation, HI, over the weaker one, T --"one would have a *prima facie* good reason to believe that this alternative hypothesis is more probable than theism and hence that theism is probably false."[399]

i. Michael Bergmann's Objection to the Hume-Style Argument from Evil

[398] I argue that we should reject theism rather than arguing that the hypothesis of indifference is true because theism and the hypothesis of indifference do not represent an exhaustive set of possibilities.
[399] Paul Draper, "Pain and Pleasure: an Evidential Problem for Theists," *The Evidential Argument from Evil*, 178.

In response Michael Bergmann has argued that Hume-style arguments are vulnerable to skeptical theism just as Rowe-style arguments are. Bergmann argues that in order to know that premise two or Pr(E/HI & B) >! Pr(E/T & B) is true, we need to know that the probability of the evidence on theism (Pr(E/T & B)) is lower than the probability of the evidence on the hypothesis of indifference (Pr(E/HI & B)) and to know this we would have to have some idea what the probability of the evidence on theism (Pr(E/T & B)) is. But according to Bergmann, if one has reason to think that ST1, ST2 and ST3 are plausible then the probability of the evidence on theism (Pr(E/T & B)) would be is inscrutable. This is because the probability of the evidence on theism (Pr(E/T & B)) is dependent on the likelihood of there being God-justifying reasons for the evils described in E. But according to ST1, ST2 and ST3, we are in the dark about the probability of there being God-justifying reasons for the evils described in E so, Bergmann reasons, we are completely in the dark about probability of the evidence on theism (Pr (E/T & B)).[400] Therefore, Bergmann argues, we should withhold belief about the truth of premise two—that the probability of the evidence on the hypothesis of indifference is many times greater than the probability of the evidence on theism (Pr(E/HI & B) >! Pr (E/T & B)).[401]

However, Bergman is mistaken in thinking that the considerations he introduced in ST1, ST2 and ST3 make the probability of the evidence on theism inscrutable. Here's why: The probabilities involved in my argument are epistemic probabilities or judgments about the degree of support that the evidence at hand lends my hypothesis. My argument doesn't depend on an objective assessment of the unknown realms of possible goods, evils and entailments between these. One does not need to survey these uncharted realms in order to make a judgment about what the

[400] Or more precisely we have no idea whether our knowledge of goods and evils and the connections between them is representative of all the possible goods and evils and the connections between them or just a small portion of them.
[401] Michael Bergmann, "Skeptical Theism and the Problem of Evil," 383.

evidence at hand gives us reason to believe. Although the theist might disagree about the degree to which the evidence supports (or does not support) my hypothesis, the evidence under consideration isn't emptied of its force when the skeptical theist points out that God might have a morally justifying reason for permitting the observed evils. As Paul Draper has observed "being completely in the dark about whether the probability of J [that there is a God-justifying reason for permitting observed evils] is high in some non-epistemic sense of the word 'probability' does not imply being completely in the dark about whether the epistemic probability of J is high."[402] Whatever goods, evils and entailment relations there are that might exist beyond my ken are irrelevant to my argument because my argument is based on what is reasonable to believe based on the evidence at hand. My argument does not depend on *a priori* knowledge of the entire realm of good and evil, but makes a much weaker claim based on the best inference we can make about the evidence we have available to us.

Of course as we explore the uncharted realms of good and evil and new evidence comes to light about God's reasons for permitting certain evils, the probabilities in my argument can be updated based on this new evidence. My argument is sensitive to new evidence and is therefore compatible with Bergmann's commonsense intuitions about the limits of our knowledge. My argument is only based on the evidence that we have available to us and is therefore compatible with Bergmann's commonsense intuition that "there are many things that humans don't know."[403] Therefore we can admit that ST1, ST2 and ST3 are plausible principles yet still maintain that we

[402] Paul Draper, "The Limitations of Pure Skeptical Theism," *Res Philosophica* 90, no. 1 (2013): 97-111.
[403] Michael Bergmann, "The Commonsense Problem of Evil," preliminary draft.

have reason to expect that the world would have a more favorable mixture of good over evil if a perfectly good, omniscient being were in charge.[404]

ii. Peter van Inwagen's Objection to the Hume-style argument from Evil

Like Michael Bergmann, Peter van Inwagen also argues that we are not justified in making the probability assessments that are necessary for the success of Hume-style arguments from evil. Peter van Inwagen argues that the theist who wishes to refute to the Hume-style argument from evil has two approaches open to her:

> …a theist who wishes to be reasonable must…either refute the strong *prima facie* case for the thesis that [the atheologian] correctly represents the relative sizes of the region [in logical space of] HI & [E] and the region theism & [E], or the theist must accept the [atheologan's argument] and present an argument for theism, an argument for the conclusion that *a*[405] falls within theism.[406]

In other words, the theist who wants to refute a Hume-style argument from evil needs to argue that either (i) the atheologian is mistaken in thinking that E is *prima facie* more plausible on HI than it is on T or (ii) that our reasons for believing that God exists outweigh the strong *prima facie* grounds we have for preferring HI to T. Van Inwagen rejects the second option as this would require presenting a very strong case for the truth of theism and van Inwagen concedes that "even weak arguments for theism (as opposed to arguments for the existence of a designer of the world or a first cause or a necessary being) are in short supply."[407] Therefore, in order to refute the strong *prima facie* case made by the defender of the abductive argument from evil, the theist must "find a

[404] Thanks to Wes Morriston for helping me see this last point.
[405] the actual world
[406] Peter van Inwagen, "Reflections on the Chapters by Draper, Russell, and Gale," 226.
[407] Ibid, 226-27.

region of logical space *h*[408] that has the following two features: a) *h* overlaps a large proportion of theism or, in other words, *h* is plausible on theism and b) E overlaps a large proportion of theism and *h*"[409] or, in other words, h plausibly accounts for E on theism. There are two ways that a theist could do this: (1) The theist could come up with a hypothesis (*h*) or a theodicy that plausibly reconciles the existence of a perfectly good, omnipotent being with the evil that we observe (E) or (2) the theist could adopt a different strategy—the theist could tell a defensive skeptical story. Van Inwagen suggests the following:

> Suppose that one were to successfully argue that [E] was not surprising on theism—and not because [E] was 'just what one would expect' if theism were true, but because no one is in a position to know whether [E] is what one should expect if theism were true…If one could successfully argue that one simply could not know whether to expect patterns of suffering like those contained in the actual world in a world created by an omniscient, omnipotent, and morally perfect being, this would refute the evidentialist's case for the thesis that there is a prima facie reason for preferring HI to theism.[410]

Instead of constructing a theodicy, van Inwagen suggests that the theist devise a story that is *aprobable* or a story that we are not in a position to judge has a probability that is low, high or middling—stories that are "true for all anyone knows… which entail both [E] and the existence of God"[411] So for van Inwagen successful defensive story (D) must meet following two conditions:

1. D must be true for all anyone knows.
2. D should entail both the evidence under consideration and the existence of God.

In order to demonstrate what the defender of theism is trying to accomplish by constructing a defense, van Inwagen asks us to consider the following case:

> Suppose that Jane wishes to defend the character of Richard III and that she must contend with evidence that has convinced many people that Richard murdered the two princes in the Tower. Suppose that she proceeds by telling a story—which she does not claim to be true or even more probable than not—that accounts for the evidence that has come down to us, a story according to which Richard did not murder the prince. If my reaction to her story is 'For all I know, that's true. I shouldn't be at all surprised if that's

[408] *h* stands for the portion of logical space in which some defensive story is true
[409] Peter van Inwagen, "Reflections of Chapters by Draper, Russell, and Gale," 227.
[410] Peter van Inwagen, "The Problem of Evil, Air and Silence," 140.
[411] Ibid,141.

> how things happened,' I should be less willing to accept a negative evaluation of Richard's character than I might otherwise have been.[412]

Van Inwagen argues that if Jane could construct a story that accounts for the evidence, exonerates Richard and is not surprising, then this should raise reasonable doubt in the minds of Richard's accusers. If the defensive story is a good one, Richard's accusers should, at the least, withhold belief about Richard's guilt. Like Richard's defender, the theist might also respond to unfavorable evidence by constructing a defensive story—a story that is true for all anyone knows which accounts (in a non-surprising way) for the unfavorable evidence and God's existence.

