

THE COSMIC ELEMENTS IN RELIGION, PHILOSOPHY, ART AND LITERATURE

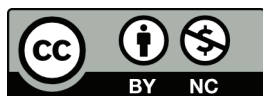
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PERSPECTIVES ON THE CONCEPT
OF BASIC ELEMENTS IN ISLAM

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PROLOGUE

The relationship between physics and theology has been a major topic of philosophical debate in Muslim culture, as religion and science are twin pillars of every civilization. This is verifiable with regard to physical, alchemical and cosmological theories; especially the discourse about the origins of the universe that reveals the continuing encounter between physics and theology. Philosophical schools and worldviews (Greek, Babylonian, Indian, Chinese, Tibetan, Islamic, etc)¹ have a concept of four or five basic elements that reflect the simplest essential parts and principles of which anything consists or upon which the constitution and fundamental powers of anything are based. Most frequently, basic elements refer to earth (equivalent to solid), water (equivalent to liquid), air (equivalent to gas) and fire (equivalent to plasma). Historically, the concept of all matter being composed of small, indivisible particles called atoms most likely goes back, in Western thought, to the fifth century B.C., when to Democritus, a young contemporary of Socrates, first formally introduced the idea positing that if one continually kept dividing matter, eventually a particle would be reached that could not be divided anymore: an a-tom, i.e., 'not divisible'. He also posited the existence of empty spaces between these atoms within which they could move—a pure 'void'². He believed that all of the workings of the universe

¹ See McDonnell, 1991, pp. 1-4, 21-25 and Strathern, 2000.

² See Abu Nasr al-Farabi, 1951 and Fârâbî's, 1992.

were the result of the vibrations of these atoms through voids and their collisions with one another. Plato and Aristotle strongly disagreed. The latter, in his *Physics*, wrote quite extensively against the existence of both the 'atom' and the 'void', claiming that not only were Democritus' evidences lacking, but also that the existence of atoms and voids violated physical principles. In turn, Plato posited the 'four natural elements' theory: fire, air, earth and water form the basis of all else.

The atomist and antiatomist Greek philosophers sought to explain natural occurrences and daily phenomenon without the need of resorting to supernatural explanations and believing in heavenly (or earthly) deities. But the approach was adopted by a section of the Hellenized monotheist Abbasids (i.e., the *Mutakallimān*)³ in their attempt to prove the all encompassing efficacy of an omnipotent God. However, in their adoption of this cosmological view, they ensured that they sufficiently modified it so as to conform with and eventually support their theological positions.

THE NATURAL ELEMENTS IN THE QURAN

The basic elements (الماء والهواء والنار والتراب) have been described by the Quran in a number of its verses. I quote the following:

Do not those who cover up (truth) see that the asteroid belts and the earth had been joined together (as one unit of creation), then We ripped them apart? And We made every living thing from the water. Will they not then believe?

— Quran 21:30

And He it is who created man from water.

— Quran 25:54

And it is He who created the Asteroid belts and the earth in six days. And His Throne was on the water —that he might try which of you is best in conduct.

— Quran 11:7

His Throne [kursiyy] extends to the asteroid belts and the earth and He feels no fatigue in guarding and preserving them, and He is the Exalted, the Supreme.

— Quran 2:255

³ See Wolfson, 1976.

And the earth We have spread out like a carpet; set thereon Mountains firm and immovable.

— Quran 15:19

Who hath appointed the earth as a bed and hath threaded roads for you therein.

— Quran 20:53

It is He Who sendeth the winds like heralds of glad tidings, going before His mercy: when they have carried the heavy-laden clouds, We drive them to a land that is dead, make rain to descend thereon, and produce every kind of harvest therewith: thus shall We raise up the dead: perchance ye may remember.

— Quran 7:57

Moreover He comprehended in His design the sky, and it had been as smoke: He said to it and to the earth: «Come ye together, willingly or unwillingly». They said: «We do come together, in willing obedience».

— Quran 41:11

It is We Who have built the universe with (Our creative) power, and, verily, it is We Who are steadily expanding it.

— Quran 51:47

We created you from dust, then from a small seed, then from a clot, then from a lump of flesh, complete in make and incomplete, that We may make clear to you; and We cause what We please to stay in the wombs till an appointed time, then We bring you forth as babies, then that you may attain your maturity; and of you is he who is caused to die.

— Quran 22:5

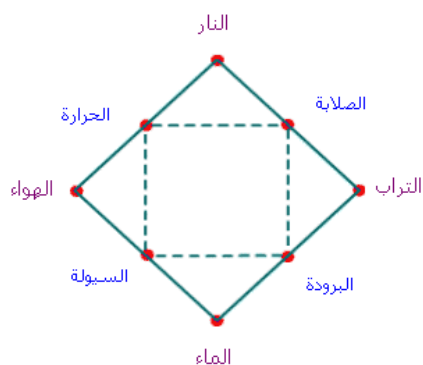
The canonical Islamists (Traditionalists, Jurists, etc) averse to any rationalist or naturalist theorization failed to formulate any philosophical postulations or theories about the Basic Elements in Islam in light of the Quranic verses. However, the Scholastics of Islam (*Mutakallimān*) in their reconciliatory approaches on reason and revelation made a good use of such Quranic verses.

