

Anthropocentric and Anthropomorphic Cosmology

ANTHROPOMORPHISM AND ANTHROPOCENTRISM
IN THE
COSMOLOGICAL ENTERPRISE

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Abstract

The question raised in this thesis is whether it is appropriate to criticize a cosmological theory for being anthropomorphic or anthropocentric. I answer this question through a discussion of Philo's analysis of anthropomorphism as found in David Hume's *Dialogues Concerning Natural Religion*. Philo's analysis, however, is not limited to anthropomorphism and he also presents a major challenge to cosmology in general. I use Philo's comments on cosmology to assess modern anthropocentric theories. The concluding section of the thesis deals with Philo's opposition to cosmology and shows how anthropomorphic and anthropocentric viewpoints can still be included in cosmology.

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CHAPTER ONE

In this thesis, I discuss what I refer to as the "cosmological enterprise". In particular, I discuss the restrictions placed on this enterprise. I define the "cosmological enterprise" as the project of explaining why the universe, the totality of existing things, exists and why it exists the way it does. This broad definition incorporates most of the material that normally falls under the categories of cosmogony and cosmology. The reason why I use the label "cosmological enterprise", rather than one of the more traditional labels, has to do with the two directions the project can take. First, one can seek to account for why there is a universe. This account usually involves presenting reasons why the universe came into existence or explaining the mechanics of the creation of the universe. Second, questions can be raised concerning the particular structure of the universe. In this regard, the explanation is not concerned with why there is a universe, but why the universe has the features that it does. It is possible to

ask the first question without raising the second and vice-versa.

Although the cosmological enterprise involves two distinct questions, these questions are often joined together. The reason for their merger lies in the need to justify particular theories concerning the origin of the universe. If I claimed that the reason why there is a universe is because of X, I would more than likely be called upon to support this claim and show why, for example, reason Y is not the case. In so doing, the natural source of justification for my theory would be the universe itself. I might argue that X is the case because X explains why the universe has property P. I would draw on observations of the structure of the universe to explain why it exists and, in the process, I would also explain why the universe has a particular feature.

The blending together of cosmological questions is what has prompted me to use the term "cosmological enterprise". The terms "cosmology" and "cosmogony" are often associated with one particular question, rather than a combination of questions. It is apparent from the examination of certain cosmological theories, that the question being answered is not always clear.¹ This confusion of questions is noticeable in the theories that are the focus of my study. The discipline traditionally known as "natural theology" utilizes observations of the operations of the universe as a

starting point for describing the creator and creation of the universe. I will discuss the problems that natural theology faces as well as the problems with modern scientific views that mirror theological positions.²

Although I have identified the main theme of this discussion as the cosmological enterprise, I am approaching the issue with a specific question in mind. The question I am answering is whether the description of a cosmological theory as anthropomorphic or anthropocentric is a valid form of criticism. Anthropomorphism and anthropocentrism are pejorative terms intended to indicate a flaw or weakness in a cosmological theory. These terms are generally applied when an account of the origin or structure of the universe employs a vocabulary which originates in the description of human beings and human actions. The suspicion surrounding these tendencies emerges from a belief that the language of human intentionality, such as willing, imagining and thinking, cannot be extended to non-human situations. To do so, as Wright puts it, is to "traffic in dubious metaphor"³. But why is it wrong to transfer this terminology to accounts of the existence and structure of the universe?

The negative reaction to anthropomorphism and anthropocentrism reflects a particular view of the cosmological enterprise. However, the dismissal of these theories may be based on a personal dissatisfaction with or distaste for theories that concentrate on human beings. In other words,

certain theories are disqualified because they are not the kind of theory that one likes. A rejection made in this manner does not necessarily eliminate anthropomorphic and anthropocentric theories from the cosmological enterprise. Such a dismissal is primarily an indication of how the individual prefers to view the nature of the universe.

While I personally do not accept anthropomorphic and anthropocentric views of the universe, I cannot claim that these views are completely improper. The removal of anthropomorphic and anthropocentric theories from the cosmological enterprise must be accompanied by some indication of what constitutes a correct cosmological theory. To put it another way, it is important to show what makes anthropomorphism or anthropocentrism a mistake. For the most part, however, the rejection of these views is based on the presentation of alternative hypotheses which are taken as superior. But alternative hypotheses do not necessarily expose any conceptual problems which might weaken anthropomorphic and anthropocentric theories.

I will present an analysis of anthropomorphism that shows why it is not a proper answer to questions raised in the cosmological enterprise. However, this analysis creates problems for the cosmological enterprise in general and not just the variants that appear to be anthropomorphic. The analysis of anthropomorphism will then be extended to cover the issue of anthropocentrism. I argue that a rejection of

these positions, that is more than an expression of a distrust of their basic assumptions, can also be construed as a challenge to other proposed or preferred theories. My focus in this discussion is a particular branch of natural theology known as the "argument from design". Although other approaches to cosmological questions may display anthropomorphic and anthropocentric tendencies, it is easy to highlight these elements in design arguments. The bulk of my analysis evolves from an examination of Hume's *Dialogues Concerning Natural Religion*. It is through Hume's dissection of design arguments, in particular, and natural theology, in general, that the limitations of anthropomorphic cosmology are exposed.

The *Dialogues Concerning Natural Religion* proves to be an important work for this discussion. Not only does it present criticism of anthropomorphism, it also contains a theological response to the problem. Generally, anthropomorphism is associated with religious arguments intended to reveal the nature of God. In this regard, anthropomorphism seems to be an unavoidable topic in the *Dialogues* where the "question is not concerning the being but the nature of God"⁴. Anthropomorphism is more than likely to be introduced when a description of God, rather than a proof of his existence, is being presented.

When an attempt to describe God shows him to possess attributes or to behave in a fashion more commonly associa-

ted with human beings, the charge of anthropomorphism is raised. It is believed wrong to describe God as similar to human beings or to endow him with human qualities. But why, in the religious context, does anthropomorphism become a negative aspect of a theory? After all, theistic positions often claim that human beings are created in God's "image", implying a connection between God's nature and our own. What makes this connection a defect in anthropomorphic cosmology?

The religious dissatisfaction with anthropomorphism arises from a concern over exactly which image should be taken as primary. The dispute is over which "vision" of God should be endorsed. The theistic response is limited because it only censures anthropomorphism because it creates an image of God that is not preferred or intended. Demea, in the *Dialogues*, presents a case along these lines when he defends religious orthodoxy against the heresy of anthropomorphism. Demea states that:

it must be acknowledged that in representing the Deity as so intelligible and comprehensible and so similar to the human mind, we are guilty of the grossest and most narrow partiality.²

Anthropomorphism is the elevation of mankind to the level reserved for God. It is a reflection of conceit and arrogance to picture God as similar to human beings. In doing so, the theistic position is reversed. God is conceived in the image of man rather than man being created in the image of God.

There are two possible applications of Demea's remarks to the analysis of anthropomorphism. One position I believe to be Demea's concern and the other is a response that can be derived from this position. Demea advocates what Cleanthes describes as the view of "complete mystics"⁴, because Demea maintains that "the perfect simplicity of the Supreme Being"⁷ cannot be understood by human beings. God, from Demea's perspective, remains outside human comprehension. Even though Demea has the confidence to speak of God's "perfect immutability and simplicity"⁸, there is a definite restriction placed on how God can be known. Demea claims that:

the infirmities of our nature do not permit us to reach any ideas which in the least correspond to the ineffable sublimity of the Divine Attributes.⁹

God, therefore, must not be made "so intelligible and comprehensible" because this misrepresents the true nature of his being. In principle, human beings cannot have a detailed knowledge of God.

Anthropomorphism creates problems because it is an attempt to breach the gulf between God and human beings. When God is conceived in an anthropomorphic manner, there is a definite knowledge claim being made. The claim is that "the Author of Nature is somewhat similar to the mind of man"¹⁰. God is no longer out of reach because he can be understood as analogous in nature to human beings. More troublesome than the belief that God is knowable is a theory

that makes God knowable in terms that contradict the traditional definition of God. Cleanthes' design analogy in the *Dialogues* leads to a conclusion that God possesses an intelligence not completely foreign to that of human beings. But if Cleanthes' comparison works, then God is not immutable or simple. As Demea remarks:

What is the soul of man? A composite of various faculties, passions, sentiments, ideas; united into one self or person, but still distinct from each other.¹¹

God's proposed nature is altered by the dynamics of Cleanthes' analogy. A mind that is composite is not "somewhat similar" to a mind that is immutable and simple. The attributes of immutability and simplicity are challenged by the anthropomorphic model applied to God.

As it stands, Demea's position contains two objections to anthropomorphism. First, anthropomorphism denies that God is ineffable. Second, it makes God knowable in such a manner that the orthodox concept of God is undermined. While these objections indicate why Demea does not embrace anthropomorphism, they do not completely demonstrate why anthropomorphism is a mistake. It is only when Demea's definition of God is accepted that anthropomorphism becomes an issue. Cleanthes' description of God has not been shown to be inadequate. As a diagnosis of anthropomorphism, Demea's criticisms are limited to a disagreement over which image of God is more accurate. However, a way of deciding between competing definitions and descriptions has not been

introduced. Therefore, Demea's opposition seems to be an expression of preference concerning the image of God.

There is still another criticism of anthropomorphism that can be derived from Demea's objections. The anxiety created by anthropomorphism may stem from a suspicion that God can be "explained away" if such a position is adopted. To say God is "similar" to the human mind allows for the proposal that he is nothing more than a product of the human mind. Hume provides the groundwork for this view in the *Enquiry Concerning Human Understanding* where he writes that:

The idea of God as meaning an infinitely intelligent, wise and good being arises from reflecting on the operations of our mind and augmenting without limit, these qualities of goodness and wisdom.¹²

This passage could be interpreted as indicating how the idea of God is revealed to human beings through introspection, but, in Hume's context, it is more likely a psychological account of how this idea originates.

The conclusion could be drawn that God is not an actual existing entity. The idea of God emerges from the operations of the human mind. By emphasizing the human features of God, as anthropomorphism does, the potential exists for alternative accounts of the source of this idea. God appears similar to the human mind, because he is a product of that mind. This interpretation appears to be a case of taking the wrong image of God as primary. In this example, God is reduced to the level of fiction because he is seen as

an idea derived from operations of the human mind. The anthropomorphic definition of God presents difficulties for theism because doubts are raised concerning God's existence. The theistic objection to this problem reflects Demea's other criticisms. The source of the problem is humanity making itself "the model of the whole universe"¹³. In other words, if the human mind becomes the model for understanding God, it is possible that the above interpretation may become more convincing.

An anthropomorphic concept of God raises doubts concerning the nature of God, whether these doubts are limited to the description of his being or extend to the question of his existence. Demea concentrates on the former, with his attempt to prevent a misunderstanding of God's being. But Demea's objections are also relevant when doubt arises concerning God's existence. In this regard, anthropomorphism is perceived as a challenge to Demea's definition of God and the belief that God, so defined, does exist.

At this stage, it might appear as if an appropriate refutation of anthropomorphism has been found. The rejection of anthropomorphism is called for because it reduces God to the level of fiction. However, this criticism only applies if we are convinced that a "human-like" God must be a product of human imagination. The view that the idea of God is only a creation of the human mind seems to be as much of a speculative belief as the view that God does exist. It

is not absolutely clear how the idea of God originates and, in this regard, the psychological account is speculative. It is safe to say that the psychological account does not entirely remove the anthropomorphic concept of God from the cosmological enterprise.

Demea's position is important to the analysis of anthropomorphism for a reason other than those mentioned so far. Not only does Demea present a series of objections against anthropomorphism, he is also engaged in an activity not entirely different from what the character of Philo, in the *Dialogues*, is attempting. Philo, in his own way, rebukes those who would suggest that God can be described or known. Demea insists that the "infirmities of our nature"¹⁴ prevent an understanding of God's true being. Philo takes this position to the extreme. Not only is God beyond human comprehension, but so is any proposed creator or cause of the universe. Cosmology is problematic because it involves "speculation which so far exceeds the narrow bounds of human understanding"¹⁵. Anthropomorphism, in regard to the description of a creator, attempts to transcend the limitations of human understanding. This point is central to my analysis and I will return to it later. But it is significant that Philo's approach develops from Demea's basic observations.

Demea's objection to Cleanthes' anthropomorphism includes an association of anthropomorphism with human ar-

rogance. It is a sign of the "grossest and most narrow partiality"¹⁴ to advocate an anthropomorphic concept of God. If arrogance is perceived in anthropomorphism, it is doubly apparent in anthropocentrism. The label of anthropocentrism, attached to a cosmological theory, suggest that the theory makes humanity and its position in the universe, central to understanding the universe. A theory that places such emphasis on human beings is said to be an expression of arrogance because it assumes that human beings are more important than other things. Anthropocentrism demonstrates the same unjustified bias in favour of human beings as the "model of the universe" as anthropomorphism does.