What should we make of van Inwagen's defensive strategy? Is it the case that if the theist comes up with a story—a story that would exonerate God if it were true and is true for all we know—that this hypothetical story would defeat the strong *prima facie* case we have for believing that the probability of HI on the evidence is many times greater than the probability of T on the evidence? In what follows, I will answer this question in the negative. I will argue that generating a hypothetical story—even if it does meet the conditions that van Inwagen specifies is not enough to defeat my Humean argument from evil.

First, there are two ways we could interpret the statement 'true for all anyone knows'[413]:

1a) Nobody knows that ~D is true.[414]
1b) The probability of D is inscrutable—we cannot assign any probability to D.

In order for a defense to successfully block my evidential argument, the story must be inscrutable per (1b). If, on the other hand the story is true for all we know in the first sense (1a) this is consistent with D having a low probability. The fact that no one *knows* or is absolutely certain that

[412] Peter van Inwagen, "The Problem of Evil, the Problem of Air and the Problem of Silence," *The Evidential Argument from Evil,* ed. Daniel Howard-Snyder, (Indianapolis: Indiana University Press, 1996), 156.
[413] I thank Paul Bowman for pointing out this distinction.
[414] Van Inwagen has a strange definition of what it is to know. He thinks that if we are 95% convinced that D is false, we still wouldn't *know* if D is false.

a given defense is false is consistent with the defense being very implausible. (This is essentially the argument I made against Murray in chapter three. While no one knows that it's false that animals aren't Cartesian zombies, we still know that this defense is extremely implausible. Murray's neo-Cartesian defense is "true for all we know" in the first sense but fails because it is implausible.) Instead van Inwagen must come up with a story that is aprobable. The second condition states that if the story were true it would account for the evidence on theism better than or just as well as the evidence on HI. Van Inwagen argues that if such a story can be found, then the atheologian is not justified in her judgment that HI is more likely than T. However, as I argued in chapter one, we have reason to believe that van Inwagen's particular story that is meant to explain animal suffering is false, not aprobable. In fact, in this dissertation I have argued that we have reason to reject every defense that has been offered so far to as false or extremely improbable. Thus none of the stories that we have seen so far meet the criteria for a good defense. And if we have reason to believe the defense is false then if does not succeed in making us withhold belief about the relative weight of the evidence on theism compared to HI.

Although I have found no actual candidate stories in the literature on animal suffering that have survived serious scrutiny, what would happen if the skeptical theist were to come up with a story that fits van Inwagen's conditions for a good defense? Would this then defeat the *prima facie* case for preferring HI to T? In other words, is van Inwagen's *strategy* sound despite the fact that we have yet to invent a story that fits his criteria? Paul Draper has argued, rather convincingly that it is not. Draper argues that the atheologian could generate a "counterdefense" that effectively cancels out the theist's story. Consider the following case: We have two hypotheses which we will call 'Brownism' and 'Yellowism'. Browinism (B) is the hypothesis that "other things being equal, John

would much rather prefer to live in a brown house than a yellow one."[415] Yellowism (Y) is the hypothesis that "other things being equal, John would much rather live in a yellow house than in a brown one."[416] Now Draper asks us to consider the following:

> Suppose John builds himself a house and paints it yellow. Let 'E' stand for a statement reporting his choice of color. Now consider the claim that independent of the observations and testimony upon which one's knowledge of E is based, E is much more likely given yellowism than given brownism… P(E/Y) >! P(E/G).[417]

Now given this story, it seems true that given the fact that John paints his house yellow, it is much more likely that he prefers a yellow house to a brown one. But suppose the brownist offers a brownistic story or a defense: "The yellow paint that John bought was on sale; no other color was on sale; and John would rather live in a yellow house than miss a chance to save money on his paint purchase."[418] This is a good defensive story as we can imagine how it might be aprobable and it is such that the evidence on yellowism is not much greater than the evidence on the conjunction of brownism and the brownist defense (Pr (E/Y) ≈ Pr (E/B & D)).

However, Paul Draper asks whether the yellowist should throw in the towel and conclude "that we just don't know whether or not P(E/Y)>! P(E/B)?" No, the yellowist can marshal a counterdefense. The yellowist can tell a story that effectively cancels out the brownists story: "The yellow paint John bought was not on sale; there was, however, a sale on brown paint; and John had a very strong desire to save money on his paint purchase."[419] The yellowist's counterdefense would be successful just in case we have no more reason to believe the brownist's story on the defense than we do to believe that the yellowist's story is true.