THE *Al-‘anasir al-Arba’a* (العناصر الأربعة)

Muslim ontological pedagogues (philosophers, scholastic *Mutakallimān*, natural scientists, alchemists, etc) have contributed significantly towards comprehension and critique of diverse Babylonian, Hellenistic, and Neo-platonic concepts of natural elements that

formed philosophical-scientific theories of Atomism, Void and non-atomism⁴.

In Arabic philosophical-alchemical canons, these elements are referred to as *al-‘anasir al-arba’* (العناصر الأربعة) as in the following diagram:



Avicenna (981-1037) dedicated a significant part in his *Al-Shifa* to approach Natural Elemental domain of philosophy. He defines elements as simple substances which provide the primary components of the human body. The four elements are earth, air, water and fire. These are symbolic expressions. Because all the elements recognized so far exceeding 100 should correspond to any of these four elements which virtually encompass all the known elements of today. These four elements have been assigned four temperamental qualities viz. hot, cold, moist and dry. With the existence of the matter in the universe, bodies also gain specific shape, and the quantum of matter a body contains is its mass. Since the body has to do some work, it should have energy to do so. Moist or dry states of matter should be charged with heat and cold in the form of energy. In theory mass and energy could be spelled out distinctly but in practice the two are inseparable. In view of the physical conditions as they are, we could conclude that heat is in fact the total kinetic energy possessed by the molecules of the body due to their rapid and random motion. Aristotle has rightly held the hot and cold as active, and dry and moist as passive qualities. This concept of element with heat and cold as two opposite types of energy and dryness and moisture as two opposite

⁴ See Maróth, 2011.

qualities of matter is the fundamental hypothesis which proceeds to explain the complicated phenomenon of human biology and psychology in physical terms.

The four elements are classified into heavy: earth and water, and light: fire and air. In terms of qualities, the heavy elements are strong, negative, passive, and female. The light elements are weak, positive, active, heavenly, and male.

The chart below shows various correspondences for elements:

Season	Spring	Summer	Autumn	Winter
Age	Childhood	Youth	Maturity	Old Age
Region	East	South	West	North
Element	Air	Fire	Earth	Water
Humor	Blood	Yellow Bile	Black Bile	Phlegm
Personality	Sanguine	Choleric	Melancholic	Phlegmatic

Earth is an element usually situated at the center of our existence. In its nature it is at rest, and because of its inherent weight, all other elements gravitate toward it, however far away they may be. It is said to be cold and dry in nature, and it appears so to sight and touch, so long as it is not changed by any other elements. It is by means of the earth element that the parts of our bodies are fixed and held in place; thus the outward form of the body is due to the earth element.

Water is a simple substance whose position in nature is exterior to the sphere of the earth and interior to that of air. Water is cold and moist in temperament, although only slightly so. Water is easily dispersed and assumes any shape without permanency. In the construction of «things», the addition of water allows the possibility of their being shaped and molded and spread out. Shapes can readily be made from it, and just as easily dispersed. Moisture dispels dryness, the latter being overruled by the former. Moisture protects dryness from crumbling (as moist earth, or mud), and likewise, dryness prevents moisture from dispersing. Thus the two elements of earth and water are interacting and interdependent. Water is, of course, absolutely essential to life.

Air is positioned in nature above both water and earth, but beneath fire. The temperament of air is hot and moist, and its purpose in nature is to make things finer, lighter, and more delicate and thus more able to ascend into higher spheres. Air is also the agent by which breath moves in and out of the body and causes or makes possible the involuntary movements of the body.

Fire is also a simple substance, situated higher than the other three elements. Fire is hot and dry in temperament, and its role in nature is to rarefy, refine, and intermingle things. Fire has the power to penetrate and can ride through the element of air. It has the capacity to overcome the coldness of the two cold elements, earth and water, and so creates and maintains harmony among the elements. Each of the elements has a corresponding humor or essence in the body: Blood humor relates to air. Phlegm humor relates to water. Yellow bile humor relates to fire. Black bile humor relates to earth.

The table below summarizes attributes of the elements as they relate to aspects of human physiology:

	Earth	Water
Tendency	Spreading	Drooping
Bodily System	Skeleton	Muscles
Excretion	Feces	Urine
Sense	Touch	Taste
Bodily Function	Form	Nutrition
Mentality	Torpid	Phlegmatic
Mental State	Obstinany, Fearfulness	Submission, Affec- tion

	Air	Fire
Tendency	To and Fro	Rising
Bodily System	Circulation	Liver
Excretion	Saliva	Sweat, Tears
Sense	Hearing	Smell
Bodily Function	Respiration	Digestion, Volun- tary
Mentality	Cheerful	Emotional
Mental State	Humor	Weeping, Anger

According to Avicenna, the four elements are sometimes referred to as «primary matter»; which, when admixed, gives rise to the various forms such as mountains and rivers. Likewise, the burning fire that we see is not the element fire, which is really the potentiality of fire within the substance. For example, green wood has the element of fire within, but this may or may not be brought forth as flames, depending on whether it is ever ignited. All of the elements bear this relation between capacity within and reality of form. Thus all of the concrete objects of this world—from the most immense mountain to the minutest form of submicroscopic life—are related by the four elements. And through these same four primary elements, all earthly objects are related to (and influenced by) the planets and stars of the zodiac (which also have primary qualities within them). The movement of these four elements is continually taking place, so that change is a continuous process within the human body. This change can be either cyclical or progressive. The cycle of intake and elimination of food is an example of cyclical change, whereas the growth of a cancerous tumor is an example of a progressive change. In the *Unani* system, the monitoring and observation of these changes becomes an important mode of evaluating precisely what is happening within each part of the body. Therefore, a method of classifying these changes has arisen, called temperaments⁵.