George Greenstein, in his book *The Symbiotic Universe*, presents criticisms of anthropocentrism that are similar to Demea's objections. The defect of anthropocentrism, according to Greenstein, is that it is a religious concept and religion should be avoided when developing a theory. Greenstein may oppose religion, while Demea supported it, but they both see a pre-occupation with human beings as a shortcoming in a cosmological theory. Greenstein thinks that the espousal of anthropocentric doctrines is a reflection of a "prescientific mentality"¹⁷ indicative of religious thinking. Greenstein's criticisms of religion and anthropocentrism develop as a response to the accusation that his own theory of a mutual dependence between the universe and living things is an anthropocentric theory. In

defending his views, Greenstein states that the Scientific Revolution was a "direct frontal attack on a number of doctrines of the Christian faith"¹⁹. He concludes that the transition from Theistic to Copernican cosmology was the gradual replacement of a religious system with a scientific theory. In the process any justification for anthropocentrism was also eliminated¹⁹.

Greenstein believes that religious ways of thinking are fundamentally misguided when it comes to cosmology. In fact, Greenstein is so wary of religious thinking that he worries his own theory may have unintended consequences in the "combat against creationism"²⁰. His anxiety is demonstrated by his claim that "(n)o scientist worth his salt would tolerate a return to the prescientific mentality enshrined in notions such as creationism"²¹. The use of the term "combat" indicates that Greenstein perceives a division between science and religion. Greenstein seems to believe that only science is equipped to answer questions concerning the origin and development of the universe. Greenstein's opposition to religion and its anthropocentric doctrines is not unique. François Jacob remarks that "(i)t has been an ever recurrent problem in the natural sciences to get rid of anthropomorphism, that is, to avoid endowing various entities with human properties"²². Although Jacob is concerned with anthropomorphism and myth²³, he seems to be isolating the problem that troubles Greenstein. The pro-

gress of science has resulted from the elimination of theories that are based on a pre-occupation with humanity. Creationism, for example, is an error because it seeks to reinstate past mistakes by ignoring the conclusions established by science.

I think Greenstein is correct to challenge creationism, but I do not think that his criticisms are adequate. If science is superior to religion in all areas, this superiority must be demonstrated. The application of labels, such as "religious" or "prescientific", to particular theories does not establish the validity of alternative, "non-religious" or "scientific" theories. If I knowingly present an anthropocentric theory, the error of this theory must be shown. Since I may readily acknowledge that my theory is religious, I will not be daunted by the accusation that it is a religious theory.

Greenstein does touch briefly on how this problem can be resolved. He mentions that Darwin "dethroned humanity from its central position in the overall scheme of life"²⁴. In this case, the refutation of anthropocentrism is based on the development of a theory that is a comprehensive explanation of observed phenomena. The virtue of the theory of evolution is that it provides an explanation that does not require the postulation of a deity and that can explain the diversity of biological organisms in a detailed and extensive fashion. The biologist, Robert Haynes, describes the

advantages of the scientific approach in terms that resemble Greenstein's admiration of Darwin's contribution:

Since coherent, observationally plausible theories can account for design, in both the physical and biological domain, science offers no reason to involve the extra metaphysical baggage some would lay upon us with 'god' hypotheses.²⁹

Anthropocentrism, in this context, is rendered superfluous by the development of a theory that does not describe the development of life as the result of conscious planning. There is no reason to suppose that God has intended the universe to be suited for human existence.

The introduction of the theory of evolution into the discussion affects both anthropomorphic and anthropocentric cosmological theories. In regard to anthropomorphism, the theory of evolution suggests that the existence of a universe conducive to life does not have to depend on an intelligent creator. One of the major assumptions of the argument from design is that only a God "somewhat similar to the mind of man" is capable of creating a universe suited for the existence of human beings and other life forms. The theory of evolution proposes that the presence of life in the universe is a result of the operation of material forces unguided by a designing agent. I will return to this point when I discuss Philo's presentation of alternative accounts of design in the universe.

Anthropocentric cosmology is countered by the claim that human existence was not preplanned or predestined. The

theory of evolution argues that humanity's place in a biological hierarchy was not the result of a divine blueprint. Therefore, the belief that the universe was ordained for human benefit is highly suspect. Human beings are not necessarily "special objects of attention"²⁶. However, the replacement of an anthropocentric doctrine by a theory of evolution does not automatically expose the weaknesses of anthropocentrism itself. Traditional creationism may be undermined by Darwin's theory, but this conclusion does not entail that anthropocentrism is beyond repair. Later, I will discuss how cosmology could benefit from a "new anthropocentrism"²⁷

The development of a non-religious anthropocentrism would weaken the distinction Greenstein draws between valid scientific thinking and invalid, prescientific thinking. In order to banish anthropocentrism from the cosmological enterprise, Greenstein has to establish that anthropocentrism in cosmology is always a mistake and not just a mistake associated with religion and other "primitive" ways of thinking. The scientific methodology may normally entail a distrust of anthropocentric doctrines. The cumulative success of science inspires the view that only non-anthropocentric science can reveal the true nature of the universe. But since Greenstein has not based his refutation of anthropocentrism on a general proof of the validity of science, his rejection of anthropocentrism appears to be a reflection

of his personal preference for scientific theories. Without a demonstration of why science is always better than religion, all Greenstein has done is shown why he dislikes religious theories. We may agree with Greenstein, but that does not mean that he has presented a complete dismissal of anthropocentrism.

The other shortcoming of Greenstein's objection to anthropocentrism is the absence of a general consideration of the cosmological enterprise. A complete cosmological theory should try to account for the existence of the universe as a whole. The theory of evolution, which Greenstein presents as an alternative to anthropocentrism, is not concerned with the universe as a whole. Rather, the theory explains particular features of the observed universe, namely the development of biological organisms. It is not clear, at this stage, that other features of the universe may not call for explanations that presuppose that human existence is an essential feature of the scheme of things. I will return to this issue when I discuss the possibility of a non-religious anthropocentrism. I think, however, that it should be understood, at this stage, that the theory of evolution is not a complete explanation of the entire universe.

My remarks indicate that the theory of evolution enters into the cosmological enterprise as a proposed answer to questions concerning the particular structure of the uni-

verse. These questions are part of the cosmological enterprise, but they are not the only questions being asked. In this regard, the theory of evolution is primarily a scientific theory with limited application in the realm of cosmology. Such a description complies with Jacob's overall characterization of the aim of science.

For science does not aim at reaching a complete and definite explanation of the whole universe. It proceeds by detailed experimentation on limited areas of nature. It looks for partial and provisional answers for certain phenomena that can be isolated and well defined.²⁸

Greenstein, therefore, is taking a theory relevant to "limited areas of nature" and making it the model for determining what is a proper cosmological theory. His criticisms of anthropocentrism are limited because the theory that replaces it is itself limited in application.

Anthropocentrism can be excluded from the cosmological enterprise if it is shown that there is no evidence that can support anthropocentric cosmological theories. However, this exclusion cannot be based solely on the claim that anthropocentrism is the wrong kind of thinking. As I have argued, such a response is the expression of a preference for particular ways of thinking and can also involve the extension of theories to cover matters outside of their intended domain. The position that I believe leads to a more successful analysis of anthropocentrism and anthropomorphism argues that the nature of human experience does not allow for the acquisition of evidence to support these theo-

ries. There is something about the relationship between human beings and the universe as a whole that prevents the establishment of any particular cosmological explanation. The following chapter provides the foundation of my position through an analysis of anthropomorphism.

ENDNOTES

1. This point is relevant to my discussion of Greenstein's *The Symbiotic Universe*. (New York: William Morrow, 1988) in Chapter Three.
2. There is a great deal of similarity between the Design argument (discussed in Chapter Two) and the Strong Anthropic Principle (discussed in Chapter Three). Both use the orderly nature of the universe as a starting point.
3. Larry Wright, *Teleological Explanations*. (Berkeley: University of California Press, 1976), p. 12.
4. David Hume, *Dialogues Concerning Natural Religion*. (Indianapolis: Hackett Publishing, 1980), p. 13.
5. *Ibid.*, p. 27.
6. *Ibid.*, p. 29.
7. *Ibid.*
8. *Ibid.*, p. 29.
9. *Ibid.*, p. 27.
10. *Ibid.*, p. 15.
11. *Ibid.*, p. 28.
12. David Hume, *An Enquiry Concerning Human Understanding*. (Indianapolis: Hackett Publishing, 1977), p. 11.
13. Hume, *Dialogues*, p. 27.
14. *Ibid.*
15. *Ibid.*, p. 32.
16. *Ibid.*, p. 27.
17. Greenstein, p. 26.
18. *Ibid.*, p. 126.

19. Greenstein not only thinks that anthropocentrism is outdated religious thinking, he also thinks that it is dangerous as well. He describes, in detail, the fate of those opposed to religious dogma during the Scientific Revolution. (pp. 126-128).

20. *Ibid.*, p. 128.

21. *Ibid.*, p. 26.

22. François Jacob, *The Possible and the Actual*. (New York: Pantheon Books, 1982), p. 13.

23. Jacob, pp. 5-24.

24. Greenstein, p. 26.

25. Robert Haynes, "The 'Purpose' of Chance in Light of the Physical Basis of Evolution", *Origin and Evolution of the Universe: Evidence for Design?* ed., J. Robson. (Montreal: McGill University Press, 1987), p. 24.

26. Greenstein, p. 127.

27. In particular I will build on a position suggested by George Gale in "Anthropocentrism Reconsidered", *Human Nature and Human Knowledge*. ed., A. Donagan. (Boston: D. Reidel, 1986), pp. 231-241.

28. Jacob, p. 10.

CHAPTER TWO

I have discussed why certain objections to anthropomorphic and anthropocentric cosmology are limited in effectiveness. In the process, I mentioned that a better response can be developed from Philo's comments on anthropomorphism in the *Dialogues Concerning Natural Religion*. To understand this position, it is necessary to understand the view that inspires Philo's analysis. Philo joins Demea in criticizing Cleanthes' anthropomorphic conclusions. Demea is unable to refute Cleanthes' position because Demea limits his remarks to emphasizing that Cleanthes is mistaken and that he misrepresents the nature of God. In other words, Demea declares what the nature of God must be and this declaration is intended to stand as a refutation of anthropomorphism. Philo, at this stage, intervenes and provides the analysis of anthropomorphism that Demea is unable to develop.

Philo does not think that Cleanthes' anthropomorphism is justified. Cleanthes derives his conclusions from what Philo believes is a faulty comparison between the products of human artifice and the universe. In particular, Cleanthes compares the universe to objects that are manufac-

tured for certain purposes. His comparisons are intended to show that the universe was created in a way analogous to how human beings manufacture machines and other devices. If it is possible to demonstrate that the universe is the result of a manufacturing process, then Cleanthes believes it is also possible to conclude that there is an agent responsible for this process, namely God.

The aspect of manufactured objects that Cleanthes focuses on is that of design. Manufactured objects are said to be designed by their makers. For example, a watch¹ is able to keep track of time because of the conscious effort of the watchmaker. The watchmaker imposes order on the materials that compose the watch. He does so with a particular purpose in mind. The successful operation of the watch is also attributed to the efforts of the watchmaker.

In comparing the universe and manufactured objects, Cleanthes presents evidence intended to show that the structure of the universe is not an accidental occurrence. The natural world does not appear to be assembled in a haphazard fashion. There is too much interdependence and interaction among the components of the universe to suppose that the total system is a product of coincidence. Cleanthes exclaims, "Look round the world: contemplate the whole and every part of it: You will find it to be nothing but one great machine . . ."² A survey of the natural world, in

whole and in part, supposedly presents reasons for believing that the universe was manufactured.

The mechanical operation of the universe is viewed as sufficient for establishing that there is an intelligent designer responsible for the creation of the entire universe. Cleanthes concludes that the universe was produced by an intelligent agent, even though the creation of the universe is not something that has been observed. Cleanthes uses the example of the human eye to support his case:

Consider, anatomize the eye; survey its structure and contrivance, and tell me, from your own feeling, if the idea of a contriver does not flow in upon you with a force like that of a sensation.³

An examination of the eye, in isolation from the rest of the universe, is taken as a powerful proof that the structure of the universe is the product of intentional activity.

The strength of Cleanthes' conclusion that the universe was manufactured by an intelligent agent, depends on the number of similarities there are between the universe and manufactured objects. The more the universe resembles a machine, the stronger the conclusion that the universe was created in the same way. The following passage indicates that Cleanthes believes there are more than enough similarities to justify his conclusion:

The curious adapting of means to ends, throughout all nature, resembles exactly, though it much exceeds, the productions of human contrivance; human design, thought, wisdom and intelligence.⁴

An anthropomorphic concept of God is a natural extension of this analogy. Since the comparison is between the universe and the products of human artifice, there is an implication that the creator of the universe is endowed with human attributes. God is seen as "human-like" because his works are described as being similar to those of human beings. Cleanthes is aware of the consequences of his analogy. He asserts that only an anthropomorphic concept of God can make sense of the ascription of intelligence to God. In response to Demea's claim that God cannot be described as similar to the human mind, Cleanthes states that:

A mind whose acts and sentiments and ideas are not distinct and successive, one that is wholly simple and totally immutable, is a mind which has no thought, no reason, no will ... or, in a word, is no mind at all.⁶

For Cleanthes, any attempt to describe God as having mental states involves depicting God as being similar to human beings.