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[415] Draper, "The Skeptical Theist," 182.
[416] Ibid, 182.
[417] Ibid.
[418] Ibid.
[419] Ibid.

It seems to me that Draper is right about this—that for every story the theist constructs, the atheologian also might construct a counter-story that effectively cancels out the opposition's skeptical story. Here is an example: let us suppose that Michael Murray has proposed the following defensive story and that it is aprobable—we do not know that it is false (contrary to what I argued in chapter three): "For all we know, animals do not feel pain when they squeal or writhe after an aversive stimuli is applied." The atheologian might just tell a counter story. The atheologian might just say: "For all we know, animals feel much more pain than we would suppose when they squeal or writhe after an aversive stimuli is applied." This counter story would effectively cancel out the theist's story. If, contrary to fact, each of the stories were aprobable, then we would have no more reason for thinking that the first story represents the actual world any better than the second story. So we would have no reason to prefer the first story over the second.

Finally, I would like to point out that van Inwagen's argument gets much of its force from his comparison of the skeptical theist's strategy to the strategy that a defense attorney employs in a court of law. In a criminal court, we give the defendant the benefit of the doubt such that if we can come up with an alternate account of how things might have happened, an account that is "true for all we know", is not surprising and if it were true would account for the evidence, then the jury is obligated to return a not guilty verdict. In effect the burden of proof in a court of law is such that constructing a skeptical story would successfully block the *prima facie* inference that the evidence on Richard's guilt is more likely than the evidence on Richard's innocence. But the dialectical situation of the atheologian and the theist is not analogous to the prosecutor and defense. There are two ways that van Inwagen's example is disanalogous. When we are assessing the evidential argument from evil, we are trying to judge how likely the hypothesis is on the evidence. This is importantly different from the way the evidence is assessed in a criminal court of law. The jurors

are not being asked to determine how likely it is that the defendant is guilty. For instance, it may be 75% likely that the defendant is guilty and therefore it would be reasonable to believe that the defendant is guilty. But a 75% degree of certainty still leaves room for reasonable doubt so the jury is obligated to return a not-guilty verdict. In a court of law there are important reasons why we place the burden of proof on the prosecutor: it is much worse for us to be wrong about the defendant's argument than it is for us to be wrong about the prosecutor's argument—it is worse for a innocent person to be found guilty (and punished) than it is for a guilty person to go free. This is why a story that is true for all we know that explains the set of facts in terms of the defendant's innocence at least as well as on his guilt is sufficient for a not guilty verdict. But there is no parallel reason (or at least van Inwagen hasn't supplied us with a parallel reason)[420] for assigning the burden of proof to the atheologian. Therefore, van Inwagen's defensive strategy isn't reasonable on these grounds alone.

iii. Conclusion

Michael Bergmann has called skeptical theism the "epitome of common sense." He writes:

> It's very easy to see how commonsensism can be combined with some sorts of skepticism. This is because commonsensism doesn't assert that humans are omniscient. Instead, it allows, indeed insists, that there are many things that humans don't know even if there are also many things that they do know. There's nothing remarkable about a view that says we know some things and we don't know others. This double claim is itself the epitome of common sense. [421]

[420] Perhaps Doug Geivett provides us such a reason in the following article: R. Douglas Geivett, "A Pascalian Rejoinder to the Presumption of Atheism," *Journal for the Critical Study of Religion* 2, No. 2 (1987): 19-35.

[421] Michael Bergmann, "Commonsense Skeptical Theism," *Science, Religion, and Metaphysics: New Essays on the Philosophy of Alvin Plantinga*. eds. Michael Rae and Kelly James Clark. Oxford: Oxford University Press. forthcoming.

However we don't have to disagree with Bergman that that humans are very limited creatures who are ignorant of much of what is out there in the vast reaches of our cosmos…we don't have to disagree that there is much beyond our ken in order to conclude that the skeptical theism is impotent with respect to the Hume-Style argument from evil.

In this chapter I argued that even if we accept Michael Bergmann's skeptical theses as the epitome of common sense my Hume-Style argument is not defeated by his skeptical considerations. This is because my probabilistic argument from evil doesn't rely on an implicit premise about our inability to discern God-justifying reasons for evil. My argument is merely that it is most reasonable to reject the hypothesis that does a poorer job at explaining the relevant data. The hypothesis of indifference is much more probable on the evidence than theism, so therefore, I have argued that it one should reject classical theism.

