ATOMIC THEORY IN THE OLD UYGHUR TEXTS

Hacer Tokyürek

10.53478/TUBA.978-625-6110-22-9.ch10

Atomic Theory in the Old Uyghur Texts*

Hacer Tokyürek
Erciyes University

Abstract

The majority of Old Uyghur texts consist of religious works that were translated from languages such as Sogdian, Tocharian, Chinese, Tibetan, and Sanskrit, often related to Buddhism. These Buddhism-themed texts contain views on the foundation of the formation of the macro- and micro-cosmos or the smallest building block of matter, the atom. Most of these views are associated with the ancient Indian schools of thought. Particularly significant are the views on atom theory from the Vaiśeṣika school, which accepts atomism, and the Vaibhāṣika school of Hīnayāna Buddhism. In addition, it is possible to find the views of the Mādhyamika and Yogācāra schools, which are associated with Mahāyāna Buddhism and opposed to the atomic material theory, in these texts. The views of these schools in Old Uyghur texts are often presented within a religious framework. In this context, there are some terms related to atoms in Old Uyghur, such as *par(a)manu, ärtiŋü inčgä, kog, kıčmık*. These terms are interpreted in accordance with the Old Uyghur texts. Therefore, in texts that embrace an atomist approach, these terms carry the meaning of "atom, very small particle," whereas in texts that reject atomism, they express the meaning of "dust, very small particle." Consequently, the meanings of Old Uyghur words or terms are also subject to variation based on the religious sects and schools they are associated with.

Keywords
Atom theory, Ancient Indian schools, Old Uyghur, Par(a)manu, ärtiŋü inčgä,

* This paper is supported by Tübitak 1001 project number 122K196. I would like to thank TÜBİTAK
I would like to thank Erciyes University Dean of Research for providing the necessary infrastructure and laboratory facilities at the ArGePark research building.

Introduction

God wanted to be "known"[1] and thought that this would be possible by "creating", and thus with the onset of creation, existence began for other living beings. He created the universe(s), the stars, the moon and the sun, the planets, and thus the earth, objects, plants, animals, and humans. He also wanted to see "destruction", and "extinction". For this reason, "existence", and "destruction" emerged in everything. God's creations were perfect. The most perfect and curious among them was man, and man heard, saw, smelled, touched, tasted, and thought. Thus, this curious creature has struggled for centuries against the ideas of existence and non-existence. Throughout history, man has always been preoccupied with how existence and extinction occur and has put forward various thoughts about how the universe, the world, living things, and non-living things are created and destroyed. Some of these ideas were mythological and theological, while others were philosophical and scientific.

The introductory sentences above were written with a mythological and theological approach. However, it is known that man, who was looking for the hows of creation and destruction, later looked at them within the framework of philosophical and scientific theories and thus moved away from mythology and theological approaches. In the creation and destruction of the macrocosm and microcosm, first philosophical and then scientific theories were developed, the most important of which is the "atomic" theory.

It is thought that the atomic theory, which is an important subject of modern science today, first appeared in Ancient Greece. The main topic of discussion among ancient Greek philosophers was nature, and they asked many questions about it: What are the basic substances that make up natural substances? Do basic substances become sensory objects? *Thales* thinks that the origin of everything is water. According to him, everything is created from water and returns to water again. He says that the world is like a disk floating on water. There is no answer to the question of why Thales adopted this idea (Stace, 1920, p. 21; Pullman, 2001, pp. 13-14; Sarkar, 2022, p. 2). *Anaximander*

[1] "God brings the living out of the dead, brings the dead out of the living, and resurrects the earth in the spring after its death in winter. This is how you will be resurrected after death and taken out of your graves." (Kur'an-ı Kerim, Surah Ar-Rum, Verse 19); "I was an unknown hidden treasure, I wanted to be known, I created the people (the universe) so that I could be known" (Aclûnî, II, p. 132); "In the beginning God created the heavens and the earth. The place was formless and void, and darkness was over the surface of the deep, and the Spirit of God was moving over the the water." (Bible, Genesis, Verses 1-2).