Philo exploits Cleanthes' own "rules of analogy"⁶ to challenge the conclusion that God is "somewhat similar to the mind of man, though possessed of much larger faculties ..."⁷. Philo insists that "much larger faculties" cannot be construed as a "claim to infinity in any of the attributes of the Deity"⁸. The rule of analogy that Philo refers to in making this claim is that "Like effects prove like causes"⁹. According to Philo, the effect in question, the universe, does not establish the existence of an infinite cause. The

analogy is based on the observation of features in the natural world. Individual observations of machine-like operations in the world do not demonstrate that their cause is infinite. God may require "much larger faculties" to create the universe, but observation does not indicate that God must be infinite. Even if it is assumed that the universe is infinite, the comparison that Cleanthes makes is between the universe and things that are obviously finite in nature. Human beings and the products of human artifice are not things that are described as infinite. The analogy cannot establish the existence of an infinite creator.

Philo raises similar points concerning the ascription of perfection to God. He argues that if the comparison between manufactured objects and the universe justifies any conclusion concerning God, it is the conclusion that God is finite and imperfect¹⁰. Philo also presents reasons for why it is tempting to think that there is more than one Deity responsible for the creation of the universe. Most manufactured objects require the input of more than one person¹¹. Therefore, why not suppose that more than one Deity contributes to the creation of the universe?

The cumulative effect of Philo's analysis is a challenge to Cleanthes' analogy. Cleanthes argued that the similarities between the products of human artifice and the natural world established that God is comparable to human beings and that God created the universe. Philo questions

whether these similarities really exist. The problem that emerges for Cleanthes is whether or not his analogy reveals God as Cleanthes envisions Him. God, in this context, is an all-powerful, all-knowing being capable of creating a universe that He has designed. However, these are not the attributes that Cleanthes has given God. Rather, as Philo contends, the attributes that Cleanthes gives to God are not the attributes of God, they are the attributes of human beings. The defect of an anthropomorphic concept of God, therefore, is that anthropomorphic attributes are not the only attributes being sought in God. God cannot be approached through a comparison with human beings because the logical outcome is that God is nothing more than a "large" human being. But God must be more than a human being, he must be infinite and perfect and these are not human attributes.

Philo has demonstrated why anthropomorphism is incompatible with the theistic definition of God. In the process, Philo has also undermined the use of the design analogy as a vehicle for obtaining knowledge of God. The first problem is the one that motivated Demea's objections. The second problem emerges from Philo's analysis of Cleanthes' position. The former is only a problem if a particular view of God is presupposed. The latter, on the other hand, arises from Philo's concern with the method Cleanthes employs.

Because Philo's criticisms are inspired by Cleanthes' analogy, these criticisms appear to be limited to that analogy. An anthropomorphic concept of God that is derived from analogy, may be unjustified, but only in so far as this concept of God is not supported by the analogy used. The possibility remains, however, for anthropomorphism to be reinstated in different ways. If the design analogy was abandoned, the claim could be made that an anthropomorphic God is known through revelation or introspection. In either case, Philo's criticism of analogy would have no effect because, quite obviously, no design analogy was being used. On the other hand, a design analogy could still be used to argue for the existence of anthropomorphic gods, as long as it was acknowledged that these gods are not like the god defined by traditional theism. Philo's criticisms would not apply because such a position is compatible with Philo's criticisms. Philo even suggests this version of anthropomorphism when he asks Cleanthes, "why not become a perfect anthropomorphite? Why not assert the deity or deities to be corporeal, and to have eyes, a nose, mouth, ears, etc."¹² As it stands, the analysis presented so far has not dealt with such variations in anthropomorphic thinking.

I have left the analysis of anthropomorphism at very much the same point where Greenstein left the analysis of anthropocentrism. Greenstein's objections to anthropocentrism were, in part, inspired by concerns over method. The

method that gives rise to anthropocentric doctrines is one Greenstein thinks is impermissible in cosmology. Likewise, Philo's starting point is a demonstration of why the method of design analogy is suspect in theistic cosmology. However, the anthropomorphism that results from this analogy is only one form of anthropomorphism and the design analogy is only one particular method for generating anthropomorphic conclusions.

In order to uncover a more significant treatment of anthropomorphism in Hume's *Dialogues*, a distinction must be drawn between what Philo says on behalf of Demea and Philo's own position. When Philo volunteers a response to anthropomorphism, an alliance is created between Philo and Demea. Philo's initial dissection of Cleanthes' analogy can be interpreted as a manifestation of this alliance. Philo, at one point, acknowledges the existence and function of the alliance with Demea. Philo reassures Demea that:

I argue with Cleanthes in his own way and, by showing him the dangerous consequences of his tenets, hope at last to reduce him to our opinion.¹³

Philo commences to argue from the perspective of traditional theism. In this regard, the discussion starts as a theological debate over the "nature of God"¹⁴.

The alliance between Demea and Philo turns out to be short-lived. Demea suspects that Philo maybe "a more dangerous enemy than Cleanthes himself"¹⁵. Demea's revelation results from his realization that Philo is making extreme

claims concerning religious matters. At one stage, Philo declares "that I have still asserted that we have no data to establish any system of cosmogony"¹⁶. This confession indicates that Philo's alliance with Demea is not based on complete agreement. Philo claims to be consistent throughout his treatment of cosmogony, even though he raises points that Demea finds objectionable. Philo's confession also reveals the radical nature of his approach. He is denying the existence of any evidence that supports cosmogony.

When Philo speaks of "cosmogony", he is referring to the activity of describing the origin or cause of the universe. Therefore, in regard to the distinction I drew earlier, Philo views cosmogony as limited to questions concerning why the universe exists. This interpretation is based on Philo's description of Cleanthes' argument. Cleanthes' discussion of design is intended to establish that the "universe sometime arose from something like design"¹⁷. The idea of the universe "arising" indicates that the question being asked is one of origin. The main issue under consideration is what do the particular features of the universe reveal about its initial cause.

Philo maintains that the problem with questions concerning the origin of the universe is that the creator or cause of the universe cannot be described. Human beings cannot solve the problem of why there is a universe because they do not have the data to support any particular con-

clusion. Cleanthes believes that the universe "arose" from the activities of an anthropomorphic creator but Philo contends that this doctrine lacks the appropriate evidence. The key to Philo's argument is the principle that "Experience alone can point out ... the true cause of any phenomena"¹⁰. According to Cleanthes, experience of order and purpose in the universe "points out" that an anthropomorphic God is the "true cause" of the universe. Philo questions whether human beings can describe the cause of the universe because they do not seem to have the capacity to experience the universe in the appropriate way. Without the proper experience of the universe, it is impossible to make inferences concerning the cause of its existence.

The cause or creator of the universe cannot be described, according to Philo, because human experience is "so imperfect in itself and so limited in extent and duration"¹¹. The spatial and temporal finitude of human experience destroys any chance of describing what is responsible for the existence of the universe. Underlying this view is the assumption that the nature of experience determines what is knowable. The problem of description, therefore, is a problem of knowledge. The cause or creator is unknowable and cannot be described because human beings do not have the proper experience of the universe to make such knowledge claims.

The limitations of experience impose two restrictions on the cosmological enterprise. First, the cause of the universe in itself is not something that can be experienced. This limitation holds whether the cause of the universe is viewed as part of the universe or as something outside the universe. If the cause of the universe is believed to be part of the universe, it cannot be encountered through direct experience. Human beings, due to their limited perception, do not have access to the actual event of creation. Any knowledge, in these circumstances, would be based on the observation of residual effects. Even if the cause continued to exist as part of the universe, its acting as a cause would not be perceived. If the cause of the universe is viewed as being "outside" of or independent of the universe, it still remains completely inaccessible. Human experience is limited to things that exist in space and time. A cause outside the universe is not in space and time or else it would be part of the universe. By definition, a cause outside the universe is something outside of ordinary sense experience.

The second restriction placed on the cosmological enterprise by the limits of human experience is that the universe, defined as the totality of existing things, is not something that falls within the bounds of possible experience. Philo notes that our limited sense experience "can afford us no possible conjecture concerning the whole of

things"²⁰. Any attempt at describing the cause of the universe, without direct experience of this cause, presupposes that we are familiar with the entire universe. Without access to the entire universe, we lack the data required for pinpointing the cause of the universe. To have knowledge of the cause of the universe, based on experience of the universe, the full effect of this cause must be apparent. But the universe, the effect in this case, exceeds the spatial, temporal limits of human experience. Therefore, the cause of the universe is unknowable because the complete result of this cause is unknowable.

The problems that a lack of proper experience creates for the cosmological enterprise can best be understood through a comparison with everyday activities of understanding. Philo states that "familiar objects"²¹ are not very well understood. Given this situation, he wonders how "can we decide concerning the origins of worlds or trace their history from eternity to eternity"²² if we have difficulty understanding "the coherence of the parts of a stone..."²³ The subject matter of cosmology makes it more problematic than other empirical problems. If we have trouble with objects that fall within the realm of ordinary experience, it seems unlikely that we will be more successful with the universe, which far exceeds our perceptual limitations.

The solution Philo proposes for overcoming the difficulties of cosmology is to "never look beyond the present

material world"²⁴. The desire to know the origin of the universe arouses "an inquisitive humor which it is impossible ever to satisfy"²⁵. The cause of the universe remains beyond human experience and speculation does not lead to concrete results.

The major assumption that Philo makes in this attack on cosmology is that a partial experience of the universe is insufficient to establish the cause of the existence of the universe. It could be said in response that Philo demands too much evidence. Limited experience of the universe reveals enough for "probable conjecture" concerning the universe as a whole. A complete experience of the universe would be the standard if the goal of the cosmological enterprise was certainty. Adequate accounts of the creation of the universe could be developed that show what the genuine cause of the universe is most probably. However, the difficulty facing this line of argument is that it does not mention or indicate how the adequacy of proposed accounts can be tested. It must be stressed that a theory of what causes the universe to exist cannot be bolstered by an appeal to direct experience of the cause. For this reason, all proposed accounts are conjecture. Without a way of judging their adequacy, all accounts, based on some interpretation of a partial experience of the universe, are adequate. Philo claims that without the proper experience, all

accounts of the origin of the universe are on "equal footing"²⁶.

Philo argues that an indirect knowledge of the cause of the universe depends on a selective interpretation of the available evidence. To prove his point, he extends his initial analysis to include alternative accounts of design in nature. In one way, these alternatives function as further examples of why Cleanthes' anthropomorphism is unfounded. But, in another way, these examples bring out the central problem with cosmology. These alternative accounts of design are fully compatible with the available evidence. However, Philo does not think that there is a method for deciding which of these accounts is the correct view. As long as two alternatives explain what is observed, there is no reason to accept one over the other. All conjecture concerning the cause of the universe is considered equally acceptable.

Philo deliberately presents theories that Cleanthes and Demea see as quite unusual. Philo cites, for example, the Brahmin belief that "the world arose from an infinite spider, who spins the whole complicated mass from his bowels..."²⁷. He even proposes that the universe is a vegetable that "grew" like other plants²⁸. These accounts explain observed phenomena and employ methods similar to those commonly employed in cosmology. As Hurlbutt notes, these

counter-proposals function as "reductio ad absurdum arguments"²⁹ that are:

calculated to show that...one can, by precisely the same methods of analogy and from the same kind of evidence, deduce a number of conclusions about the proposed cause of the universe that are remarkably obnoxious to those who accept traditional religious doctrines.³⁰

Hurlbutt tends to view these "reductions" as part of Philo's project of discrediting the claim that the design argument is scientific³¹. While I admit that Philo's arguments can be viewed this way, I do not think that their application has to be so narrow in its scope.

The significance of Philo's alternative hypotheses is that they are coherent accounts of how the universe may have been created. Demea and Cleanthes may prefer other theories but such preference cannot be a result of their being a more coherent account of observed phenomena. In this context, anthropomorphism is a problem because anthropomorphism is on the same level as the examples Philo presents. Therefore, it is not really important that anthropomorphism is derived from an analogy or that it is obnoxious to traditional theism. The real issue is that the evidence that supports an anthropomorphic cosmological theory is easily countered by interpretations that either view the evidence in a new way or that highlight different observations that "point out" other possible causes. Regardless of how the evidence is compiled or presented, nothing establishes anthropomorphism

as the most probable description of the cause of the existence of the universe.

The problem with anthropomorphism is the problem with cosmology in general. Since human beings cannot directly experience the cause of the universe or the universe as a whole, there is no way to assess the accuracy of proposed descriptions of the cause of the universe. Unless there is the possibility of uncovering the truth, there is no compelling reason to suppose that one description approximates the truth more than any other. Philo states, in support of his position, that:

I believe that I could, in an instant, propose other systems of cosmogony which would have some faint appearance of truth, though it is a thousand, a million to one if either your or any one of mine be the true system.³²

To put it succinctly, anthropomorphism is a mistake because it is an attempt at describing something that cannot be described.

