

body. The universe as a magnitude is a body because like all bodies it is bounded by a surface, and from this he concluded that there cannot be an infinite body in actuality.⁸

Contrary to Aristotle, al-Kindī consistently upheld the theory of creation out of nothing (*creatio ex nihilo*). God is the one, the Creator out of nothing (*al-mubdi'*) who maintains in existence what he has created out of nothing.⁹ He uses the word "*ibda'*", unlike later philosophers,¹⁰ to denote creation in time out of nothing. Abū Hayyān al-Tawhīdī was aware of this attitude of al-Kindī "when he introduced him as adding *ibda'*, to the traditional four Aristotelian kinds of change, being a change without substratum."¹¹

Al-Kindī, with a bias towards philosophy yet positively religious, found no intellectual difficulty in rejecting the Aristotelian theory of the eternity of the universe, while at the same time he used its particular instruments to formulate his own theory.¹² He combined two main Aristotelian principles and certain self-evident propositions to prove that the creation of the universe is a motion, that motion is not eternal, and hence, the universe itself is not eternal.

The two principles which al-Kindī made use of are: (1) The infinite cannot become actual; that is, there can be no infinite body; (2) body, time and motion are concomitants; they exist simultaneously.

The self-evident propositions that al-Kindī employed in conjunction with the above-mentioned Aristotelian principles are the following:

- (1) All homogeneous bodies, none of which is greater than the other, are equal.

- (2) The distance between the extremes of equal bodies is the same in actuality and potentiality.
- (3) Finite bodies cannot be infinite.
- (4) If either of the two equal and homogeneous bodies is increased by another homogeneous body, the two become unequal. (The increased body will be the greater of the two and greater than what it was before.)
- (5) If a body is decreased the remainder is smaller than the original body.
- (6) If a part is taken from a body and then restored to it, the resultant is the same body we had before.
- (7) Neither of the two infinite homogeneous bodies can be smaller than the other.
- (8) Of the two homogeneous bodies, the smaller is so in relation to the greater of the two, or in relation to a part of the greater.
- (9) If homogeneous bodies, all of which are finite, are added together, their sum will also be finite.

Most of the proofs which al-Kindī uses to demonstrate the finitude of the universe rest on the above-mentioned Aristotelian principles and self-evident prepositions. Here is how he proceeds to demonstrate his point of view.

He starts with saying that if we assume that the universe had no beginning in time, that is, that it is infinite, we have to assume an infinite body of the universe which

is a contradiction in terms.

Now, if we take away a part of a supposedly infinite body, the remainder is either finite and the whole was infinite (No. 9), or the remainder is infinite and the whole was infinite. If the whole is infinite and then we add to it what was taken away, the resultant will be the same body as before (No. 6), that is an infinite one. This would imply that the infinite is greater than the infinite, which is absurd. And it would also imply that the whole is identical with the part, which is contradictory. A body, therefore, which exists in actuality must of necessity be finite. The body of the universe actually exists; therefore, it is finite, which means that it is created.

Having proved that the body of the universe is finite and created, al-Kindī, who following Aristotle, connects body, time, and motion, proceeds to prove the creation of time and motion. If "past time" without a beginning be possible, it cannot arrive at the "present time" since this would imply that the infinite comes into actuality. But the infinite cannot come into actuality, for the infinite cannot be traversed; and to say the "present time" has passed through an infinite number of instants would imply that the infinite has been traversed. Therefore, time is finite and created. This same reasoning applies to motion.

Al-Kindī then connects his conclusion regarding the creation of time and motion with "body". Time, according to him, is the duration of the body; motion is the measure of the duration of the body. Now, if the body of the universe is finite and motion is necessarily concomitant to the body, being the measure of its duration, it follows that where there is a body there is motion. But

he has already shown that where there is motion there is creation in time. Thus all three—body, time, and motion—are created.

The Philosopher of the Arabs then attacks the problem of creation in time with a corroborative argument based upon motion. We have to assume, he says, that the body of the universe is either created or eternal. If created, its generation out of nothing is a motion. Now creation is a motion; motion is not eternal but created as it has been shown before. The body of the universe, therefore, has been created in time out of nothing.