agrees with Thales that the ultimate principle of all things is matter, but he does not call it water. In fact, he does not believe that it is any substance. He does not accept any of the four material elements, such as earth, water, fire, and air, as primitive elements. In general, the essential matter of an object is formless, indeterminate, and absolutely characterless (Stace, 1920, pp. 24-27; Pullman, 2001, p. 16; Sarkar, 2022, pp. 2; 25). *Anaximenes* accepts matter as having endless and uninterrupted motion and states that the first element of the world is air. Air is infinitely vast, constantly moving and changing. Since it is dynamic, the power resides in the air, and the movement of the earth originates from the air (Stace, 1920, p. 28; Pullman, 2001, pp. 17-18; Sarkar, 2022, p. 2). This movement enabled the universe to consist of air. He divides the process of this development into two parts: dilution and concentration. The air becomes thinner and turns into fire and air, and the carried fire turns into stars. Through the reverse process of condensation, air first turns into clouds and, with subsequent degrees of condensation, into water, soil, and rocks, respectively.

Over time, the earth evolves back into the air. Like *Anaximander, Anaximenes* defends the theory of "innumerable worlds", and these worlds, according to the traditional view, are consecutive (Stace, 1920, p. 28). *Pythagoreans* explain everything with numbers. Moreover, it is not possible to imagine a universe where there is no number. They point out that proportion, order, and harmony are the dominant notes of the universe. A number is the world from which the universe is made. The universe consists of odd and even opposites, which brings about limitation and limitlessness (Stace, 1920, pp. 34-36; Pullman, 2001, pp. 25-26). *Xenophanes* identifies god with the world, and the world is god, who is a sentient being even though he has no sense organs. Looking at the vast skies, he accepts the idea that "There is only one God." His god is immutable, indivisible, motionless, passionless, and undisturbed (Stace, 1920, p. 42). According to him, he thinks that "Everything is one" and "There is one God". This is eternal; he thinks that the world was created from the sea, and then the world will sink into the sea, but the world will rise again from the sea, and a new human race will be created (Stace, 1920, p. 42; Pullman, 2001: p. 20; Sarkar, 2022, pp. 2; 26; 109). According to *Parmenides*, there is only existence, non-existence does not exist and is unthinkable. Absolute reality is existence; non-existence is unreal. The world of sense is unreal, illusory, and only an appearance. Only "existence" really exists. For *Parmenides*, the only reality, the first principle of things, is "existence", which is not completely confused with non-existence and is

completely excluded from any formation (Stace, 1920, p. 44; Pullman, 2001, pp. 21-22). Existence has no origin or destruction; it can never arise from nothingness and cannot be destroyed.

What exists remains the same (Sarkar, 2022, pp. 2; 27; 28). *Zeno* did not develop any philosophical thought, but he supported Parmenides' doctrine of existence. He opposed multiplicity and movement and proved that multiplicity and movement were impossible. *Zeno* wanted to show that if multiplicity and movement were accepted as real, a contradictory result would be achieved (Stace, 1920, pp. 53-55; Sarkar, 2022, pp. 2; 28). *Heraclitus* acts as the exact opposite of *Parmenides* and *Zeno* and according to him, there is only "Being". Existence is a permanent illusion; these are all illusions. Heraclitus not only rejected any absolute permanence but also pointed out that the relative permanence of things is illusory. According to him, everything is constantly changing and renewing. Objects are constantly changing and never the same again. This is an indication that both existence and non-existence are equal. Origin is the transition from non-existence to existence.

Death is the transition from existence into non-existence. Then, "being" includes only the elements of existence and non-existence and refers to the shift from one state to the other. According to *Heraclitus*, the basic principle is "fire". All objects are created from fire; this world is one with everything, not created by God or man. This world is eternal, and it is a fire that will live forever. Everything is born from fire; the end of everything is it; fire is the basic element. Heraclitus also claims that all elements can be transformed. According to him, the first element, fire, transforms itself into the air, air into water, and water into the soil, and while he calls this the "downward path", he calls its opposite transformation the "upward path" (Stace, 1920, pp. 73-78; Pullman, 2001, p. 19; Sarkar, 2022, pp. 3; 26, 28-30). *Empedocles* argues that an object as a whole arises or disappears, but objects composed of matter have no origin and destruction; they are not created and cannot be destroyed. *Empedocles* refers to the elements as the "root of all things." The combination and separation of elements involves the movement of particles, and some force of motion must be present to account for this. *Empedocles* rejects this. For him, matter is absolutely dead and lifeless, without any principles of motion within itself. Therefore, it must be assumed that forces act on matter from outside. For this, love and hate or harmony and disagreement are accepted.