I have reached the point where Demea's reaction to anthropomorphism can be evaluated in terms of Philo's overall analysis of cosmology. The major asset of Demea's position is that he recognizes the cognitive disadvantages of being human. Demea thinks that the "infirmities of our nature"³³ are an obstacle in the way of knowledge of God's being. Human beings are not equipped to perceive and know God's perfection. In contrast with Philo, Demea does not remain true to this conviction. Demea believes in the "a-

dorable mysteriousness of the Divine Nature"³⁴ and that "his attributes are perfect..."³⁵. Even this vague description of God involves speculation. If God is truly incomprehensible, it does not seem possible to make any claims concerning his nature. Demea's recognition of the limits of human experience does not prevent him from speculating about the unknowable.

The other strength of Demea's position is that he doubts whether the use of analogy and other indirect proofs is a productive approach to knowing God. In reaction to Cleanthes' analogy, Demea raises the following objection:

What! No demonstration of the being of God! No abstract arguments! No proofs a priori! ... Can we reach no farther in the subject than experience and probability?³⁶

Demea suspects that Cleanthes' method reduces the idea of God to the level of conjecture. The probabilistic reasoning that Cleanthes pursues leads directly to Philo's skeptical conclusions. If God is only known through empirical methods, then Demea thinks it is possible to doubt whether God exists because "the infirmities of our nature" stand in the way. However, if Demea makes claims about God's being, such as naming the divine attributes, he will encounter the same difficulties that Cleanthes does. Philo would ask how human beings can know anything about a God that they cannot experience. Demea thinks that the emphasis on experience renders all religion "totally precarious and unsatisfac-

tory"³⁷. In the end, Demea will still insist that a knowledge of things outside experience is a genuine possibility.

I have maintained that Demea prefers the traditional definition of God, but preference alone does not demonstrate the superiority of a position or the weaknesses of opposing views. Demea is not really interested in whether the anthropomorphic conception of God is a coherent description of the cause of the universe. Rather, his concern seems to be the irreligious overtones of Cleanthes' attempt to fathom God's nature. Demea sees Cleanthes' project as being almost as contemptible as "the impiety of denying his (God's) existence"³⁸. Philo also disagrees with Cleanthes, but presents a more worthwhile analysis. In the process, Philo shows that Demea's preference cannot be supported by the claim that traditional theism is the correct view. The view of God as creator that Demea subscribes to is not based on a demonstration of the inadequacy of anthropomorphism as a description of the cause of the universe.

Philo's analysis is also relevant to an assessment of the role of the theory of evolution in cosmology. The theory can explain the diversity of biological organisms without referring to God as an explanation of design. The theory of evolution, in this context, is similar to Philo's description of how the natural world could have ordered itself. Philo, at one point, suggests that the basic material of the world could be "thrown into any position by a

blind, unguided force"³⁹. The universe could have, therefore, ordered itself without the intervention of an intelligent agent. This suggestion is similar to one that Richard Dawkins makes in his book *The Blind Watchmaker*.

Dawkins claims that:

Natural selection, the blind unconscious automatic process Darwin discovered and which we know is the explanation for the existence and apparently purposeful form of all life, has no purpose in mind... It has no vision, no foresight, no sight at all. If it can be said to play the role of watchmaker in nature, it is the blind watchmaker.⁴⁰

Dawkins' portrayal of Darwin's theory is almost identical in spirit to Philo's notion of a "blind, unguided force" ordering the universe. Dawkins goes as far as to assert that the universe is ordered by "the blind forces of physics"⁴¹. The "blind watchmaker" that is responsible for "the apparently purposeful form of all life" is also the same watchmaker that gives the universe its structure.

I agree with Dawkins that the theory of evolution is a better account of design, in the biological context, than the concept of an anthropomorphic God. This conclusion may appear inconsistent with my overall position but my reasoning is based on the dual character of the cosmological enterprise. The theory of evolution explains why the observed universe has particular features. In other words, it is a "coherent and observationally plausible theory"⁴² of the development of life on this planet. However, the success of the theory in this regard does not entail that it can be

used to account for the existence of the universe as a whole. The "blind forces of physics" do not necessarily explain the existence of the universe or even why these forces work. They can explain the orderly nature of the observed universe, but they do not account for the origin of the entire universe. In this regard, the blind forces of physics answer questions concerning the structure of the universe rather than questions concerned with its initial cause.

Two problems stand in the way of an extension of the "blind forces" hypothesis to cover the question of the initial cause of the universe. First, this move challenges the role these theories play in the enterprise of science. Following Jacob, I have claimed that science does not seek a complete explanation of the entire universe⁴³. It may be worthwhile to suggest that the concept of science should be revised to include explanations of the entire universe, but this conceptual revision would not alter the fact that the theory of "blind forces" develops from limited observations and not from a complete survey of the universe. The second problem arises because of Philo's claim that conclusions concerning the universe as a whole cannot be decided by limited experiences. If the theory of "blind forces" is taken to be a replacement for the anthropomorphic concept of God, the result will be speculation concerning the creator of the universe based on inferences from limited observa-

tions. To use the theory as an account of the origin of the universe would either involve the claim that the universe designing itself explains its existence or that a universe ordered by blind forces needs no further explanation.

The first of these two options is definitely speculative in that it takes the blind forces to be the cause of the existence of the universe. The claim being made is that a universe ordered by blind forces arises from nothing more than these blind forces. A theory of this kind is on the same level as one evoking "god hypotheses"⁴⁴ because they both include a description of the cause or creator of the universe. Both hypotheses are on "equal footing" because there is no way of deciding which is a more accurate description of the cause.

The other option can be interpreted in several ways. The claim that the existence of blind forces entails no need for further explanation can be connected to the view that the universe is uncaused. However, this position is also speculative because it implies that certain alternative accounts can be eliminated. None of the proposed causes of the universe is viewed as the actual cause. There is no way of determining the accuracy of this conclusion. The other interpretation of this option is that the cause of the universe does not need to be considered in order for observed phenomena to be understood. This interpretation is compatible with Philo's analysis, which means the theory is not

really intended as an account of the existence of the universe. What this interpretation involves is an awareness of how material explanations of observed phenomena do not depend on an underlying theory of the origin of the universe. Particular features of the universe can be explained by a theory that does not go outside of the material universe. The orderly functioning of the universe can be explained by the "blind forces" hypothesis and there is no need to extend the enquiry. Any attempt to extend the theory to incorporate conclusions concerning the whole of things results in the project of explanation becoming a speculative venture.

The theory of evolution or any theory involving a "blind forces" hypothesis can be used to account for observed phenomena. But the existence of the universe, or for that matter, the blind forces themselves cannot be explained. In the process of explaining, something must be taken as given or else the process does not end. From Philo's perspective it is better to limit our concerns to the present world and eliminate unproductive speculation. In this regard, anthropomorphic cosmology is a problem because it involves describing the cause of the universe. Such descriptions cannot be supported by direct experience or a complete survey of the universe as a whole. Therefore, the defect of anthropomorphism is that it is a claim to know something that cannot be known and does not need to be known.

ENDNOTES

1. The watch is a favorite example in discussions of "cosmic design". Usually attributed to the Rev. Paley, it is referred to by almost every writer on the subject.
2. David Hume, *Dialogues Concerning Natural Religion*. (Indianapolis: Hackett Publishing, 1980), p. 15.
3. *Ibid.*, p. 25.
4. *Ibid.*, p. 15.
5. *Ibid.*, p. 29.
6. *Ibid.*, p. 15.
7. *Ibid.*
8. *Ibid.*, p. 35.
9. *Ibid.*, p. 34.
10. *Ibid.*, pp. 35-36.
11. "A great number of men join in building a house or a ship, in rearing a city, in framing a commonwealth, why may not several deities combine in contriving and framing a world?", Hume, p. 36.
12. *Ibid.*, p. 37.
13. *Ibid.*, p. 17.
14. *Ibid.*, p. 13.
15. *Ibid.*, p. 75.
16. *Ibid.*, p. 45.
17. *Ibid.*, p. 37.
18. *Ibid.*, p. 17.
19. *Ibid.*, p. 45.
20. *Ibid.*

21. *Ibid.*, p. 4.
22. *Ibid.*, pp. 4-5.
23. *Ibid.*, p. 4.
24. *Ibid.*, p. 31.
25. *Ibid.*
26. *Ibid.*, p. 17.
27. *Ibid.*, p. 45.
28. *Ibid.*, p. 46.
29. Robert Hurlbutt, *Hume, Newton and the Design Argument*. (Lincoln: University of Nebraska Press, 1965), p. 151.
30. *Ibid.*
31. See Hurlbutt, Chapter 9, pp. 135-168.
32. Hume, p. 49.
33. *Ibid.*, p. 27.
34. *Ibid.*, p. 17.
35. *Ibid.*, p. 26.
36. *Ibid.*, p. 15.
37. *Ibid.*, p. 39.
38. *Ibid.*, p. 13.
39. *Ibid.*, p. 51.
40. Richard Dawkins, *The Blind Watchmaker*. (London: Penguin Books, 1988), p. 5.
41. *Ibid.*
42. Robert Haynes, "The 'Purpose' of Chance in the Light of the Physical Basis of Evolution", *Origin and Evolution of the Universe: Evidence of Design?* ed., J. Robson. (Montreal: McGill University Press, 1987), p. 24.
43. See Chapter One.

44. Haynes, p. 24.

CHAPTER THREE

In his book *The Symbiotic Universe*, George Greenstein presents his views concerning the nature of the universe. Greenstein's book is relevant to my thesis for two reasons. First, he attempts to criticize anthropocentric cosmological doctrines. Second, his conclusions concerning the universe in general can be challenged by Philo's analysis. In what follows, I deal with Greenstein's treatment of anthropocentrism and argue that his own theory implicitly allows for anthropocentric conclusions. Although Greenstein does not embrace anthropocentrism, his own theory suffers from the weaknesses of anthropocentrism. In other words, Greenstein's views may be considered anthropocentric, but even if they are not described as such, they are open to the same criticisms. The reason why Greenstein's views meet the same fate as anthropocentric doctrines is because he is involved in the enterprise of cosmology.

Both anthropocentric and anthropomorphic cosmology invoke reference to human nature or human purpose in discussing the nature of the universe. Until now I have focussed on how anthropomorphism is the "personification" of

the cause of the existence of the universe. In anthropocentric cosmology, the structure of the universe is the main concern. The emphasis is on the apparent goal-directed nature of the universe. Human beings are taken to be the end product of the universe and the overall structure of the universe is made to accommodate their existence. Anthropocentric cosmology considers humanity to be the center of importance in the universe by postulating that the universe is designed for human beings.

Described in this way, anthropocentric cosmology does not necessarily maintain that the cause that brings the universe into existence should be compared to human beings. An anthropomorphic creator does not have to design the universe so that it is conducive to human existence. An anthropocentric universe can be described as designed without the design having to originate with an intelligent, human-like agent. George Gale, for example, sees a "new post-modern anthropocentric perspective"¹ as separating anthropocentrism and anthropomorphism. From this perspective, the creation of human beings is the overriding concern of the universe without implying that a god, with an intelligence similar to that of human beings, is responsible for the creation of the universe.

Anthropocentric cosmological doctrines answer the question of why the universe exists by reinterpreting the question. The answers presented differ from those presented in

anthropomorphic cosmology because anthropocentrism does not involve describing the creator or creation of the universe. Anthropocentric cosmology argues that the universe exists so that human beings can exist but this claim does not entail that the existence of human beings is the product of an intentional act by an intelligent agent. Rather, anthropocentric doctrines can be construed as viewing human existence as the reason why the universe exists the way it does.

The differences between anthropocentric and anthropomorphic cosmology can be illustrated through a discussion of the different senses of the word "why" as it is used in the question "why does the universe exist?". This discussion employs terminology first introduced by Aristotle. Why, in the context of anthropomorphism, asks why does the universe exist in the first place. In other words, the question is interpreted as a question concerning the efficient cause of the universe. In anthropomorphism, the intelligent, human-like agent responsible for the creation of the universe is the efficient cause. The "why" in anthropocentric cosmology is concerned with the final and formal causes of the universe. The final cause is the purpose of the universe or the goal toward which it is directed. The purpose of the universe can be described without considering the efficient cause. The universe can have a purpose or goal without this purpose or goal implying anything specific about the creator or efficient cause of the universe. In anthropocentric

cosmology, human existence is the goal of the universe and this goal may not be intended by the agent or force responsible for the initial creation of the universe.

In my presentation of anthropocentric cosmology, the discussion of the final cause of the universe is tied to a consideration of the formal cause. The formal cause is what is being sought when the "why" in the question "why does the universe exist?" is interpreted as inquiring about the structure of the universe. The formal cause accounts for the overall structure of the universe. In anthropocentric cosmology, the development of the structure of the universe is controlled by the final cause. The purpose directs the structure of the universe so that human beings can exist. The existence of human beings is, therefore, the formal and final cause of the universe.