The elemental system used in medieval alchemy was developed primarily by the Arabic alchemist Jābir ibn Hayyān (721–815) whose system consisted of the four Platonic–Aristotelian elements of air, earth, fire, and water in addition to two philosophical elements: sulphur, characterizing the principle of combustibility; «the stone which burns», and mercury, characterizing the principle of metallic properties. Jabir admits the Aristotelian theory about the composition of matter—earth, water, air, fire—but he develops it along a different path. First, there are four elementary qualities, or natures: heat, cold, dryness, humidity. When they get together with a substance they form compounds of the first degree, i.e. hot, cold, dry, wet. The union of two of these qualities gives⁶:

⁵ See Avicenna, 2009, pp. 35–40.

⁶ See Holmyard, 1975.

1. hot + dry + substance ----- fire
2. hot + wet + substance ----- air
3. cold + wet + substance ----- water
4. cold + dry + substance ----- earth

They were seen by early alchemists as idealized expressions of irreducible components of the universe and are of larger consideration within philosophical alchemy.

THE SCHOLASTIC ATOMISM

The *Mutakallimān* were the first theologian-philosophers in the history of Islam who sought to affirm theology on noetic principles of *Kalām* to counter the rationalistic tide of Peripatetic Mu'tazilites. Their method differed principally from the way of *Muhaddithin*, or the scholars of *Hadith*. From its earliest inception in the second century of the Hijra, *Kalām* has always been fascinated with the theory of atoms. A cursory look at the relevant sections in al-Ash'arī's (d. 324/935) *Maqālāt* shows the center stage this issue took⁷. And although the *Mutakallimān* disagreed about certain secondary issues regarding atomism (such as the minimum quantity of atoms required for a 'body', the quantity of atoms that a single atom is allowed to touch, and so forth), the broad theory was generally upheld by both the Mu'tazilites and Ash'arites. The *Mutakallimān* posited that all matter is composed of identical, miniscule, indivisible particles (i.e., atoms), that are devoid of any quantitative or qualitative properties. They only acquire quantitative properties of width, height, and breadth when two or more of them unite (at which point it becomes a 'body'), and they only acquire qualitative properties when an 'accident' is created within it. An accident is something that exists above and beyond the actual body. It is an accident that gives each atom (and, thereby, each body) its specific qualities that separates it from other atoms (and bodies); qualities such as color, temperature, speed or rest, life, knowledge, power, and so forth. Such accidents must reside in the atom itself, in fact by definition an accident cannot exist except within an atom⁸.

⁷ Al-Ash'arī, *Maqālāt*, pp. 314-321.

⁸ Dhanani, 1994; Brill, 2002; Frank, 1978.

Broadly speaking, the Mu'tazilites and Ash'arites were in agreement with regards to the affirmation of atomism, the most prominent exception being the eccentric al-Nazzām (d. 230/845), who was influenced by Aristotle's denial of atomism⁹. Due to this view, al-Nazzām was forced to invent the concept of the 'leap' (*tufrah*). The *tufrah* is the belief that an object has the capacity to move from point A to point C without traveling through the intermediate point B but rather 'leaping' over it. This belief was needed in order to explain how a body could traverse from point A to point C when, according to al-Nazzām, there were an infinite amount of points between them¹⁰.

Also, in contrast to the Greek philosophers and their Muslim followers, the *Mutakallimān* strongly affirmed the belief that both atoms and accidents were created, and that matter was not eternal. One of the most profound and unique contributions of the Ash'arites to the atomism debate was their proposition that 'No accident can last two successive instances of time'¹¹. In other words, as soon as an accident is created, it immediately ceases to exist. There is no continuity or connection between one moment in time and another. This means that if an object were to, say, remain in a state of rest, the accident of 'rest' must be continually created and re-created at each successive instant in time for the object to remain so. And, of course, it is only God who could create each and every accident on each and every body in each and every instance of time. The entire universe and all that transpires in it, according to the Ash'arites, must be directly controlled by God at each specific instance. Another philosophical (albeit not original) contribution was the idea that time itself is composed of discrete and successive units, a type of 'atomic-time'. This was derived not only from Aristotle's notion that space, time and movement are all existentially equivalent, but also from the problem of trying to solve Zeno's paradox as applied to time¹².

These two positions necessarily lead to a denial of causality, meaning that the Ash'arites completely negated a cause-and-effect relationship between any two occurrences. Everything that occurred

⁹ See Wolfson, 1929.

¹⁰ Sabra, 2006; Lemay, 1962.

¹¹ al-Ash'arī, *Maqālāt*, p. 358; al-Baghdādī, *Uṣūl al-Dīn*, p. 50, al-Ghazālī, *Tahāfut*, p. 88.

¹² Hasse, 2007a, pp. 150–175.

was disconnected, time and space, from anything preceding or following it. Even a body that remained a certain color did so because God continually re-created the accident of color in all of its atoms, at each instance in time (i.e., at each 'atomic-time' unit). A rock thrown at a window could not cause the window to shatter; an arm lifting a cup was not the cause of its lifting; the ingestion of food was not the cause of satiation; the proximity of fire to wool did not cause the wool to alight; and so forth¹³.