In this chapter I also considered Peter van Inwagen's "defensive story" defeater. I argue that every aprobable story that the skeptical theist has generated so far, the atheologian can come up with another contradictory story that is also aprobable and true for all we know. The stories effectively cancel each other out leaving us with the evidence at hand.

Chapter Seven:

Concluding Thoughts

In this chapter, I will consider one more objection to my argument from animal suffering: I will consider the possibility that animals enjoy a life of eternal bliss in the presence of God and that this somehow defeats animals' earthly suffering. Finally, I will summarize what I have accomplished and what I hope my readers will come away with.

1. Animals and the Afterlife

Surprisingly some prominent theologians have argued that animals go to heaven and that animals will enjoy 'animal goods' fitted to their nature in the afterlife. John Wesley, Martin Luther and John Calvin base the belief that animals will enjoy a life of bliss in the eternal Kingdom on Saint Paul's eschatological prediction that creation will be restored to its pre-fall state at the end of time in Romans 8:19-22. Saint Paul writes:

> For the anxious longing of the creation waits eagerly for the revealing of the sons of God. For the creation was subjected to futility, not willingly, but because of Him who subjected it, in hope that the creation itself also will be set free from its slavery to corruption into the freedom of the glory of the children of God. For we know that the whole creation groans and suffers the pains of childbirth together until now.[422]

Some theologians interpret this passage to mean that the natural world was subjected to 'slavery' and 'corruption' as a result of original sin (Gen 3:14-17[423], 5:29, Is 24:4-6[424]). Adam's moral failing

[422] Romans 8:19-22*, New American Standard Bible*.

[423] "The Lord God said to serpent, 'Because you have done this, Cursed are you more than all cattle, And more than every beast of the field; On your belly you will go, And dust you will eat All the days of your life…Then to Adam He said, '…cursed is the ground because of you; In toil you will eat of it All the days of your life.'" (NASB)

rippled throughout the entire natural order perverting the intended perfection of God's creation (Is. 11:6-9[425]) ushering in death, decay, disease, violence and strife. In Romans 8, Paul argues that God will liberate the natural order from the dominion of sinful humanity. John Wesley interprets Romans 8 to include non-human animals. He argues that animals, as part of the natural order have suffered under the reign of sin will also be delivered from the effects of sin. He writes:

> As a recompense for what they once suffered, while under the 'bondage of corruption,' when God has 'renewed the face of the earth,' and their corruptible body has put on incorruption, they shall enjoy happiness suited to their state, without alloy, without corruption, without end.[426]

John Calvin argues for a similar interpretation of Romans 8: 19-22. He writes:

> Paul does not mean that all creatures will be partakers of the same glory with the sons of God, but they will all share in their own manner in the better state, because God will restore the present fallen world to perfect condition at the same time as the human race.[427]

If it's true that animals go to heaven then this would offset much of their earthly suffering. But does postulating a heavenly afterlife for animals solve the problem of their earthly suffering? One might wonder why animals had to suffer in the first place. It is not enough for evil to be outweighed by good; the evil must also be necessary for the goods that are enjoyed. A good surgeon will choose the least painful method available to obtain his ends, not the most painful. If it is the case that God inflicts unnecessary pain on his creatures, then this implies that he is either

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[424] "The earth mourns and withers, the world fades and withers, the exalted of the people of the earth fade away. The earth is also polluted by its inhabitants, for they transgressed laws, violated statutes, broke the covenant. Therefore, a curse devours the earth, and those who live in it are held guilty…" (NASB).

[425] "And the wolf will dwell with the lamb, And the leopard will lie down with the young goat, And the calf and the young lion and the fatling together, And a little boy will lead them. Also the cow and the bear will graze, their young will lie down together, And the lion will eat straw like the ox. The nursing child will play by the hole of the cobra, And the weaned child will put his hand on the viper's den. They will not hurt or destroy in all My holy mountain, For the earth will be full of the knowledge of the Lord…" (NASB)

[426] John Wesley, "The General Deliverance," *The Works of John Wesley*, ed. A.C. Outler (Nashville, TN: Abingdon, 1985), 437-50, quoted in Michael Murray, *Nature Red in Tooth and Claw: Theism and the Problem of Animal Suffering,* (New York: Oxford University Press, 2008), 123.