Everything in the world consists of the combination and separation of four elements, but these four basic elements have no origin. For this theory to develop, it must be shown that all properties based on the position and arrangement of particles are composed of exactly four elements (Stace, 1920, pp. 82-84; Pullman, 2001, pp. 22-23; Sarkar, 2022, pp. 3-4; 30-31). *Anaxagoras* is also among the defenders of primitive matter. He is in stark contrast to the Milesians, monists who consistently attributed this quality to a single environment. Starting from the doctrine that nothing can come into being from nothing and that nothing can be destroyed, he declared that everything that exists contains infinitesimal particles that bear the qualities of all other beings: "There is a little piece of everything in everything." He called these particles omoiomer. Therefore, according to him, prime substances were infinite in quality and quantity. The unique essence of the Milesians is replaced by a set of qualities contained in infinitesimal particles, and the change resulting from their blend and separation eliminates the need for their formation and destruction. All objects in nature contain all possible *omoiomers* but in variable proportions. How a particular object looks depends on which particular type of *omoiomer* is dominant (Pullman, 2001, p. 24).

The founder of atomic philosophy is generally considered to be *Leucippus*. Democritus appeared much later than Leucippus, and both accepted the atomic theory. *Leucippus* and *Democritus* developed *Empedocles*' particle theory. According to *Leucippus* and *Democritus*, if we divide matter over and over again, the atom remains, which is the only thing that cannot be divided. The atom is the ultimate unit of matter. The number of these atoms is infinite and very small. Therefore, we cannot perceive it with our sense organs. *Leucippus* and *Democritus* do not accept four primitive elements; they argue that there is only one type of matter: the atom. Atoms have no qualities. Atoms are solid. They differ from each other in size and shape. These are too small to see. They are shaped like a circle, triangle, or quadrilateral, and each one is different. There is no reason why these shapes are different. Atoms are infinite and cannot be destroyed.

Atomists argue that no external force is needed for primordial movement. The endless movement of atoms is self-sufficient. Everything arises from a completely blind mechanical cause. *Leucippus* thinks that no external force or motive force is required for the initial movement. In the beginning, the atom is in the void, or empty space, and this physical world is created from it. In

atomic philosophy, the beginningless and endless movement of atoms is self-sufficient in explaining the origin of the world. Atomists think that any movement is inevitable. *Leucippus* states that nothing is without a reason; everything has a reason and a necessity. *Democritus* also agrees with *Leucippus*. *Democritus* claims that nothing happens by chance; on the contrary, everything happens according to the laws of nature. Atoms are in constant motion, hitting each other in infinite space and collapsing, causing them to move in different directions. Democritus thought that atoms had hooks and grooves and that they could stick together. Atoms moving in infinite space collide with each other and bounce back; atoms come into close contact with other atoms; and some atoms move away while others cling to each other. Thus, objects are formed. He also thinks that there would be no movement without space. There is no empty space, and there is no absolute absence in the existing object because the truly existing object is absolute plenitude. It is not filled with a substance but is infinite in number. It is not visible due to its subtlety. Additionally, *Democritus* explains the doctrine of primary and secondary qualities. Shape, size, and extension are primary or fundamental attributes, while color, temperature, smell, and taste are secondary attributes of an object. Democritus thinks that secondary qualities do not actually exist in objects but that these qualities arise from our sense organs. Primary qualities already exist in the object. *Melissus* does not accept that atoms can be infinite and countless.