There is a strong temptation to view anthropomorphism and anthropocentrism in cosmology as identical. This temptation arises from attempts to make sense of the ascription of a goal or purpose to the universe. Goals and goal-directed behavior are normally associated with agents capable of having an awareness of goals. Since the universe is not assumed to be a conscious agent, something else must be moving it toward its goal. God or some other intelligent agent, comparable to human beings, is introduced to account for the goal-directed nature of the universe.

In this context, Cleanthes' anthropomorphic cosmology has anthropocentric implications. God, according to Cleanthes, intends the universe to be the way it is². In the process of creation, God designs things so that human beings can exist. Despite this anthropocentric aspect, however, it is possible to employ Cleanthes' design analogy independently of a consideration of human beings. The orderly nature of the universe can be seen as evidence of design without including reference to how this order makes human existence possible.

Greenstein, on the other hand, insists that anthropocentrism is a manifestation of anthropomorphic religious doctrines. In his evaluation of a universe well-suited for life, Greenstein entertains the following questions, only to dismiss them as misguided:

...have we at last found their Watchmaker—not hiding in the petals of a flower, not lodged in the optical perfection of the eye, but ensconced within the very laws of nature themselves? Was it God who created these laws so precisely to our benefit?³

These questions are misguided because they presuppose that God can be referred to in an explanation. But it is wrong "to explain by reference to God the fitness of the cosmos for life..."⁴. Greenstein argues that the existence or non-existence of God can be addressed through empirical methods⁵. Since there is no way of verifying or falsifying claims made regarding God's existence or his relation to the

universe, reference to God cannot be incorporated into a proper explanation.

According to Greenstein, anthropocentrism assumes that an intelligent God has consciously made the universe for human beings. When the orderly nature of the universe is interpreted as "a harmony so perfectly fitted to our needs"⁴, the next step is to take this harmony as evidence for the existence of God. God, in this context, is described by Greenstein as a "Watchmaker" which makes his concept of God very similar to Cleanthes' concept of God as the intelligent manufacturer of the universe. However, the association of anthropocentrism with this concept of God can be avoided if anthropocentrism is no longer viewed as being concerned with the efficient cause of the universe. The claim that the universe exists for human beings is not necessarily the claim that God created the universe.

A new, anthropocentric cosmology would make human existence the goal of the universe without grounding this view in theological doctrines. Greenstein's dismissal of anthropocentrism as religious thinking would not apply to this new position. The starting point of a new anthropocentrism would be observations that demonstrate how remarkable it is that human beings exist. One way of challenging this view is hinted at in Greenstein's work. In defence of his own theory, Greenstein argues that the universe is goal-directed but the goal is not just the existence of human beings.

Rather, life in general is the goal of the universe.

Greenstein writes,

Nothing I am saying should be taken as implying that it was us the cosmos conspired to bring into existence. The conditions required for humanity to exist are also the conditions required for every other organism to exist.⁷

Anthropocentrism, therefore, is a mistake because the evidence presented to support it also supports non-anthropocentric theories. For Greenstein, the central concept in understanding the universe is the concept of observers, but not all observers are human. Anthropocentrism is unwarranted because there is no reason to eliminate other life forms from the class of observers.

The theory that Greenstein develops as an alternative to anthropocentrism is a version of the Anthropic Principle. The Anthropic Principle is generally concerned with how the existence of intelligent observers factors into explanations of the existence or structure of the universe. Earman notes that the Anthropic Principle "is not a single unified principle but rather a complicated network of postulates, techniques and attitudes"⁸. Despite the diverse nature of Anthropic Principles, it is standard procedure to make some basic distinctions. The basic form of the Anthropic Principle is the Weak Anthropic Principle. This is primarily a way of describing the universe. From this perspective, human existence is taken as a given feature of the universe and questions are raised pertaining to what this fact re-

veals about the universe. The answers demonstrate what features of the universe are required in order for there to be human observers of the universe. To put it another way, human beings can only exist if certain conditions are met and since human beings do exist, these conditions must have been met. The Weak Anthropic Principle highlights the features of the universe conducive to human existence.

There is nothing particularly anthropocentric about the Weak Anthropic Principle. Although human observers are used as the starting point, no claim is being made that human existence is the goal of the universe. The Weak Anthropic Principle is harmless, in this regard, because it only demonstrates the features of the universe required for human existence. Greenstein states that the Weak Anthropic Principle "cannot be doubted. It is logically true: true as only a tautology could be"⁹. The Weak Anthropic Principle does not explain anything. It only demonstrates what the universe is like and does not explain why it is this way.

Even though the Weak Anthropic Principle lacks explanatory power, it does uncover how unlikely the coming into existence of life in the universe is. There are numerous conditions that have to be met before life can exist¹⁰. Greenstein and Gale both outline how such features of the universe as the gravitational constant and the expansion rate of the universe depend on events that occurred long before life merged on this planet. If these physical fea-

tures were radically different, life would not have come about. Gale remarks that,

When all of these demands are conjoined together a 'window' of incredibly small dimensions is created through which the possibility of life must pass.¹¹

Life can only exist within narrow boundaries. A variation in the gravitational constant, for example, could have meant that no one would be here to observe the universe.

The Strong Anthropic Principle goes a step further by claiming that the existence of life is non-accidental. Barrow and Tipler define the Strong Anthropic Principle as the principle that "(t)he universe must have these properties which allow for life to develop within it at some stage in its history"¹². The universe must exercise some control over its features to ensure the development of life. The main assumption of this principle is that the existence of life requires too many conditions to be met for its development to be a result of coincidence. Greenstein borrows John Leslie's example of a firing squad to illustrate this point. Life has so many obstacles in its way that its actual development is as unlikely as a prisoner surviving a firing squad because every gun misfired¹³. Life exists because it is somehow required by the universe and not as an accident.

Life, in this discussion, refers to all biological organisms. Greenstein accepts this concept of life¹⁴ and incorporates it into a particular version of the Strong Anthropic Principle. The Participatory Anthropic Principle

holds that "Observers are necessary to bring the universe into existence"¹³. On this view, the universe would not exist without observers. Barrow and Tippler note that the Participatory Anthropic Principle tries "to arrive at a satisfactory interpretation of quantum mechanics"¹⁴. This description is consistent with Gale's summary of the physicist Wheeler's initial formulation of the principle:

As Wheeler states, "quantum mechanics must lead us to take seriously the view that the observer is as essential to the creation of the universe as the universe is to the creation of the observer."¹⁷

Greenstein's formulation of the Participatory Anthropic Principle does not differ much from the above-mentioned view. He maintains that there is a relationship of mutual dependence between the universe and observers. Greenstein chooses the biological model of symbiosis to describe his theory. He asserts that there is a unity between observers and the universe which is analogous to the "mutual interdependency of two organisms, each one required by the other and neither capable of surviving on its own"¹⁸. There is no possibility of a universe without observers or observers without a universe.

The difficulties in explaining the Participatory Anthropic Principle arise from the difficulties of explaining quantum mechanics. For my purposes, the essential aspect of Greenstein's use of quantum mechanics is the role of the observer in determining the results of observation. Without an observer, sub-atomic particles remain "unreal" in the

sense that they lack the attributes of real objects. N. Herbert summarizes this interpretation of quantum mechanics in the following way:

When we measure a certain attribute, we should not imagine that the electron actually possess this attribute. Electrons possess no attributes of their own. An electron's so-called attributes are really relations between the electron and its measuring device and do not properly belong to either.¹⁹

The act of measuring or observing brings about a synthesis of the contributions of the electron and the observer to the measurement or observation. Reality, in common sense terms, depends on the presence of both the sub-atomic particles and observers. Greenstein takes this conclusion to be true of the entire universe and not just limited to laboratory experiments²⁰. The conclusion he draws from this interpretation of quantum mechanics is that observers are an essential feature of the universe:

In this world nothing is objectively real independent of us. Rather, it is observation that brings the world into existence.²¹

The first problem I have with this conclusion stems from the ambiguity of the concept of "observers". Greenstein rejects anthropocentrism because the conditions required for human observers are also the requirements for all other organisms. In the symbiotic universe "the second partner is all organisms--life itself"²². However, it is unclear whether Greenstein believes that all organisms are capable of the observations required to confer reality upon

the universe. He does not focus on life itself, but on a particular form of life, namely life that interacts with the sub-atomic world. An anthropocentric cosmologist would maintain that Greenstein's discussion of the importance of observers is derived entirely from human examples. For example, he claims that "nothing is objectively real independent of us"²³. By "us", Greenstein does not seem to mean "all organisms". The evidence employed in the formulation of the Participatory Anthropic Principle is not accumulated by "all organisms". Greenstein assumes that all life forms contribute to the creation of the universe, but he does not present any further evidence to support this assumption²⁴. There is no description of how other living things confer reality on the universe. For all we know, we may be the only creatures capable of perceiving this "objectively real" universe. Greenstein bases his conclusions on how the universe appears to human beings and for this reason, he implicitly endorses anthropocentric thinking.

Another questionable aspect of Greenstein's position is his reliance on a concept of "mind" that places the consciousness of the observer "outside" of the quantum world. If the observer is not in some way independent of the quantum world, he would not be "objectively real" until he was brought into existence by another observer. In turn, the second observer would have to be observed as well in order to be objectively real. The result is either an infinite

regress of observers or the postulation of an observer that exists without having to be observed by something or someone else. Greenstein opts for the latter and accepts Wigner's tenuous solution to the problem. According to this view, "the regress of quantum theory terminates..." when "the nerve impulses of a brain are translated into the awareness of a mind"²³. Only a mind capable of self-consciousness can remove the threat of an infinite regress.

Greenstein is troubled by this solution. He writes that:

Wigner's 'mentalist' interpretation of quantum mechanics comes close to holding that the mind stands outside all the rest of nature.²⁴

The "mentalist interpretation" tends to be "supernatural"²⁵ in its assessment of the concept of mind. Greenstein distrusts the dualism his theory generates. The interesting question is not whether dualism is tenable but whether Greenstein thinks that all organisms have this "awareness of a mind". If all organisms have the same self-awareness, Greenstein has to explain why it is not more apparent. The "minds" of creatures such as snails and slugs do not seem to be the same as the minds of human beings. There is no obvious reason to assume that snails or slugs²⁶ have minds that are "outside all the rest of nature". For the most part, the dualism Greenstein describes usually identifies human beings as the only organisms with this "awareness of mind". There is nothing wrong with extending the concept of

mind to include other life forms. But Greenstein does not present any reasons for doing so. He tends to think that his initial dismissal of anthropocentrism guarantees that all organisms will be viewed as equal, but the observers that are central to this system appear to be human beings. Once again, Greenstein has allowed for anthropocentric conclusions to be drawn from his arguments.

Another way of criticizing Greenstein's theory is to point out that he emphasizes some particular aspect of the universe over all others. Specifying observers as essential to the universe is a problem even if anthropic cosmology is not viewed as anthropocentric. There are two ways this point can be connected to Philo's analysis of cosmology. First, it can be shown that Greenstein's "observer-centric" cosmology involves the description of things that cannot be described. Such a description involves the speculation that Philo warns against. The second criticism builds on this first problem to show that observer-centered cosmology presupposes a knowledge of the universe as a whole. But a knowledge of the universe as a whole is an impossibility, according to Philo.

Greenstein holds that the universe as a whole is a "partner" in the "symbiotic" relationship between the universe and observers. As he describes the situation, one of the partners "is a structure not previously suspected as taking part in such relationships: the universe as a

whole"²⁹. Another ambiguous concept has been introduced. It is not clear what Greenstein means by "the universe as a whole". He seems to equate the universe as a whole with the product of the interaction between observers and the quantum world. He is prepared to exclude the unobserved sub-atomic world from this definition of the universe. This interpretation is based on Greenstein's description of the conditions required for the existence of life. These conditions are features of the universe that exist after being observed. They are "objectively real". No mention is made of the unobserved, unexperienced or pre-experienced sub-atomic world "conspiring" to create life. In fact, such a claim appears to be impossible because it amounts to attributing something to things without attributes. Even Greenstein's description of the universe ignores the sub-atomic world. He writes that the universe is "a participatory universe; nothing exists unless it is observed"³⁰. Only the participation of observers brings the universe into existence.

Some confusion would be eliminated if Greenstein was clearer about the concept of existence in this discussion. He tends to define "existence" as being "objectively real". Nothing exists until it is made objectively real through observation. What Greenstein does not realize is that the sub-atomic world, independent of or prior to observation, must "exist" in some way. Existence in this case is not the

same as being objectively real. Instead, the sub-atomic world exists as a potentially real universe. There must be something that has the potential of becoming actualized through observation³¹. The universe, in this context, does exist before observation. Otherwise, the "objectively real" universe could not emerge from interaction with observers because there would be nothing with which the observers could interact.