MULTIVERSAL COSMOLOGY

Al-Ghazali, in *The Incoherence of the Philosophers*, defends the Ash'ari doctrine of a created universe that is temporally finite, against the Aristotelian doctrine of an eternal universe. In doing so, he proposed the modal theory of possible worlds, arguing that their actual world is the best of all possible worlds from among all the alternate timelines and world histories that God could have possibly created¹⁴. His theory parallels that of Duns Scotus in the 14th century. While it is uncertain whether Al-Ghazali had any influence on Scotus, they both may have derived their theory from their readings of Avicenna's *Metaphysics*¹⁵.

Fakhr al-Din al-Razi (1149–1209), in dealing with his conception of physics and the physical world in his *al-Matalib al-'Aliya*, criticizes the idea of the Earth's centrality within the universe and «explores the notion of the existence of a multiverse in the context of his commentary» on the Qur'anic verse, «All praise belongs to God, Lord of the Worlds». He raises the question of whether the term «worlds» in this verse refers to «multiple worlds within this single universe or cosmos, or to many other universes or a multiverse beyond this known universe». In volume 4 of the *al-Matalib*, Al-Razi states:

It is established by evidence that there exists beyond the world a void without a terminal limit (*khala' la nihayata laha*), and it is established as well by evidence that God Most High has power over all contingent be-

¹³ See Nony, 2011; Pines, 1936; Heine, 1997, 1979a, 1979b, 1979c.

¹⁴ Al-Ghazzali, *Tahafut Al-Falasifah*, 1963 pp. 90–91. Compare it with Herbert A. Davidson, 1987.

¹⁵ See Hasnawi, 1977; 1984; 2001, pp. 219–255; 2004; Lettinck, 1994 and 1999, pp. 1–51.

ings (al-mumkinat). Therefore He the Most High has the power (qadir) to create a thousand thousand worlds (alfa alfi 'awalim) beyond this world such that each one of those worlds be bigger and more massive than this world as well as having the like of what this world has of the throne (al-arsh), the chair (al-kursiyy), the heavens (al-samawat) and the earth (al-ard), and the sun (al-shams) and the moon (al-qamar). The arguments of the philosophers (dala'il al-falasifah) for establishing that the world is one are weak, flimsy arguments founded upon feeble premises¹⁶.

Al-Razi rejected the Aristotelian and Avicennian notions of a single universe revolving around a single world. He describes the main arguments against the existence of multiple worlds or universes, pointing out their weaknesses and refuting them. This rejection arose from his affirmation of atomism, as advocated by the Ash'ari school of Islamic theology, which entails the existence of vacant space in which the atoms move, combine and separate. He discussed in greater detail the void, the empty space between stars and constellations in the Universe, in volume 5 of the *Matalib*. He argued that there exists an infinite outer space beyond the known world, and that God has the power to fill the vacuum with an infinite number of universes¹⁷.

There is a basis of truth in Ash'arite atomism, and moreover necessarily so, since what is in question is a theology that *grosso modo* is orthodox... The metaphysical reason for which created things—and first of all the universal substance it-self—necessarily compromise an element of limitation and separativity, is the gap between the Principle and Manifestation, God and the world, the Uncreated anti the Created; as the Principle alone is absolute Reality. It alone is situated beyond all trace of nothingness... the cosmic substance with its productions, and likewise the cosmic energy with its effects, must have a discontinuous character, and this discontinuity precisely marks the presence of the element of nothingness which distinguishes the Created from the Uncreated. The Greco-Alexandrian connections of Muslim philosophizing on atomism owes basically to diversity of sources in Islam, ranging from Arabic translations of Pythagoras, Archelaos, Plato, Aristotle, Ptolemy, Hipparchus and Proclus, to the

¹⁶ See ar-Razi, Abu Bakr, 1939 and Adi Setia, 2004.

¹⁷ Taneli Kukkonen, 2000; Muammer İskenderoğlu, 2002; MacDonald, 1927, pp. 326–344.

Sophists, Ostanos, Hermes, Asclepius, Hippocrates, Porphyry (d. c. 303), Galen (Jahnus) (d. c. 199 AD), Bolos the Democritean of Mendes, Zosimus of Panopolis, to Hermes and Hermetic literature (Hermes of Denderah and others), before the original Arab-Muslim Alchemists such as Jabir ibn Hayyan (721-815), Abu Bakr Muhammad ibn Zakariyya al-Razi (866-925), Abu'l-Qasim of Iraq (a contemporary of Roger Bacon), Aidamir al-Jildaki (?-1342), Al-Tughra'i (1063-1120), Al-Majriti (-1007), etc¹⁸.

THEOLOGICAL BEARINGS OF SCHOLASTIC ATOMISM

The concept of atomism was deployed by the Ash'arites in many different fields. In what can only be described as a pun on ideas, it is true to state that the concept of atomism itself became the fundamental building block of all other aspects of Ash'arite theology.