The Greek atomists were not only materialists but also mechanical. In other words, they believe that the world and humans are governed by mechanical forces. They argue that everything is causal. Nothing is accidental; everything happens according to the laws of nature. *Democritus* defined human mental action as the presence of a certain life force in the body and called it the "soul". Like other external objects in the world, the soul consists of atoms. However, there is a difference between the atoms of objects and the atoms of the soul. The atoms that make up the soul are round. The soul is composed of round atoms, as it is suitable for penetrating objects and moving. The soul is a composition of fiery atoms that are smooth, subtle, and mobile. These fiery atoms are abundant in humans. Democritus thinks that there is a special connection between life and heat. The surrounding air pressure causes soul atoms to move out of the body, but other soul atoms enter the body through the air we breathe. Human life depends on this uninterrupted renewal. Spirit atoms are miserable in the face of death. In other words, Democritus believes that the soul consists of atoms and consciousness is a physical process. Atoms

exist throughout the universe among animals, plants, and other things. Although he believed in the existence of the soul, *Democritus*, who thought that there were atoms in the soul, was a strict materialist. Thus, atomists opposed gods and religions. God has no role in the materialist and mechanical philosophy of the atomists (Stace, 1920, pp. 86-92; Pullman, 2001, pp. 31-36; Sarkar, 2022, pp. 2-4; 31-38).

While the atomic theory had an important place in Greek philosophy, this theory was also discussed in Indian philosophy and gave rise to many ideas. Accordingly, there are two different systems in the Indian philosophical system: *āstika*, which accepts the existence of god, and *nāstika*, which denies the existence of god. However, this distinction is also interpreted as accepting or rejecting the Vedic texts rather than accepting or rejecting the existence of God. Those with *Āstika*, that is, orthodox structure, are listed as *Nyāya*, *Vaiśeṣika, Sāṁkhya, Yoga, Mīmāṁsā,* and *Vedānta*, and these are called ṣaḍdarśana. *Nāstika*, that is, heterodox ones, are *Cārvāka, Buddhists,* and *Jainas* (Sarkar, 2022, p. 4). It is difficult to consider *Cārvākas* as atomists or anti-atomists. While Jainas are definitely atomists, Buddhists have two different views: atomist and anti-atomist. While Hīnayāna Buddhism is atomist, *Mahāyāna Buddhism* is anti-atomist. *Hīnayāna* believes in the reality of the external world and that everything is made up of atoms. *Mahāyāna*, on the other hand, harshly rejects the reality of the external World. *Sāṁkhya* and *Vedānta* reject the atomic theory.

Yogists also do not subscribe to the atomic theory, and the reason why they do not subscribe to this theory is entirely because they accept the epistemology and metaphysics of *Sāṁkhya* with its twenty-five principles. Both schools of *Nyāya-Vaiśeṣika* and *Mīmāṁsā* are atomists (Gangopadhyaya, 1980, pp. 2-6). The metaphysical doctrine of the *Cārvākas* is considered materialism, and they constitute the material world from four elements (*caturbhūta*) called earth, water, fire, and air. These four elements do not have atoms; they are infinite, but when they come together, they create something that is not infinite. These have only transformations but not destruction, and their combination provides the creation of this world and everything in it. According to the *Cārvākas*, the laws of nature (*svabhāva*) are the sole cause of diversity in the world. They say that the continuous manifestation of energy in matter constitutes *svabhāva*. *Svabhāva niyam* is the law of energy underlying the four elements. Four elements come together to form the basis of a different world. Again, when these four elements

separate from each other, it destroys everything that exists. According to the *Cārvākas*, consciousness is only the product of these four elements. They claim that the material world was created accidentally and mechanically with the help of these four elements. Consciousness is only a quality of the body (Sarkar, 2022, pp. 4-5). Jainas, on the other hand, attribute everything to matter (*pudgala*) and argue that all matter consists of atoms. Each atom occupies a point in space, but the matter is either in gross or subtle form.

In its subtle state, its countless atoms occupy the space of one larger atom. Atoms are eternal in terms of matter. Everything we see, touch, hear, and drink is pudgala. Matter is the basis of the physical world. Everything physical is produced from pudgala, except the soul and space (Gangopadhyaya, 1980, p. 7). According to *Jainas*, there are two types of matter: 1. Atom, namely, *aṇu* or *paramāṇu*; 2. Compound, namely, *skandha*. According to them, the part of matter that cannot be divided is called an atom. An atom is the ultimate limit of division; it is very small, infinite, and formless. It cannot be created or destroyed. Each atom occupies only one point in space. Although atoms are shapeless, they are the basis of the objects they form. Atoms are not perceived because they are shapeless and homogeneous; there is no qualitative difference between them. The way they are all perceived is the same, and they are not permanent and fixed; they can change and be improved. *Jainas* accept that atoms can attract and repel, and they argue that the creation of all material objects is possible through the connection of atoms for mutual attraction. When two or more atoms come together, they form compounds, or skandhas. These compounds also form union, that is, *saṁghāta*. *Skandhas* occur when one of the atoms is sticky and the other is dry, or when both are different, and in fact, the union is achieved when the atoms have different qualities. Jainas accept the attraction and repulsion forces of atoms. They claim that the movement of atoms can also occur through space, *dharma* "law" and *adharma* "chaos". Mind/consciousness, speech, life, and breath are the products of matter, namely, the atom. *Dvyaṇuka*[2] *skandha* depends on the union of atoms. In this way, many skandhas are created. Every perceptible object is a *skandha*, and the material/physical world as a whole is considered the *mahāskandha* "great unified" (Sarkar, 2022, pp. 5-6).