Given that the unobserved universe "exists" before it is observed, it is clear that Greenstein is not really accounting for the existence of the universe as a whole. He instead explains how the objectively real, observed universe emerges through observation. In essence, Greenstein's theory is an explanation of why the universe appears to us the way it does. In presenting this theory, Greenstein is forced to speculate on the nature of that part of the universe that is not observed. Only through such speculation does his theory avoid being reduced to a tautology. As it stands, Greenstein's theory is that the universe brings observers into existence so that there can be a universe. However, if "universe" is defined as what is created by observation, then his theory is equivalent to the view that there can only be an observed universe if there are observers. This position differs little from the claim that if no one existed, no one could observe the universe and there would be no such thing as the observed universe. If

this is the case, then Greenstein's theory appears to be a tautology.

Greenstein takes his theory to be more than an obvious truth because the mechanics of observing the universe are more complicated than we might normally suppose them to be. When I observe the universe, I do more than look at an objectively real universe. I contribute to the universe through observation. But even if what I believe to be objectively real depends on my presence, it does not explain why the universe exists or even that the universe has to be the way it is. Rather, all that is really being said is that if I am referring to something as the universe, I have to be observing it. It is at this stage that reference to the unobserved universe becomes a factor. The universe is not a product of observers alone. The unobserved universe is what seems to be directed toward the creation of observers. The requirement that observers exist must influence the universe prior to the actual existence of observers. But if this is the case, the sub-atomic world assumes a structure and a goal in the sense that it makes possible the existence of observers. This position is not a tautology because it makes the universe a manifestation of the sub-atomic world's "conspiracy" to bring observers into existence. But Greenstein is not entitled to make such a claim because the sub-atomic world cannot have properties or be described independently of observation.

By Greenstein's own admission, human beings cannot know that the sub-atomic universe is like in itself³². The problem created by this lack of knowledge is that it does not seem appropriate to attribute goal-directed behavior to the sub-atomic world. If human beings do not know that the universe is like before observing it, it is speculative to hold that this unobservable universe is directed toward bringing observers into existence. It is unclear how human beings can understand the functioning of a sub-atomic world that defied description. Philo would be critical of Greenstein's theory at this stage because Greenstein is going beyond the limits of human perception to develop his theory. There is no way of determining whether Greenstein has described the nature of the sub-atomic world correctly because it cannot be experienced. There is no evidence that will establish the existence of observers as the goal toward which the sub-atomic world is directed.

This adaptation of Philo's analysis may appear to be a limited evaluation of anthropocentric cosmology because it relates to theories that involve some concept of an unexperienced universe that is responsible for ordering the objectively real universe. However, all anthropocentric or observer-centered cosmological theories are implicated because they invoke reference to an unobservable feature of the universe. All of these theories posit a reason for why

the universe is the way it is and this reason is not something that can be directly observed.

According to Philo, human beings lack the ability to experience the universe as a whole³³. But in order to establish that human existence is the reason why the universe is the way it is, it has to be assumed that the universe as a whole is structured for the purpose of bringing human beings into existence. Anthropocentric cosmology requires that other interpretations of the structure of the universe be eliminated. The underlying assumption is that a limited experience of the universe is adequate to establish that the universe is the way it is so that human beings can exist.

Philo would argue that alternative interpretations cannot be eliminated. In this context, Greenstein's evaluation of anthropocentrism is relevant. There is no reason for believing that human beings are more important than other life forms. The conditions that are required for human existence are the same conditions required by all other life forms with which we are familiar. The theory of evolution challenges anthropocentrism by demonstrating that human beings are not objects of "special attention"³⁴. Our place in the universe is the same as all other life forms on this planet. Anthropocentrism is, therefore, not the only available view because the evidence it utilizes supports other interpretations.

From Philo's perspective, however, Greenstein's counter-proposal is on the same level as the theories he questions. There is no reason to accept Greenstein's "observer-centrism" over anthropocentrism because there is no way of deciding which is the more accurate account. Both theories arise from equally limited experiences of the universe. The only way to establish one as the correct view is to acquire a complete knowledge of the universe. But this knowledge is unavailable due to the limits of human experience.

This conclusion can be supported by an example that is similar to Philo's "reductio" counter-proposals³⁵. The purpose of such an example is to show that the debate does not have to be limited to two positions. In other words, it is possible to introduce other interpretations of the structure of the universe into the discussion. For example, imagine that the universe is actually directed toward sustaining the life of a particular plant that exists in some unexplored area of the universe. This plant requires a certain amount of heat to survive. The heat on its planet is a little below the amount required to ensure its survival. However, the heat that is generated by life on the planet Earth eventually reaches this plant. This heat is enough to save the life of the plant. Therefore, if life did not exist on Earth, this plant would not exist. Human beings and other living things on Earth are required by the

universe so that it can sustain the life of this plant, which is the real goal of the universe.

Life on our planet could now be construed as a partial end, a "by-product" of the universe's "conspiracy" to create a certain plant. Greenstein may argue that since this plant is described as being alive, it is part of the "symbiotic unity" of life and the universe. But I have made no claims concerning the plant's ability to observe the universe, which is the important detail in Greenstein's discussion of life. The plant may also depend on us to make the universe "objectively real", so that it can exist the way other things exist. But even if this is the case, it does not mean that human beings are the final goal of the universe in this example. Human observers exist only so that this plant can exist.

The implication of this example is that there is no reason to suppose that life capable of observation is entirely responsible for the way the universe is. Human beings and other observers may contribute a great deal to the structuring of the universe and may even be a necessary component, but their role in this process may not be the real goal of the universe. When Greenstein's theory is viewed this way, the existence of observers is no more important than the physical features of the universe that ensure the development of life. In other words, the pre-

sence of life is one of the mechanisms employed by the universe to achieve its goal.

The example of the plant may be challenged on the grounds that there is no evidence that such a plant exists. Both anthropocentric and "observer-centric" conclusions are supported by evidence. There are observations that support these viewpoints. But this response misinterprets the intent of the example. The issue is not that "plant-centrism" should be adopted because it is the correct or more accurate view, but that such alternatives cannot be completely eliminated. A limited knowledge of the universe does not establish the impossibility of "plant-centrism". When it comes to judging the overall goal of the universe, the correct conclusion cannot be discovered. If there is no way of eliminating the alternatives, then judgment concerning the goal of the universe should be suspended.

This conclusion is the same as the one put forward by Philo in reference to anthropomorphic cosmology³⁴. Philo would insist that in both cases speculation should be limited to the "present material world"³⁷. Seeking a goal responsible for determining the development of the universe is the same as going outside the present material world to locate its creator or discover the nature of its creation. The goal of the universe is not something directly experienced. Instead, it is inferred from experience. When such inferences are made, there is no way of determining their

accuracy. However, particular features of the observed universe can still be explained. In this context, Greenstein's agreement with Darwin is relevant. A straightforward materialist account of certain phenomena does not necessarily involve postulating an overall goal of the universe. "The blind forces of physics"³⁸ can explain the development of biological organisms without suggesting that the universe intends this development.

Greenstein's evaluation of anthropocentrism can now be judged in a fashion similar to my previous assessment of Demea's position on anthropomorphism. Greenstein does come close to pinpointing the problem with anthropocentrism. He presents reasons for doubting that human beings are "special objects of attention"³⁹. However, Greenstein fails to see the logical outcome of his remarks. He still believes that it is possible to view life as a "special object of attention". The problem is that it is not difficult to find reasons for doubting this conclusion as well. In this regard, Greenstein and Demea are guilty of the same oversight. They think that an alternative hypothesis can supplant the cosmological doctrines they find unsatisfactory. But it seems that alternative hypotheses can also replace the positions they endorse. There is no clear way of demonstrating why one cosmological viewpoint should be selected over another. The speculative nature of the cosmological enterprise leaves all such discussions open to the same criticism.

Demea and Greenstein do not fully realize this problem and insist that the correct viewpoint can be found. Philo's analysis of cosmology indicates that such decisions amount to nothing more than expressions of preference. Only avoiding cosmology altogether can eliminate anthropomorphism and anthropocentrism.

ENDNOTES

1. George Gale, "Anthropocentrism Reconsidered", *Human Nature and Human Knowledge*, ed., A. Donagan. (Boston: D. Reidel, 1986), p. 233.
2. David Hume, *Dialogues Concerning Natural Religion*, (Indianapolis: Hackett Publishing, 1980), p. 15.
3. George Greenstein, *The Symbiotic Universe*. (New York: William Morrow, 1988), p. 189.
4. *Ibid.*
5. *Ibid.*, pp. 189-190.
6. *Ibid.*, p. 27.
7. *Ibid.*, p. 198.
8. John Earman, "The SAP Also Rises: A Critical Examination of the Anthropic Principle", *American Philosophical Quarterly*. Vol. 24 Oct. 1987, p. 307.
9. Greenstein, p. 48.
10. Both Gale (p. 256) and Greenstein (Chap. 4-8) outline these features.
11. Gale, p. 256.
12. J. Barrow and F. Tipler, *The Anthropic Cosmological Principle*. (New York: Oxford University Press, 1988), p. 21.
13. Greenstein, p. 54.
14. *Ibid.*, p. 60.
15. Barrow and Tipler, p. 22.
16. *Ibid.*
17. Gale, p. 239.
18. Greenstein, p. 198.

19. N. Herbert, *Quantum Reality: Beyond the New Physics*. (Garden City, Anchor Books, 1987), p. 161.
20. Greenstein, Chapter 13.
21. *Ibid.*, p. 222.
22. *Ibid.*, p. 198.
23. *Ibid.*, p. 222.
24. Greenstein discusses how the universe might appear to a barnacle (pp. 193-194) without presenting any reason to suppose that his description may be accurate.
25. Greenstein, p. 237.
26. *Ibid.*, p. 241.
27. *Ibid.*, p. 242.
28. We can ask the same question about barnacles. Does the barnacle have a mind capable of terminating the "quantum regress"?
29. Greenstein, p. 198.
30. *Ibid.*, p. 237.
31. Greenstein does at one point briefly characterize the sub-atomic particle as "a set of potentialities" (p. 222.), but he still does not think of it "existing", because he equates "existence" with being "objectively real". He should describe the "set of potentialities" as existing as well.
32. This conclusion is the outcome of denying that sub-atomic particles have properties independent of experience.
33. See Chapter Two.
34. Greenstein, p. 127.
35. Hume, pp. 47-48.
36. *Ibid.*, pp. 31-32.
37. *Ibid.*, p., 31.
38. Richard Dawkins, *The Blind Watchmaker*. (London: Penguin Books, 1988), p. 5.

39. Greenstein, p. 127.

CHAPTER FOUR

The impetus of the discussion in this thesis has been the need for a critical analysis that exposes the weaknesses of anthropomorphic and anthropocentric cosmological theories. Philo's analysis emerged as an alternative to the positions of Demea and Greenstein. Both Demea and Greenstein presuppose that a rival hypothesis concerning the first cause or goal of the universe is sufficient to eliminate anthropomorphism and anthropocentrism. The problem is that it is unclear why a rival hypothesis should be accepted. The virtue of Philo's analysis is that it demonstrates that there is no empirical reason for selecting one cosmological theory over another. Philo transforms the critical evaluation of anthropomorphism into an evaluation of the evidence presented in support of all cosmological theories. According to Philo, the evidence required to establish any particular theory as the correct view is unattainable. The limitations of human experience impose restrictions on what can be known about the origin or purpose of the universe.

The cumulative effect of Philo's analysis, however, is the complete rejection of the cosmological enterprise.

Philo views the cosmological enterprise as entirely speculative. Without the proper evidence the truth cannot be known. Speculation, in this context, is deemed unproductive. Engaging in such speculation arouses "an inquisitive humor which it is impossible ever to satisfy"¹. Since no answers can be given, Philo suggests that it is better to abandon cosmology altogether. The enterprise that should be given our attention is the project of explaining observed phenomena. Certain features of the universe can be explained without entertaining theories about the origin or purpose of the universe. The "present material world"² can be explained and there is no reason to extend these explanations to account for things outside the realm of possible experience. The question raised by Philo's proposal is whether speculation in cosmology should be dismissed as unproductive or insignificant. If we recognize our limitations in deciding these issues, must we admit that cosmology should be abandoned? The cosmological enterprise may be more important than Philo realizes. I intend to explore two ways that the cosmological enterprise can be preserved.

First, Philo's analysis may be circumvented by an alternative analysis of anthropomorphism that does not involve an evaluation of the evidence employed in cosmology. This analysis, if successful, would expose the flaws inherent in anthropomorphism without raising the question of evidence. The claim could be made that some cosmological theories are

worse than others and this claim would challenge Philo's belief that all cosmological speculation is on "equal footing"³. Although this analysis may seem only to delay the impact of Philo's attack on cosmology, its intent is to demonstrate that certain theories may be eliminated from consideration. This alternative to Philo does not deny that cosmology is, in essence, speculative. However, even though cosmology is speculative, it is still possible to identify certain theories as irredeemably flawed.