If, on the other hand, the universe is eternal, or as al-Kindī puts it, was at rest (*sākin*) and then it moved, motion is a change. This means that what is eternal has passed from a state of rest to a state of movement, which is absurd since what is eternal does not change. The universe is, therefore, created in time (*muhdath*).

It is clear from this exposition of al-Kindī's arguments that he parts sharply from Aristotle and the Hellenistic tradition in Islam and approaches more closely the theologians.

Aristotle affirms the existence of matter as an indispensable condition of production of things, whereas al-Kindī reaffirms the religious principle of creation out of nothing overlooking completely the arguments of Aristotle against such a principle.

Furthermore, al-Kindī differs from Plato who upheld a theory of creation in time; for whereas Plato believes that matter is eternal, al-Kindī believes it was created. However, al-Kindī and Plato coincide in their conception of the relation between motion and time. Both maintain

that time is concomitant with motion and change and that where there is no change there is no time. God being changeless is also timeless. Only with creation did change and, therefore, time begin.

Al-Kindī tried in his *On First Philosophy* to demonstrate that an actual body cannot be the cause of itself, it cannot be infinite, nor can it be one. He thought that once he had established these three points he had proved that God is the Creator of the universe and the only eternal being. All his efforts were directed, in effect, towards this goal.

The theologians as a whole had advocated, before al-Kindī, a theory of creation in time. To them, the universe consists of atoms and vacuum, both of which are accidents and are devoid of any self-subsistence. The atoms cannot endure for two moments of time because they are in continuous recreation. According to them, a body is inseparable from its accidents (*a'rāḍ*),¹³ and does not precede them. Now, whatever is inseparable from its accidents and does not precede them is created in time. The body of the universe, therefore, is created in time. Al-Ghazalī (1059-1111 A. C.), the most important theologian in Islam, later advocated the atomic theory of the earlier theologians, but besides adduced in support of the thesis that the world must have been created in time, the concept of the impossibility of an infinite regress.¹⁴

Later some of the philosophers, like al-Fārābī and Avicenna, upheld a theory based upon the idea that whatever exists by virtue of causation, that is, which is not-self-causing, must necessarily come into being simultaneously with the cause (*musāwiq*). Creation did not take place *in* time but *with* time. Any priority that exists

between cause and effect is in the nobler nature of the cause and not in the time of creation.¹⁵

Al-Kindī rejects both the approach of the theologians and their atomic theory which destroys the idea of natural causality. He affirms with them, however, a voluntary creation out of nothing, which affirmation is not consonant with his partial determinism. Against the philosophers, he maintains the theory that God is prior to His creation in time as well as in nature.

As to the source of al-Kindī's particular approach and argument, one must look for it in his keen mind and in the writings of John Philopponus, who held similar views regarding the doctrine of the creation of the world and whose works were well known to the Arab-Muslim thinkers. John defended the theory of creation against Proclus by using arguments and an approach similar to those used by al-Kindī. His main argument is based on the impossibility of traversing the infinite. If the world were eternal we would not have arrived at the present moment. He maintains also with al-Kindī the voluntary creation of the world and its coming to being out of nothing. God's will, according to him, can manifest itself without need of time or body.¹⁶ And lastly both al-Kindī and Philopponus believe in the finitude of time and space.¹⁷ The note of difference between the two is one of methodology rather than content.

C—God: the Proofs of His Existence

Now having proved that the universe is created in time (*muḥdath*), al-Kindī proceeds to demonstrate that it has a creator (*muḥdith*). He advances five proofs, four of which are variations of the cosmological argument based

upon the idea of *a novitate mundi (dall al-hudūth)*,¹⁸ and not directly upon the argument from causality. The last proof is teleological.

The first proof is based upon the premise that the universe was created in time. It has been shown that the universe is finite in respect to body, time and motion, which means that it must have been created. According to the law of causality everything created in time must have a creator. God, therefore, is its creator and He is consequently existent. Al-Kindī also invokes the principle of logical relation to prove the same point. According to this principle there is a necessary relation between cause and effect, or between creator and created. If it has been proved that the universe is created, what is created, must necessarily have a creator.