Two important schools of atomistic *Hīnayāna Buddhism* are the *Vaibhāṣika* and *Sautrāntika* schools. These accept the existence or reality of external

[2] union of two atoms

objects. However, while Vaibhāṣikas say that we can know external objects directly, *Sautrāntika* claims that this can be achieved through inference. These schools accept both the external world and the mental world. That's why they are called *Sarvāstivāndis*. They talk about conditionality (samskṛta) and unconditionality (*asamskṛta*), in which there are five skandhas of the law of *samskṛta*. Of these five skandhas, the *rūpa-skandha* "shape component" is related to atomic theory. Accordingly, both *Vaibhāṣika* and *Sautrāntika* schools adopt the atomic theory. According to them, rūpa-skandha accepts the existence of four elements, such as earth, water, fire, and wind or air. Earth is solid, water is fluid, fire is hot, and air is mobile. According to *Vaibhāṣika* and *Sautrāntika*, the outer world is created from the atoms of these four elements. *Vasubandhu*, the founder of the *Yogācāra* school of philosophy, believes that the smallest particle of rūpa is the atom that cannot be pierced, taken, or thrown. *Vaibhāṣika* and *Sautrāntika* accept that matter is a four-layered composition consisting of color, taste, smell, and contact, and the atom, or paramāṇu, is the unit with these four qualities. *Paramāṇu* cannot be perceived. When seven *paramāṇu* combine, *aṇu* is formed, and only *aṇu* can be perceived. When atoms come together, one atom remains in the center, and the others remain around it. There are two types of atoms: *dravya paramāṇu* (simple) and *samghāta paramāṇu* (compound). Additionally, atoms have two types of properties: natural (*svabhāva*) and derived (*upādāya*). Again, four material elements have four natural properties: solidity, stickiness, heat, and movement. There are five sensory properties in these material elements, expressed as *rūpa, rasa, gandha, sparśa*, and *śabda* (Gangopadhyaya, 1980, pp. 10-13; Sarkar, 2022, pp. 6, 9, 57-64). In addition, according to *Vaibhāṣikas* who do not accept the idea of *guṇa*, all *rūpas* are just a combination of atoms, each of a special type, and since they are composite in nature, they can be equivalent to matter in some way. No single sense atom or object atom is capable of producing awareness on its own, because all forms of awareness are related to the whole (Gangopadhyaya, 1980, p. 13; Sarkar, 2022, p. 61).

Nyāya-Vaiśeṣikas are also one of the important āstika systems of Indian philosophy. According to the *Vaiśeṣikas*, there are nine types of substances: earth, water, fire, air, ether, time, space, spirit, and consciousness. Matter may or may not be infinite. While the atoms of earth, water, fire, and air are infinite, their compound products are not infinite. In addition to these, ether, time, space, the soul, and consciousness are considered eternal. *Nyāya-Vaiśeṣika* asserts that there are four different types of atoms in the four