So, for example, based upon this cosmological view, the Ash'arites formalized more than one elaborate proof for the existence of God, the most common one being the 'dalil al-'a'raḍ wa ḥudāth al-ajsām', or the 'Proof from accidents and temporality of bodies'. This proof relies upon the fact that (i) existence is divided into bodies (composed of multiple atoms), and accidents; (ii) bodies are inherently composed of temporal accidents and cannot exist without them, and so: (iii) 'that which is composed of temporal elements and does not precede it must also be temporal'. Some of the Ash'arites sought to prove this method from the story of Abraham as he 'searched' for God via the celestial objects (Quran 6:71-79). They claimed that Abraham understood that the star, moon and Sun could not be gods because they were moving, and movement was an accident, hence Abraham realized that anybody that carried within it an accident must be created and not a God¹⁹.

Furthermore, based upon this atomic conception, they proved that God is One, and cannot be more than one. This proof is known as *dalil al-tamānu'*, or the 'Proof from mutual exclusion'. A summary of this is as follows: suppose that the universe had two gods, and one of them wished to create the accident of motion within an atom, while the other wished to create the accident of rest. Logically, there

¹⁸ See Sarton, 1927; Holmyard, 1939; Farber, 1961; Von-Meyer, 1906; Stillman, 1939.

¹⁹ Al-Baqillāni, *al-Inṣāf*, p. 44. Also see: Wolfson, pp. 386-390.

are only three possibilities: (i) both of them fail; (ii) both are successful; (iii) one of them is successful while the other fails. The first two logical possibilities are actually impossible, as the two are mutually exclusive, and the object has to be characterized with one of these opposing accidents. This only leaves the third option. And by definition, the one whose will is overpowering all else must be a God, and the one whose will was overpowered cannot be a god.

The Ash'arites and Mu'tazilites also propounded a theory of understanding God's Attributes based upon their respective understandings of atomism. The primary issue at stake for them was that God could not be a place (*maḥall*) where accidents exist, as that would imply that He was a body composed of atoms (since accidents by definition need atoms to subsist in), and hence created. So, for the Ash'arites, who defined an 'accident' as that which cannot last two successive instances, to posit any 'change' in God or from God would constitute an accident. And since all accidents must by definition reside in bodies, any accident posited of God would imply that God was a body. It was based upon this definition of 'accidents' that the Ash'arites could affirm God's never-changing attributes of Life, Power, Knowledge, Hearing, Seeing, Will, and Speech, and interpret other Attributes figuratively, especially those that implied any type of motion (such as *istiwā* and *nuzūl*).

For the Mu'tazilites, on the other hand, an 'accident' was defined as 'that which is superfluous to the essence (*dhāt*) of a substance'²⁰. For them, any meaning that was not inherent to a being and extraneous to its essence (*zā'id 'alā al-dhāt*) constituted an accident. Al-Qāḍī 'Abd al-Jabbār expounded on this when he said that if God actually had power, this would imply that He were a body, as power can only be potentialized when it resides in a body²¹. Hence, to affirm any characteristic to God would imply that an accident resided within God, which would necessitate God being a body, which would in turn entail that God was created. This helps explain why Mu'tazilite doctrine concerned itself with how best to phrase some of God's capabilities, (e.g., 'God knows with His essence', or 'God knows with a knowing that is Himself', or 'God's knowing implies that He is not ignorant', and so forth) as they could not explicitly

²⁰ Al-Ash'arī, *Maqālāt*, p. 369; Frank, p. 42.

²¹ Al-Qāḍī 'Abd al-Jabbār, *Sharḥ Uṣūl al-Khamsah*, p. 162.

affirm any meaning within God, yet at the same time could not deny that God, for example, knows everything.

Yet another theological tangent that atomism provided a basis for was that of predestination. In particular, the Ash'arite understanding of *qadr* or predestination was directly linked to their conceptualization of matter.

The Ash'arite position on predestination is that God creates the actions of the servant directly without the servant himself causing that act, and that the servant then 'acquires' the reward or punishment of that deed. Hence, there is only an illusion of free-will, for in the end all actions are a direct result of God's will and action. This theory, propounded by al-Ash'arī himself, is known as the theory of 'acquisition', or *kasb*. It is, of course, based directly on Ash'arite belief of God re-creating accidents within atoms at each and every second. Man, being merely the agency upon which these accidents are created, cannot actually be the cause of any of his own 'actions'. Hence, atomism was the key factor that led Ash'arites to deny both natural causality and human free-will.

This understanding led to another ethical dilemma, and that was the accusation of God doing something evil. How was it possible, the Mu'tazilites charged, that God would Himself create the actions of His servant and then punish them for it? This was the essence of evil.

In response to this charge, or perhaps pre-empting it, al-Ash'arī developed his doctrine of what constitutes 'evil'. For al-Ash'arī, evil was merely what God had prohibited, and good was what He had commanded²². Therefore, according to him, no act is inherently judged as good or evil—human intellect and rationality play no role in this regard. Later Ash'arite authorities concurred²³. Hence, for the Ash'arites, unless God explicitly states so, there is nothing that is 'good' or 'evil' in the first place! God does not punish or reward based upon a deed—God's rewards are a gift from him, and His punishment an indication of his Justice, and nothing is required or obligatory on God²⁴. Therefore, for the Ash'arites, based on their definition of evil, the charge that it is evil to deprive man of free-will

²² Al-Ash'arī, *Risālah ilā Ahl al-Thaghr*, p. 74.