This proof of God's existence was frequently used by the theologians who, accepting the creation in time as a premise, tried to prove the necessity of the existence of a creator by recourse to the "principle of determination". This principle meant that prior to the existence of the universe it was equally possible for it to be or not to be. In order to make the possibility of being prevail over not-being a "determining principle" (*murajjih*) was required, and this "determining principle," they argued, was God.¹⁹

The second proof of al-Kindī is based upon the highly cherished Islamic idea of God's unity coupled with the assumption that all earthly beings are composite and multiple. However, the proof is basically cosmological. Its approach is more sophisticated than the previous one, although the inspiration is Islamic.

Before he starts his argument, al-Kindī explains the

equivocal meaning of the term "one". This is attributed to the "single" objects of the world of creation and also it is attributed to the One, the Creator. Inspired by an Aristotelian distinction between oneness as a number and oneness as referring to simplicity, he affirms that *one* as a number may apply both to God and to "single" objects. But as referring to simplicity it cannot be attributed to any being except God. All "single" beings are composite in themselves, that is, divisible into component parts. Only God is indivisible; He is one in essence as well as in number. Oneness is essential in God, but in "single" objects it is accidental. In the case of God, oneness is absolute unity; in the case of all other beings, it is relative and *dependent* on God.

Everything other than God, then, is in some way composite which means it is multiple. Multiplicity is by necessity a group formation of several "singles" or "ones". It follows, therefore, that where there is no oneness there is no multiplicity; and also it follows that unless the "one" precedes the composite or multiple there is no coming to be either material or temporal. Ultimately, everything that acquires material and temporal existence must emanate from that One which precedes all other "ones", and which is, therefore, the eternal cause of all coming to be. The one is the cause of all other "ones"; He is the Creator by whose actions everything comes to be, and everything lasts as long as He wills it to last.

The third proof is advanced in both his *On First Philosophy* and *On the Unity of God and the Finitude of the Body of the Universe*.²⁰ It is based upon the principle that a thing cannot be the cause of itself for in order to be so, it would have to exist before itself. He means by a "thing", of course, a created one and not God. His argument for

maintaining that a thing cannot be the cause of itself is established by examining all possible situations that arise when a thing is assumed to be the cause of itself, and by trying to prove their absurdity. Here are the possible situations :

- (1) The thing which is the cause of itself may be non-existent and its essence non-existent. In this case there is no cause or caused because cause and effect are attributed only to what exists.
- (2) A thing may be non-existent and its essence existent. But this would mean that the thing does not exist and that which does not exist is nothing. Furthermore, if a non-existent thing is the cause of itself, it is at the same time itself and different from itself, which is contradictory.
- (3) The thing may be existent and its essence non-existent. Here also we meet the same contradiction as above.
- (4) The thing may be existent and its essence also existent. In this case, either the essence would be different from the thing itself (which is impossible); or the same thing would be both cause and effect (which is likewise a contradiction in terms). Therefore, to say that a thing which is existent and whose essence also exists, is the cause of itself, is absurd.

These arguments of al-Kindi seem to be simple and self-evident. They are so to the extent that they are based upon the law of identity (if a thing is *A*, it is *A*),

and upon the law of contradiction (no proposition can be both true and false). But they are not mental exercises—they hit upon a very crucial problem. Can an already existent thing be the cause of itself? or can a thing be before itself?

The fourth proof is analogical and is really a re-statement of an old Stoic argument. The analogy is between the macrocosm and the microcosm. Just as the orderly and smooth running of the human body points towards an invisible intelligent administrator, which is the soul, so do the orderly and harmonious workings of the universe point towards an invisible and all intelligent administrator, which is God. But if someone asks how we come to know this administrator, al-Kindi answers that just as we know that the soul exists by the effects we observe in the body, so we should be able to know that God exists by the effects of His wise administration manifest in the visible world.²¹

The fifth and last proof is based upon the teleological argument (*dalil al-'ināyah*) frequently used throughout the ages. It is even considered the most effective proof by such a distinguished philosopher as Immanuel Kant. The presentation of this proof is not organically administered as the other proofs. It is, however, alluded to on several occasions in al-Kindi's writings. Al-Kindi points out that the orderly and wonderful phenomena of nature could not be purposeless and accidental. They unmistakably imply a wonderful direction and a providential administrator, "an agent of agents, a generator of generators, a first of firsts and a cause of causes".²² In another place al-Kindi says :

The majestic structure of this universe, its regularity, the harmonious interaction of its parts, the