[427] John Calvin, *Calvin's Commentaries: The Epistle of Paul the Apostle to the Romans and to the Thessalonians*, ed. D.W. Torrance and T.F. Torrance (London: Oliver and Boyd, 1961), 173, quoted in Michael Murray, *Nature Red in Tooth and Claw: Theism and the Problem of Animal Suffering*, 124.

malicious or impotent. As C.S. Lewis points out: "we because we are fallible, often hurt a child or an animal unintentionally, and then the best we can do is to 'make up for it' by some caress or tid-bit."[428] But God is not limited in the way that humans are. It is impossible for the omnipotent, omniscient God of orthodox theism to mistakenly hurt one of his creatures. Therefore C.S. Lewis, "it is hardly pious to imagine omniscience acting in that way—as though God trod on the animal's tails in the dark and then did the best He could about it!"[429] For this reason, there must be a necessary connection between a creature's earthly suffering and its heavenly reward. Immortality cannot be a "mere *amande* or compensation: it [should be] part and parcel of the new heaven and new earth, organically related to the whole suffering process of the world's fall and redemption."[430]

As we saw in the introduction to this dissertation if God must allow some evil in order to secure some good ends, it is not enough for the good to outweigh the evils suffered, condition (B) must also be met: the outweighing good achieved at the cost of some evil must be connected in such a way to the good so that even God couldn't have achieved the good without allowing that evil (or another evil that is just as morally serious). If animals do live on after their earthly lives one must show how their earthly suffering is a necessary condition for their achieving or enjoyment of the afterlife.

Michael Murray suggests that the capacity to experience pain might be a necessary condition for the enjoyment of a heavenly afterlife. He suggests that "the very capacities that make it possible for these animals to enjoy this beatitude might function during their earthly life in such a

[428] C.S Lewis, *God on the Dock*, 130.
[429] C.S. Lewis, *The Problem of Pain*, 145.
[430] Ibid., 145.

way that the possibility of experiencing pain and suffering is unavoidable."[431] In order to illustrate how this might be, Murray asks us to consider the following analogy:

> During a snorkeling trip I drove to a remote beach with a fantastic reef within swimming distance of the shore. The weather was brutally hot and so, before venturing from the parking area across the sand, I put on my flippers to keep my feet from being scalded by the sand. Anyone who has tried to walk with flippers knows that this is a perilous business. In order to keep from tripping over the end of the flippers and falling head first into the sand, I had to goose-step towards the water. Unfortunately, my goose-step is less fully coordinated than that of the average goose, and so I crashed to the ground and ended up with a mask full of sand. If someone had asked me why I was wearing flippers, I would have told them that it is very hard, and much less fun, to go snorkeling without them. And the reason I wore them across the sand was that I was hoping to keep my feet from burning. No doubt other footwear would have been more effective if my only aim was to cross the sand. But it wasn't. And so, in order to get to the very great good of snorkeling, I had to put myself in the position of being able to trip and fall. Notice that the flippers that I needed to snorkel did not require me to fall. They rather set up conditions that made the falling possible.[432]

In this story the very thing that enables one to enjoy the activity of snorkeling has the potential to cause pain in a non-oceanic environment. Similarly our ability to feel conscious pain and pleasure in a non-heavenly environment might sometimes mean that we experience pain. Nevertheless consciousness is a necessary condition for the experience of heavenly bliss. (In order to make sense of Murray's argument one must remember that Murray denies that it is metaphysically possible for God to have created a non-painful injury detection system). Murray argues that sentience is a necessary condition for the enjoyment of heavenly bliss but it also puts one in a position to experience pain on earth. But, as Murray points out, the reason "animals were needed to participate in the prior earthly life" is unknown. A good God would not subject his creatures to unnecessary suffering. And if there is nothing about the suffering of earthly life that is necessary for the enjoyment of eternal life, then animal suffering is gratuitous.

[431] Michael Murray, *Nature Red in Tooth and Claw: Theism and the Problem of Animal Suffering,* 127.
[432] Ibid, 127-128.