²³ See, for example, 'Abd al-Qāhir al-Bahdādī, *Uṣūl al-Dīn*, p. 149; 'Aḍad al-Dīn al-Ijī, *al-Mawāqif*, p. 323.

²⁴ See, for example, al-Bāqillānī's description of this in his *al-Inṣāf*, p. 48.

and then subsequently punish him for actions which God created holds no weight. Man does not have the capacity, or even right, to say what is evil and what is good.

The Mu'tazilites took the exact opposite view. Before explaining their position on free-will, it is interesting to note that, unlike the Ash'arites, the Mu'tazilites did not reduce the concept of causality to a simple and wholly unequivocal scheme, hence it is rather difficult to piece together the relationship between their version of atomism and their position on *qadr*; for this response, some general observations will be made. The Mu'tazilites were, of course strong proponents of free-will, hence they denied that God created man's actions. Instead, they supported the doctrine that man created his own actions with the power that God had given him²⁵. This led to a detailed discussion of the concept of tawallud amongst them: whether (and to what extent) a human action could cause other actions. As an example, suppose a man shoots an arrow, and another person diverts it, and an innocent person is killed, who is morally responsible for his death²⁶ Despite the differences that the Mu'tazilite had amongst themselves, as a whole they affirmed causality and believed that substances possess properties that have the capacity to affect other properties.

In contrast to the Ash'arites, they viewed that it was rationally possible to judge actions as evil or good (the issue of al-tahsīn al-'aqlī). This basic premise played a profound role in their understanding of *qadr*. For the Mu'tazilites, if God were to directly create man's actions and then punish him for those actions, while man himself has been deprived of free-will, this would be the height of tyranny and injustice. Therefore, God cannot be the creator of man's deeds. For the Mu'tazilites, the Sacred Law only confirms what the intellect has already judged; it does not play any extra role in this decision²⁷.

The Qur'an has many references to the creation of humankind from clay or earth, both of which signify the lowly material of our origin, as well as the fact that the human body is composed of elements that are derived from the earth, air, and water.

²⁵ al-Qāḍī Abd al-Jabbār, al-Mughnī, p. 340, v. 2.

²⁶ Pines, pp. 37-38; al-Ash'arī, Maqālāt, pp. 408-410.

²⁷ See al-Qāḍī Abd al-Jabbār, al-Mughnī, pp. 26 (v. 6), 30-34.

The Qur'an refers to life originating from water. In Sura 21: 30 we read: «...and we made every living thing of water».

Since this phrase follows the reading in which Allah separates heaven and earth and since Sura 41: 10 refers to 'dukhan' which can be translated 'smoke' or 'vapour' I am inclined to conclude based on the cosmogony of ancient philosophical writings that the Qur'an referred to the matter that separated from the earth and expanded and which according to a number of pre-Islamic thinkers and writers contributed to the creation of the seven planets or earths (Sura 65: 15), which according to Irenaeus and Clement of Alexandria was a Greek concept of the seven entities orbiting the earth²⁸ in seven tracts (Sura 23: 17), which according to Clement of Alexandria were also described as seven heavens (that is the seven earth or planets orbiting in seven tracts were commonly described as seven heavens).

A number of Greek texts refer to this matter that separated from the earth either as ether or as vapour. Some authors such as Lucretius even considered and included both theories. Interestingly the Arabic 'dukhan' if we consider the same authors including Aristotle in his *Meteorologica* depicts and describes the very same substance which according to pre-Islamic scientists expanded from the earth. This might indeed explain why water is connected so closely to Qur'anic cosmogony, since the Qur'an views the heavens and its matter (sun, moon, planets and stars) to have emerged from the earth, either as ether or vapour. In fact according to Ibn Kathir²⁹ Mujahid considered the earth to exist prior to the heavens, and the smoke bursted out of it.

According to Ibn Arabi (d. 1240)³⁰: when God created the four elements, He raised the smoke to the firmament of fixed stars. He then opened up seven heavens in this smoke so that one could be distinguished from the next. «He breathed into each heaven its assigned task (*amr*)» (41:12), after which «He decreed that their sustenance lay within them»; all of which was done in «four days» (41:10). The Almighty said to the Heavens and the Earth: «Come obediently or come obliged» (41:11), that is, answer when you are called, when you are asked to declare what you have been told to say. And they

²⁸ See Plato, *Timaeus*, pp. 76-79; 84-85.

²⁹ *Tafsir*, vol. 1, p. 180.

³⁰ *al-Futuhat al-makkiyah*, ch. 9, pp. 423, 441.

said: «We come obediently» (41:11)... Consider then, if you are one of those gifted with Understanding, the words of the Almighty: «His throne was upon the water» (11:7) —so the throne and all that it contains of creation is living; and «Certainly there is nothing that does not glorify Him in praise» (17:44), bringing us the revelation with a negation, so nothing glorifies except the living. It is related in a sound *hadith* from the Messenger of God, peace and blessings be upon him, that «The angels said: ‘O Lord (in a long *hadith*) have You created anything more powerful than fire?’ And He said: ‘Yes, water’». Thus God made water stronger than fire. And if the element air in the creation of the *jinn*s was not ablaze with fire, they would be stronger than the children of Adam, as air is stronger than water. The angels said in this *hadith*: «‘O Lord, have You created anything more powerful than water?’ He replied: ‘Yes, air’. They then asked: ‘O Lord, have You created anything more powerful than air?’ and He replied: ‘Yes, the child of Adam’». So He made the human emergence stronger than air, and He made water stronger than fire, [water] being the most important element in man, just as fire is the most important element in *jinn*s. For this reason the Almighty said of Satan: «Surely the guile of Satan is weak» (4:76), ascribing no strength to Satan. And did He not reply to the Governor of Egypt when he said: «surely your guile is great» (12:28), despite the weakness of the mind of woman compared with that of man? And if women are imperfect in reason, then what do you think of the power of man?³¹