The flaws of certain cosmological theories are made apparent through the use of a distinction between theories that could be verified and those that could never be verified. A verifiable theory is one which could, in some imaginable way, be shown to be correct or incorrect. The theory could be verified, but at the present time, it cannot be. The obstacles that prevent verification in these cases are "technical" or "practical"⁴ in nature. The theory could be established as the correct or incorrect view if certain limitations could be overcome. We can imagine or describe how the truth could be discovered even if we are currently unable to do so⁵.

A theory that could never be verified may be hindered by more than technical or practical obstacles. The theory itself may not make sense and it is, therefore, impossible to devise a way of verifying its claims. There is no conceivable way of testing a theory that is so conceptually

confused that it lacks meaning. Toulmin, in making a similar point, notes that "once we start to imagine possible explanations and inquire what observations really serve us, we come up against grave difficulties"⁶. These difficulties are "conceptual or intellectual difficulties to do with the sense of the question itself"⁷. For Toulmin, the difficulties originate with the use of scientific terms in the wrong context. What I am suggesting, however, is that anthropomorphism could be described as a non-sensical doctrine. This is a claim that Philo does not consider. He makes no mention of anthropomorphism being incoherent or non-sensical. The question for Philo is what reason is there for choosing an anthropomorphic theory over another alternative. The stronger claim I am considering is that anthropomorphism is not a plausible view.

Claiming that God or the creator of the universe is comparable to human beings creates conceptual problems because God or the creator of the universe cannot be conceived of as human in any way. The mistake, however, is not the same one Demea and Philo accuse Cleanthes of making. I am not concerned with whether or not anthropomorphism reduces God's greatness or elevates humanity to the level reserved for God. My concern is with the attributes given to God or the creator of the universe. The attributes of human beings cannot be the attributes of the creator of the universe. The attributes of human beings can only belong to a certain

kind of thing and the creator of the universe is not that kind of thing. Anthropomorphism entails ascribing human attributes to something that is not human. Since our understanding of these attributes is limited to our associating them with human beings, we cannot understand what it means for something else to have these attributes.

This position resembles Ryle's description of "category mistakes". A category mistake results when concepts are ascribed to "logical types to which they do not belong"¹⁰. Ryle uses the example of the "Average Tax Payer"¹¹. The Average Tax Payer is not a person in the same way that John Smith is a person. There is no individual that is designated as the Average Tax Payer. Therefore, to describe the Average Tax Payer as wanting lunch or dialing the phone is a mistaken use of concepts. The Average Tax Payer cannot be described in this way.

The category mistake analysis of anthropomorphism in cosmology insists that human beings and the creator of the universe are in different categories. The question is, therefore, what is the basis of this distinction? The obvious answer comes from Philo's analysis. Human beings are part of the everyday, common sense world. We have empirical knowledge of human beings. On the other hand, the cause of the universe is outside of or beyond human experience. The category mistake is in ascribing the attributes of something existing in the spatial, temporal world to something that

transcends space and time or that does not appear in space and time.

This distinction is problematic because it effectively eliminates any comparison between the creator of the universe and physical objects. The creator of the universe can no longer be described in terms associated with the present material world. If this is the real category mistake, it does more than eliminate anthropomorphism. There are two ways of dealing with this problem. The first is to specify the particular features of human beings that cannot be ascribed to the creator of the universe. In this regard, the problem with anthropomorphism is that it uses a completely misguided comparison with particular features of the universe. This misguided comparison arises from the ascribing of human intentional states to the creator of the universe. The second approach to the aforementioned problem is to abandon all comparison between the creator of the universe and the physical universe. The next step is to describe the creator of the universe using a vocabulary reserved for the description of abstract entities existing outside of space and time. The creator of the universe cannot be described through a comparison with material objects, but that does not entail that a more appropriate comparison cannot be found.

In regard to the first approach, the contentious issue in anthropomorphism is the use of terms associated with

human intentionality. The creator of first cause of the universe cannot be described as thinking, willing, believing, etc. The category mistake is in attributing mental states to the creator of the universe. Implicit in this analysis is the assumption that human beings have enough knowledge of the creator of the universe to place it accurately in the category of things without mental states. Identifying the attributing of mental states to the creator of the universe as the conceptual problem in anthropomorphism presupposes a knowledge of what attributes the creator could have. The claim is being made that the first cause or creator of the universe cannot have certain attributes which amounts to saying that the first cause or creator cannot be this way.

The question left unanswered is how can human beings know what the attributes of the creator of the universe should be like if experience does not provide sufficient evidence to establish any particular cosmological theory as the correct view? This is the question that Philo would raise. However, evidence cannot become a factor in this analysis because the category mistake analysis developed as a way of avoiding questions of evidence. The claim that the creator of the universe cannot have human attributes requires evidence to support it. Without an indication of how evidence can be presented to establish this claim, there seems to be no reason for isolating mental states as the

source of the problem in anthropomorphism. An anthropomorphic concept of the creator of the universe appears to be no different than any other suggested first cause which is described through comparison with objects of ordinary experience. The lack of appropriate evidence makes it difficult to claim that anthropomorphism is a completely improbable view.

The real category mistake, therefore, may be to describe something that is not spatio-temporal as having the attributes of things existing in space and time. This conclusion would leave abstract entities as the only things with which the cause of the universe can be compared. However, to establish that the cause of the universe has the attributes of abstract entities, it would be necessary to know more about the cause. There is no indication of what features the cause of the universe shares with abstract entities, other than being outside of space and time. Locating the proper attributes of the creator of the universe, in this context, appears to be as difficult as it is in cases involving comparison with objects of everyday experience.

The last move in this analysis is to place the creator of the universe in a category of its own. Since it seems impossible to determine whether the creator has more in common with physical objects or with abstract entities, it belongs in its own category. Nothing meaningful can be said

about the creator of the universe using other categories, so it has to be given its own category. However, in order to make this classification, something has to be known about the nature of the creator of the universe. The category mistake analysis does not allow for such knowledge because it recognizes the speculative nature of cosmology. Therefore, claiming that the creator of the universe has its own category means that we know something about its nature, namely that it does not belong in other categories.

This conclusion points out the weakness of the category mistake analysis. Placing the creator of the universe in a category requires a certain amount of knowledge of both the creator and the category. Without this knowledge, there is no way of determining which proposed category is the proper category. Anthropomorphism is, therefore, no worse than any other cosmological theory because human beings do not know what attributes the creator of the universe must have. Even though we can claim to know that the creator of the universe must have the attribute of being able to create the universe, this knowledge is not helpful. All proposed theories concerning the creator and creation of the universe assume that the suggested cause is capable of creating the universe. The problem remains as to how it can be accurately described. Since all proposed descriptions include that the creator is capable of creating the universe, this knowledge does not eliminate any of the alternatives being considered,

including anthropomorphism. The possibility remains that the creator of the universe may have attributes similar to those possessed by human beings. Anthropomorphism is not nonsense because the category in which the creator of the universe belongs is undetermined. There is no reason why this cannot be the category of things having mental states. Only knowledge of the cause could eliminate certain theories from consideration.

The second response to Philo's analysis has the same starting point as the category mistake analysis. From this perspective, all cosmology is speculative but not all speculation is the same. This position still accepts Philo's claim that the truth concerning the origin and purpose of the universe cannot be discovered. However, certain alternatives can be eliminated from consideration, even though the truth cannot be known. The basis of this approach to cosmology is a reinterpretation of the questions raised in the cosmological enterprise. Philo characterizes these questions as misdirected empirical questions. An empirical question is one that can be resolved by sense experience or observation. The motivation behind these questions is an interest in facts. The problem with cosmology is that experience and observation do not answer these questions. In this sense, cosmological questions are not genuine empirical questions even though they appear to be empirical questions.

For this reason, Philo argues that it is better not to raise them.

The realization that cosmological questions are not genuine empirical questions can be construed as meaning that they are a different kind of question. In other words, cosmology can be seen as something other than a straightforward empirical science. The questions raised in cosmology can be viewed as part of a search for an understanding of the universe. An understanding of the universe is not the same as being aware of the exact details of the origin and development of the universe. Beliefs about these matters may be incorporated into this understanding but these details are not the major concern. The search for understanding involves trying to develop a theory that accounts for the existence of the universe as a whole. The truth concerning these matters may be unattainable but that does not prevent the acceptance of particular theories concerning the universe.

In order to preserve cosmology in the face of Philo's dismissal of cosmological questions, it is necessary to demonstrate how such speculation increases the human understanding of the universe. One approach to this problem is to argue that speculation concerning the origin or purpose of the universe provides human beings with a sense of aesthetic satisfaction brought about by the contemplation of and adherence to a cosmological theory. The expression

"aesthetic satisfaction" implies that human beings derive pleasure from thinking that the universe was created in a certain way or that it has a distinct purpose. Cosmological theories, in this context, appeal to our sense of what is beautiful or pleasant. Philo's criticism of cosmological speculation as unproductive fails to recognize the satisfaction created by such speculation. Even though human beings cannot discover the truth, they will be tempted to speculate on these matters. In the end, the theories that are accepted will reflect the tastes of the individuals involved in the speculation.

The major weakness of this position is that the emphasis on personal tastes undermines the claim that cosmological speculation results in an understanding of the universe. An individual primarily concerned with the "beauty" of a theory is not interested in providing an in-depth defence of his choice. The satisfaction provided by the theory is what matters and there is no impetus to convince others that this theory is a better explanation of the existence of the universe. A critical assessment of cosmological theories will more than likely end with the parties involved resorting to a form of relativism. Each individual will base his beliefs on what he finds the most pleasing. In such a situation, there is little indication of how this enterprise results in an improved understanding of the universe.

Closely aligned with the description of the object of cosmological speculation as aesthetic satisfaction is the idea that human beings have a natural and unavoidable curiosity about the universe and their place in it. In this context, the tendency to speculate on cosmological matters is more than an interest in finding a beautiful or pleasant theory. The important measure of a cosmological theory is how well it satisfies the individual's desire to understand the universe. The goal of cosmological speculation is psychological satisfaction rather than aesthetic satisfaction. Toulmin summarizes the psychological aspects of cosmology when he writes that it:

has reflected the need to recognize where we stand in the world into which we have been born, to grasp our place in the scheme of things and feel at home within it.¹⁰

The "need to recognize where we stand" indicates that cosmological speculation fulfills a psychological need. The emphasis on the human place in the universe makes cosmology a matter of psychological interest.

This view makes Philo's warning against speculation appear misguided. He ignores human nature. Cosmological speculation cannot be avoided because it is a natural manifestation of the desire of human beings to understand their situation. Cosmological speculation also has some practical importance. It is a worthwhile endeavor because it can satisfy certain desires. For example, human beings could be said to have a natural desire for emotional security. A

cosmological theory that describes the universe as a product of a benevolent creator could fulfill the desire for security by removing anxiety about the future. In this case, the desire to understand the universe is a reflection of the need to dispel fear. Philo's position is impractical because he does not recognize that cosmological speculation has the power to reassure and comfort human beings about things that are natural concerns.

The problem, however, with endorsing the psychological approach to cosmology is that it is unclear why cosmology should be primarily interested in making people feel comfortable. Many beliefs about the origin and purpose of the universe may appear odd or unfounded even though they may make certain individuals feel comfortable. Greenstein, for instance, dislikes anthropocentrism as a theory because it makes people too comfortable¹¹. The question is should cosmology be made into an enterprise entirely concerned with making people "feel at home" in the universe.

The answer to this question is similar to the objections raised against the view that cosmological speculation is justified as a form of aesthetic satisfaction. In both cases, theories can be accepted arbitrarily or without much intellectual consideration. Someone may happen upon a theory and accept it only because it makes him happy. According to the positions discussed so far, he needs no other reasons or arguments to support his choice. The problem is, how-

ever, that a theory selected in this fashion has the same value or significance as a theory supported by more detailed intellectual considerations. But if cosmology is genuinely described as a search for understanding, it is necessary to place greater emphasis on theories which have more intellectual support. Understanding involves a degree of intellectual effort. The person who arbitrarily selects a theory does not appear closer to understanding the universe. In fact, "feeling at home" with a theory or deriving satisfaction from it does not appear to be the same as understanding the universe.

Another problem with approaching cosmology in this way is that the psychological satisfaction created by a particular theory may be short-lived if the theory lacks intellectual support. If the motive for deciding upon a theory is psychological in nature, it might be difficult to defend the theory. Any challenge to the theory, therefore, could generate doubt in an individual who accepts the theory. The individual may not be able to answer questions regarding his theory or convince others that it is a worthwhile position to accept. If the inability to present a defence does create doubt, the individual might experience renewed anxiety. Since anxiety is one of the things that is supposed to be removed by the acceptance of a cosmological theory, the individual would not have gained anything by engaging in cosmological speculation. In fact, if the individual had

invested a great deal of hope in a particular theory, he may be worse off than he was before he adopted a particular view of the universe¹². In such a case, the disappointment created would cancel out any previous psychological benefit.