Perhaps there is something about the pain itself that increases animal enjoyment in the afterlife. Murray suggests that pain might enhance the experience of pleasure. Like an athlete who chooses to struggle through a painful workout in order to experience the euphoria that comes at the end of vigorous exercise, the pain that animals experience in their earthly existence might enhance their postmortem bliss. For instance, many athletes would still choose to endure the pain of exercise, even if scientists knew how to deliver the post-workout euphoria without the workout. This might be because, "the suffering during the workout heightens the anticipation that the athlete feels as she struggles toward the euphoric state."[433] It might also be because the "suffering provides the athlete with the sense that the resulting goods have been secured through his or her own efforts."[434] Or "the contrast between the pain and suffering of the workout and the subsequent euphoria makes the pleasurable feelings more intense than they would otherwise be."[435] Murray rejects the first two options as it is unlikely that animals are able to anticipate their postmortem existence and it is unlikely that animals do anything to earn (e.g. through soul-building or good works) the enjoyment of their afterlife or have the cognitive capacity to see the connection between their good works on earth and their heavenly reward.

The final option (e.g. that "the contrast between the pain and suffering of the workout and the subsequent euphoria makes the pleasurable feelings more intense than they would otherwise be") allows for a necessary connection between pain and pleasure. The option is plausible enough that it is one of the most popular solutions to the problem of evil given in freshman philosophy classes. However, this solution is problematic for several reasons. First this response equivocates between our ability to assign a word or concept to 'pleasure' and our ability to experience pleasure.

[433] Ibid, 126.
[434] Ibid.
[435] Ibid.

While we might not be able to define pleasure as the absence of pain, this does not mean that we could not enjoy pleasurable states. Second, this option is implausible because many people have had seasons in their lives when they were happy and did not experience much pain and suffering. When one reflects back upon these seasons of ease, one does not have the sense that these times would have been made more pleasurable if episodes of pain and suffering were interspersed along with the pleasurable moments. Third, this response implies that God and his angels require pain and suffering to make their heavenly existence complete and embracing t would come at a heavy theological cost. If the heavenly host is satisfied in the presence of God, then the experience of suffering on earth is not a necessary condition for their happiness and should not be a necessary condition for non-human animals. Therefore for these reasons it seems highly unlikely that the experience of pain would add to one's heavenly delights.

Trent Dougherty's thesis of his forthcoming book, *The Problem of Animal Suffering: A Theodicy for all Creatures Great and Small*[436], is that God enfolds animal suffering in a greater good which organically defeats their evil.[437] This greater good that outweighs and defeats evil is soul-making in the afterlife. While Dougherty has not yet had the chance to develop his argument in detail as his book isn't finished, it seems to me that Dougherty's theodicy does not explain why an animal's earthly suffering was necessary in the first place. While soul-making in an afterlife would be a very great good for non-human animals, it does not explain why God permitted his creatures to suffer in this life.

[436] Trent Dougherty, *The Problem of Animal Suffering: A Theodicy for all Creatures Great and Small*, Palgrave-Macmillan, forthcoming.
[437] Trent Dougherty, personal correspondence.

2. Concluding Remarks

In this dissertation I have argued that animal pain and suffering pose a greater problem for God's goodness than has been generally acknowledged in the history of the discussion of the problem of evil. (I postulate that this is probably because humans tend to undervalue the pains of other species.) I argue that theism is a poor fit with the evidence of animal suffering; namely, the phenomena of predation and evolution by natural selection are surprising on the hypothesis that an all-good, all-powerful, all-knowing God creates, sustains and tends to the world as is suggested by classical theism. Instead, I suggest that a truly benevolent God should have created a world without predators—a world without the bloody struggle for life that has filled the millennia with pain and suffering.

Next, I evaluate some of the best attempts to diffuse the problem of animal suffering—I survey various theodicies and defenses designed to raise the probability of theism on the evidence of animal suffering ($Pr(E/T \& T_1 \& B)$. I conclude that each of the theodicies and defenses are highly implausible and therefore fail to raise the probability of theism relative to the evidence. It seems then, that the prospects for theodicies and defenses are dim. It therefore, remains for the theist to provide some reason to believe that the God of traditional theism exist—that the prior probability of theism is many times greater than the prior probably of the hypothesis of indifference ($Pr (T/B) >! Pr(HI/B)$). Unless the theist has recourse to some very strong argument for the existence of an all-good God, I argue that based on the evidence we have of millennia of animal suffering one should not believe in the God of classical theism.

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