CABBALISTIC AND INDIAN CONNECTIONS

The Natural Elemental theory in Islam had representations in certain esoteric and cabbalistic perspectives, besides those in the domains of Theology, Philosophy, Alchemy and Scholasticism. The categorization of Arabic alphabet representing four elements is a clear example to reckon with, wherein the letters: ا ه ط م ف ش ذ represent fire, ج ز ب و ي ن ص ت represent air, د ح ل ع ر خ غ represent water and ض represent earth³².

³¹ See Akkach, 1997.

³² See Muhammad Gauth Gwaliori. 1984.

الحروف من حيث العناصر الاربعة:	
الناارية.....	ا ه ط م ف ش ذ
الهوائية.....	ج ز ك س ق ث ظ
المائية.....	د ح ل ع ر خ غ
الترايبية.....	ب و ي ن ص ت ض

In later Indian cosmology, the cosmic elements are *Akasha* (Heaven), Air, Fire, Water and Earth. *Akasha*= Brahma, if rationally translated, would be Creative Energy³³. Ether of Greek cosmology corresponds to *Akasha* of the Indian system and thereby becomes the element responsible for creation. The early Aryans had embarked upon understanding plant life. They discovered that plant life depended upon three factors, Warmth (Heat), Water and Earth. These became the elements of the first system of Indian cosmology. Its impact upon medicine gave the humoral theory called the Tridosha doctrine which recognizes only three humours, corresponding to Air, Water and Heat (Fire) as cosmic elements. It is obvious that in the earlier system of cosmology, and in the humoral theory, there is no element to account for creation. However, it will be noticed that given Heat, Water and Earth, the latter two represent forms of matter, while Heat is energy. Philosophically interpreted, Heat occupied the place which later on was properly taken up by *Akasha*, Creative Energy. Aristotle is one of those who tried to raise the importance of Heat but he could not go very far. Ibn Bājjah, as his follower, has a treatise on Soul³⁴. Ibn Bājjah maintains that «the body that has a form is composed of Earth and Water. This transformation is possible through Heat. This heat is the organ of the soul»³⁵. Thus the creative or at least the synthesizing power is attributed to heat and this is a property of soul, but the source of soul is not indicated here. But we can see how the phenomenon of creation is left vague stopping merely with heat. Even paganism realized that creation must be finally traced to a Creator and, by what appeared obvious to the eye, Sun =Creator. Islam conceived a Creator deprived of all material qualities

³³ See Tattwa Kaumudi authored by Vacaspati in the 9th century A.D; cf. Divanji, p. 148.

³⁴ See Hasan Mas'ūmī, 1961, p. 38.

³⁵ See Ibn Bajja, 1973; Ibn Bajja, 1978.

when Creator became the original all-creative power. Then the word of Divine Command, *Amr Rabbī*, as the word Kun, Become, descended as quantum of creative energy, which transformed itself into matter, as Water and Earth, and entered into them, by now its own creation, as Rūh, Spirit. Thus Kun represents a quantum of «initial Creative Energy» and Rūh, «Creative Energy manifest». In this light the Quranic concept of Creative Energy is best explained by the complex 'Asir-Rūh or Kun-Rūh, which simplified becomes Rūh. Then what is *Akasha* in Indian cosmology would be Rūh in Quranic cosmology. In either case it is more than heat which could not be taken seriously as Creative Energy. Then Quranic cosmology employs three elements, Creative Energy, Water and Earth, the latter two as material and forming the human corporeal system. The Qur'an (vi. 2) states: «God created man out of clay», when Clay=Earth. Further, the Qur'an (xxv. 54) maintains: «God created man from water».

The importance of Quranic cosmology is best realized when we compare it with the earlier Indian cosmology. It will be understood that the former explains creation of human life, while the latter, the existence of plant life, and these two are: (i) Quranic cosmology: Rūh, Water, Earth: (ii) Earlier Indian cosmology: Heat, Water, Earth.

The human being has five energy gates: Spirit Gate, Air Gate, Fire Gate, Water Gate and Earth Gate. The Spirit Gate is above the head. The Air Gate is at the throat. The Fire Gate is at the heart center. The Water Gate is at the genitals region. The Earth Gate is at the feet. The *Lataif* system of Sufis (*Ruh, Qalb, Sirr, Khafi, Akhfā*), close to *Chakra* in Yoga, corresponds to these energy gates³⁶.

EPILOGUE

The Arab-Muslim interaction with the Hellenistic, Alexandrian, Indian and Hermes' minds started the process of rationalist, illuminative and esoteric approaches in the world of Islam. A few of the primordial lessons which the Greeks had learned from the ancient world remained opaque to the consciousness of the medieval and the modern Muslim mind. The Atomistic and Anti-atomistic approaches in Muslim philosophical schools bear clear imprints of this back-

³⁶ See Sanaullah, 2010, pp. 629-652.

ground, if the diverse aspects of cosmology³⁷ (Hellenistic, Indian³⁸, Cabbalistic, etc.) are posited appropriately in comprehension of the basic structure of ideas on microcosm and macrocosm.