A more rewarding approach to preserving cosmology is to maintain that a cosmological theory must be concerned with the proper subject matter of cosmological questions, namely the origin and purpose the universe as a whole. The concern with the universe as a whole is what initially distinguished the cosmological enterprise from other forms of explanation. The result of stressing that cosmological speculation should be limited to the universe as a whole is the elimination of certain theories from consideration. Theories that function as explanations of particular features of the universe do not qualify as proper cosmological theories. Therefore, the only theories that are considered genuine cosmological theories are those that seek to account for the origin or purpose of the entire universe.

The relevance of this conclusion to the discussion of aesthetic and psychological satisfaction is that adopting a cosmological theory because of its initial appeal does not necessarily entail that the theory selected is a proper or complete cosmological theory. The theory in question may not adequately account for all observed features of the universe or the universe as a whole. For example, someone may be persuaded by an apparent miracle to believe that a

benevolent God created the universe. However, his belief about God does not indicate why the universe also contains things and situations that throw doubt on God's benevolence. As long as the individual is satisfied by his belief, there is no reason to consider opposing views. But without this added consideration, there is no indication that the belief about God qualifies as a cosmological theory. Instead, the belief presented explains only one isolated feature of the universe.

The obvious conclusion is that until the individual examines the universe in detail and considers his beliefs carefully, he has no reason to suppose that he has an acceptable theory. In the process, he may discover that there is an alternative theory that is a better account of the origin or purpose of the universe as a whole. For instance, I may believe that the universe was engineered by a spider. My affection for spiders prompts me to accept this view. On closer examination, I realize that my simplistic hypothesis cannot account for the immense size of the universe. I must conceive of the spider as not being bound by the constraints of space and time. A normal, spatio-temporal spider would be incapable of creating an infinite universe. With this added detail, I have transformed my initial hypothesis into a better theory. In terms of plausibility, a more sophisticated consideration of the universe yields a more plausible hypothesis.

In describing cosmology this way, I have departed from Philo's position. Philo thinks that once human beings extend their speculation to include things that cannot be resolved by sense experience, all hypotheses are equally likely¹³. My view is that, despite any initial, apparent equality, better versions of cosmological hypotheses can be found through extensive consideration of the nature of the universe and what this consideration reveals about the proposed creator and purpose of the universe. Philo insists that experience is the determining factor. Without direct knowledge of the creator or a complete experience of the universe, cosmological questions cannot be answered. But it seems that contemplation of what is known about the universe can guide us in discovering the nature of things that are not experienced. In the process, certain underdeveloped hypotheses can be eliminated.

In one way, my position resembles the position put forward by Demea. For Demea, the problem with anthropomorphism is that if God can be described as being human, it is difficult to understand how a human being can create a universe¹⁴. In order to make sense of this doctrine, the description of God as human cannot be taken as literal. Instead, God is described as possessing attributes comparable to those of human beings, even though he exceeds human beings in terms of grandeur and perfection. Demea's reaction can be seen as being prompted by the apparent incongruity

between the nature of the universe and the nature of God conceived as human. The important point is that the anthropomorphic hypothesis can only survive this initial attack if it can be adjusted to account for the existence of the entire universe. Without this adjustment, the doctrine appears defective when compared to alternatives that more readily account for the nature of the universe.

According to the view that cosmological theories are to be selected on the basis of their aesthetic or psychological appeal, the theory selected does not have to be defended or revised. If anthropomorphism appears to be in conflict with our general knowledge of the universe, it would still be viewed as a viable alternative. Neither position would insist that further argumentation be presented to support the hypothesis in question. However, describing cosmology this way destroys the claim that the prime concern of cosmology is understanding the universe. There is little indication of how such an approach is compatible with the characterization of cosmology as an intellectual pursuit.

My alternative to the aesthetic and psychological justifications of cosmology does share one feature with these views. The final acceptance of a cosmological theory is not decided by experience or argument alone. The number of theories that are considered plausible may be reduced by arguments and experience, but, in the end, it is still up to the individual to decide which theory he believes most like-

ly approximates the truth. This concession is an unavoidable result of agreeing with Philo that empirical methods cannot decide the matter. Disagreement with Philo, however, arises over the issue of what speculation can reveal. The alternative to Philo is to claim that speculation can uncover those theories which are the most plausible. After eliminating certain viewpoints, the decision to accept a particular cosmological theory becomes the individual's prerogative.

In making this concession, it may appear as if the emphasis on the intellectual nature of cosmology is unnecessary. If the individual decides on the basis of personal inclination, there seems to be no reason to insist that this decision only come after extensive deliberation. I stress the intellectual aspects of cosmology because I have interpreted it as a search for understanding. It seems necessary to interpret cosmology as the search for understanding because only this interpretation preserves some of the original aspects of cosmological questions. Before considering Philo's criticisms of cosmology, it may seem as if cosmological questions could be answered. Philo's analysis makes it difficult to hold on to this position. But by emphasizing that cosmology is an intellectual pursuit, we remain closer to our original beliefs about cosmological questions. On the other hand, stressing the aesthetic and psychological aspects of cosmology is tantamount to abandoning any charac-

terization of cosmology as an intellectual endeavor or a search for the truth.

In defending cosmological speculation, I have argued that an understanding of the universe may be possible even if the truth is unattainable. This conclusion is not unusual. The defence of cosmology, in this context, mirrors similar attempts to preserve religious belief, even though such beliefs cannot be fully supported by empirical evidence. The argument in favour of religious belief maintains that the individual is entitled to his beliefs if they can be "reconciled"¹⁵ with other forms of belief. The comparison of religion with cosmology will show that both are interested in understanding the universe, despite the absence of direct confirmation of hypotheses through sense experience.

Penelhum, for example, considers the options of theism and atheism and concludes that neither is "irrational in relation to the evidence and that neither is required by it"¹⁶. The use of the term "irrational" distinguishes these theories from absurd or questionable doctrines, such as the naive version of anthropomorphism mentioned earlier. To say that a theory is not "irrational" implies that it can withstand some form of rational or critical assessment. But even with this critical assessment, it is impossible to determine which of the remaining theories is the correct view. Penelhum contends that "our world is religiously

ambiguous"¹⁷ which implies that deciding on or accepting a theory is not something determined entirely by the nature of the universe. The ultimate decision in these matters seems to be a reflection of the individual's inclination to view the universe in a particular way.

Hallberg also presents a position along these lines. Hallberg describes how theories that go "beyond what could be conceivably determined by scientific experimentation"¹⁸ lend themselves to different attitudes concerning the universe. A theory that depicts the universe as a product of design may inspire "gratitude or thanksgiving"¹⁹ toward the designer. On the other hand, a theory that takes the universe to be a product of "blind chance"²⁰ may inspire a "very negative account of our ultimate relationship to our ultimate context"²¹. The difference between these competing viewpoints results in different personal reactions depending on the world view presented. Hallberg argues that "neither choice can be accused of factual error"²². Adopting a particular cosmological viewpoint is a decision not justified by experience. Instead, it is a decision based on a particular perspective on the universe.

The positions developed by Penelhum and Hallberg defend ways of thinking commonly believed to be discredited by the rise of modern science. The relevance of such a defence to cosmology is that cosmological theories are often rooted in religion and myth. The success of science is sometimes

associated with the elimination of these "primitive" ways of thinking²³. The search for an understanding of the universe seeks to reinstate these ways of thinking as acceptable approaches to cosmological questions. The success of science creates problems for certain cosmological doctrines because these doctrines offer explanations of observed phenomena that are not as simple and experimentally accurate as scientific explanations. Darwin's theory of evolution, for example, has advantages over theories that use God as an explanation for the development of biological organisms²⁴. Penelhum, in his defence of theism, is prepared to acknowledge that Darwin's theory is "inevitably more economical and is supported by a vast range of independent evidence"²⁵. The theist will, therefore, encounter strong opposition if he attempts to explain things that have been accounted for by science. Cosmology, it seems, will be unable to overturn the findings of Darwin and other scientists.

Given this conclusion, Philo would repeat his claim that cosmology should be abandoned. There are better, simpler explanations of the "present material world" than those that invoke reference to the creation or purpose of the universe. However, a more realistic position is to stress that cosmological speculation has certain boundaries. A theory that is developed in the context of a search for an understanding of the universe cannot be used to explain particular features of the observed universe. Otherwise,

the justification of speculation is being abused. Cosmological speculation is preserved by limiting it to particular questions. The attempt to extend this speculation to cover other questions distorts the nature of the enterprise.

The conflict between science and cosmological speculation is similar to the conflict between science and religion. Penelhum argues that natural theology has been replaced by "defensive apologetics"²⁶ for religious belief. The success of science has altered the approach adopted by the "rational theist"²⁷. Instead of describing religion as being in competition with science, the need is for "reconciliation"²⁸. Religious belief is not irrational even though God no longer functions as an explanation of features of the observed universe. Russell makes a similar point about the restrictions imposed on religion by the success of science:

A purely personal religion, so long as it is content to avoid assertions which science can disprove, may survive undisturbed in the most scientific age.²⁹

A similar defence of cosmology would argue that beliefs about the origin and purpose of the universe can be reconciled with scientific explanations of observed phenomena. The solution rests in assigning each its own domain. Science, however, has the advantage in that established scientific explanations override explanations based on cosmological speculation. In other words, a cosmological theory is

not to be used as the basis for claims about things which are better accounted for by other methods.

The outcome of this discussion is that a proper cosmological theory cannot be inspired by or function as an explanation of a "limited range of phenomena"³⁰. The relevance of this conclusion to the assessment of anthropomorphism and anthropocentrism is that there is no reason not to include these doctrines in the class of plausible theories. An individual can still accept an anthropomorphic or an anthropocentric view of the universe if such a view accounts for the origin and purpose of the universe as a whole. Some, such as Demea and Greenstein, may consider a proper formulation of these doctrines to be an impossibility. They seem to find such views to be incompatible with the nature of the universe. However, their arguments only apply to particular versions of these theories. It still remains possible to develop consistent, plausible anthropomorphic and anthropocentric theories based on a detailed examination of the universe.

Philo's analysis of cosmology makes all cosmological theories equally plausible. In this context, there is no reason to choose anthropomorphism or anthropocentrism over another theory. My position is that reasons for adopting either theory can be presented. However, Philo is correct to point out that decisions made in these circumstances are not made on the basis of empirical evidence. At some point,

the individual decides which of the available hypotheses he thinks is better. From my personal perspective, I would not adopt either an anthropomorphic or an anthropocentric viewpoint. Although these theories can be made consistent with the nature of the universe, I suspect that they are expressions of an underlying desire to make human existence appear to be special. In this way, I may have more in common with Demea and Greenstein than I originally acknowledged. But unlike these two, I do not think that personal dissatisfaction with a theory removes that theory from the cosmological enterprise. Anthropomorphism and anthropocentrism can still have a place in cosmology even if they are offensive to certain sensibilities. The search for an understanding of the universe admits of numerous possibilities.

ENDNOTES

1. David Hume, *Dialogues Concerning Natural Religion*. (Indianapolis: Hackett Publishing, 1980), p. 31.
2. *Ibid.*
3. *Ibid.*, p. 17.
4. Stephen Toulmin, *The Return to Cosmology: Post-Modern Science and the Theology of Nature*. (Berkeley: University of California Press, 1982), p. 42.
5. In this context, Philo's discussion of the limitations of experience could be construed as a description of the practical limitations of human beings. This leaves open the possibility that if human beings were different, they would perceive the universe in a different way.
6. Toulmin, p. 42.
7. *Ibid.*
8. Gilbert Ryle, *The Concept of Mind*. (Middlesex: Penguin Books, 1949), p. 19.
9. *Ibid.*
10. Toulmin, p. 1.
11. See Greenstein, pp. 25-26.
12. For example, Philo describes how the "fervor" and "joy" associated with religious belief can often degenerate into melancholy inspired by the fear that gives rise to religious belief in the first place. Hume pp. 86-87.
13. *Ibid.*, p. 17.
14. For Demea, A God made human does not make sense because God has to be perfect. *Ibid.*, pp. 26-27.
15. This is the term Penelhum used in "Science, Design and Ambiguity: Concluding Reflections", *Origin and evolution of the Universe: Evidence for Design?* ed., J. Robson. (Montreal: McGill University Press, 1987). It is a term well suited for my discussion.

16. *Ibid.*, p. 284.
17. *Ibid.*
18. Fred Hallberg, "Barrow and Tippler's Anthropic Cosmological Principle", *Zygon*. Vol. 23 June 1988, p. 147.
19. *Ibid.*
20. *Ibid.*
21. *Ibid.*
22. *Ibid.*
23. This attitude toward religion is one I attributed to Greenstein in Chapters One and Two.
24. See Chapter One.
25. Penelhum, p. 284.
26. *Ibid.*
27. *Ibid.*
28. *Ibid.*
29. Bertrand Russell, *Science and Religion*. (Oxford: Oxford University Press, 1935), p. 9.
30. This is Toulmin's expression for describing the subject matter of scientific theories. Toulmin, p. 27.

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