The Mu'tazilites were the early Rationalists who called themselves the «People of Unity and Justice». Wasil Ibn 'Ata seceded from the teachings of his master Hasan of Basra and started a rational process which has left its footprints on the shores of time. The Mu'tazilites dealt with numerous issues including God and His Attributes, Reason and Revelation, Free Will, Eternity of the Qur'an, Beatific vision. By dint of the speculative method they trespassed into the province of religion. The strength of Al-Ash'ari consists in perceiving that some violation had been committed but he could not understand the bounds of transgression. The latter constitutes the inherent limitation of the Ash'arite vision and methodology. The Mutazilite and Asharite postulations on Natural Elemental theory are to be posited in this context. Rationalism was an attempt to measure reality by reason alone; it implied the identity of the spheres of religion and philosophy, and strove to express faith in the form of concepts or terms of pure thought. It ignored the facts of human nature, and tended to disintegrate the solidarity of the Islamic Church. Hence the reaction³⁹. The Mu'tazilah, conceiving religion merely as a body of doctrine and ignoring it as a vital fact, took no notice of non-conceptual modes of approaching Reality and reduced religion to a mere system of logical concepts ending in a purely negative attitude⁴⁰.

For the Ash'arites, the world is composed of 'Jawahir' which are not further divisible. Since the creativity of God is limitless therefore the atoms cannot be finite. They are being created each moment. The essence of the atom is independent of its existence. The crux of

³⁷ See Craig, 2000; Nasr, 1993; Ramey, 1998; Mark Nowacki, 2007; Saliba, 1994a, 1994b and 1999.

³⁸ In the early eleventh century, al-Biruni had met several Indian scholars who believed in a heliocentric system. In his *Indica*, he discusses the theories on the Earth's rotation supported by Aryabhata, Brahmagupta and Varahamihira and other Indian astronomers, while in his *Canon Masudicus*, al-Biruni writes that Aryabhata's followers assigned the first movement from east to west to the Earth and a second movement from west to east to the fixed stars.

³⁹ Iqbal, *The Development of Metaphysics in Persia*, p. 54.

⁴⁰ Iqbal, *The Reconstruction of Religious Thought in Islam*, pp. 4-5.

the matter is that 'nothing has a stable nature'. Al-Ash'ari's interest was purely theological; but it was impossible to harmonize reason and revelation without making reference to the ultimate nature of reality. Al-Baqillani, therefore, made use of some purely metaphysical propositions in his theological investigation, and thus gave the school a metaphysical foundation⁴¹. But such a foundation was a pretension to true metaphysics for it lacked intellectual edifice. The orthodox reaction led by the Ash'arite then was, in reality, nothing more than the transfer of dialectic method to the defense of the authority of Divine Revelation. Yet, on the whole, the object of the Ash'arite movement was simply to defend orthodox opinion with the weapons of Greek Dialectic. The results of the Ash'arite reaction are visualized by Iqbal in these words. It is, therefore, clear that while the dialectic of Rationalism destroyed the personality of God, and reduced divinity to a bare indefinable universality, the antirationalist movement, though it preserved the dogma of personality, destroyed the external reality of nature. The Ash'arite reaction against Rationalism resulted not only in the development of a system of metaphysics most modern in some of its aspects, but also in completely breaking as under the worn out fetters of intellectual thralldom. For us, this state of affairs constitutes no strength of Ash'arism. Rather, it compounds its inherent powerlessness. The development of a system of metaphysics most modern in some of its aspects is no moment of rejoices. Strictly speaking, there cannot be a system of metaphysics. Also, the term development is alien to true metaphysics. The affinity which Iqbal finds between Ash'arite metaphysics and modern thought is precisely due to the reason that both Ash'arism and the modern world are devoid of intellectual foundations.

Ash'arite atomism is a reminder of the Divine Presence, or an introduction of the transcendent —of the marvellous, one might say— into everyday life... From the point of view of meta-physics, this is an unnecessary luxury, since the intellect has resources other than pious absurdity; but from the theological point of view it doubtless marks a victory.

The Muslim philosophical deliberations on nature and cosmos, like any other worldview held by any philosophical school, are marked by enormous debates, intrigues, in-depth cross-examinations

⁴¹ See al-Baqillani, 1986; Kitab at-Tamhid, 1957.

and critical analysis, which is typical to any approach that combines between science, metaphysics and theology in understanding the nature⁴².

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⁴² A particularly good example of the persisting confusion about the roles of science, metaphysics, and theology in understanding the nature, the universe and its origins is an essay by Atkins, distinguished physical chemist at Oxford University. Convinced that all human knowledge is reducible to the explanatory categories of the natural sciences, Atkins thinks that the domain of scientific discourse is truly limitless. Accordingly, he says that it is the task of science «to account for the emergence of everything from absolutely nothing. Not almost nothing, not a subatomic dust-like speck, but absolutely nothing. Nothing at all. Not even empty space», 1995, p. 131. For a criticism of this essay, see Carroll, 1996, pp. 19-22.

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