elements. These atoms are the smallest and indivisible units of material entities. Atoms are indivisible, infinite, partless, spherical, and imperceptible. There is no empty space within the atom, and atoms cannot enter into each other. They differ in quality from one another. Each atom has its own reality and unique attributes. The atoms of earth, water, fire, and air have different qualities, and these qualities, like the atoms themselves, are infinite. *Praśastapāda* discusses twenty-four qualities that consist of two types: *sāmānya*, which are "common qualities," and *viśeṣa*, which are "specific qualities." Common qualities exist in multiple substances, while specific qualities are unique to a single substance. The specific quality of the earth atom is smell; that of water is taste; that of fire is color; and that of air is touch. These atoms are inherently inert and stable. Atoms are set in motion and made active by an external force or an imperceptible power. According to the earlier *Vaiśeṣikas*, motion in atoms is generated by an imperceptible force called *adṛṣṭa*. This imperceptible force, *adṛṣṭa*, is considered to be the virtue and flaw of individual souls. In later developments, it is proposed that when God imparts motion to the atoms, they combine to form compound products. Atoms are the material cause of the physical world, and the imperceptible force, or God, is the efficient cause. According to *Vaiśeṣikas*, when the imperceptible force or God imparts motion to atoms, two atoms combine to form dvyaṇuka, three atoms combine to form tryaṇuka, and the triad is the smallest perceptible unit of matter. An active quaternary combines to form caturaṇuka, and quaternaries combine with each other to form larger objects. In this context, *Nyāya-Vaiśeṣikas* expresses that atoms of the same type can combine themselves to form binary, triad, etc., but it is stated that atoms of different types cannot combine with each other (Gangopadhyaya, 1980, pp. 17-21; Sarkar, 2022, pp. 7-9). Furthermore, the *Nyāya-Vaiśeṣikas* accepted a separate category called quality or guṇa. This quality or guṇa, while found in matter, is entirely distinct from matter. The five objects of the senses belong to it. According to them, matter is composed of atoms but not composed of *guṇas* (Sarkar, 2022, p. 61).

Another of the *āstika* systems in Indian philosophy is *Mimāṁsā*. *Mimāṁsā* has two schools: *Bhāṭṭa* and *Prābhākara*. The founder of the *Bhāṭṭa* school is *Kumārila Bhāṭṭa*, while *Prābhākara Miśra* founded the *Prābhākara* school. According to *Kumārila Bhāṭṭa*, substance (*dravya*) is a positive category, and matter is composed of eleven essentials, including earth, water, fire, air, ether, self, consciousness, time, space, darkness, and sound. Earth, water, fire, air, and ether are created from atoms. According to him, compound things are

composed of atoms. He accepts the atom as the ultimate unit of matter, but his explanation does not clearly specify whether the ultimate unit of matter is the atom or triads (*tryaṇuka*). *Manameyodaya* rejects the atom as the ultimate unit and instead accepts triads as the ultimate unit. Matter is one of the eight categories recognized by *Prābhākara*. There are nine types of matter, including earth, water, fire, air, ether, self, consciousness, time, and space. Even when earth, water, fire, and air are not atomic, they can still be perceived (Sarkar, 2022, p. 8).

Since the end of the 9th century, many Islamic scholars have adopted atomic theory and interpreted the nature of objects and the role of the atom in the formation of matter. During this period, the person who first put forward the atomic theory was *Abū al-Hudhayl al-'Allāf*. Adopting the theory of atomism, *Abū al-Hudhayl al-'Allāf* swears that everything consists of indivisible parts called *jawahir*, which is the plural of the word *jawhar*. He thinks that each jawhar has no qualities other than existing within itself and occupying space. This is Mu'tazilite's theory of atomism. They are of the opinion that bodies consist of parts, the smallest of which is jawhar, and that they cannot be divided further (Elkaisy-Friemuth, 2017, p. 43). While Badawi states that *Abū al-Hudhayl* was influenced by the ancient Greek and Indian atomists while making his definition of an atom, he leans more towards the view that he knew it from the translation of Greek books that were going on at that time (Elkaisy-Friemuth, 2017, p. 181).

On the other hand, some Mu'tazilite scholars, such as *al-Naẓẓām* (d. 836/845) and other theologians from the Baghdad sect, predict that the atom can be divided to a large extent, leading to the theory of the infinity of the world. These particles come together from side to side with certain abilities, and these abilities are successively built into them (Elkaisy-Friemuth, 2017, p. 47). Kalām interpretations include clear and visible atomic ideas and naturalistic philosophy. These comments can be classified into three aspects. These are: (a) the doctrine that objects or bodies are formed from a series of coincidences; (b) the doctrine that things or sensible bodies consist of bundles of material bodies penetrating each other; and (c) the doctrine that bodies are composed of atoms and natural accidents. Created according to *Ḍirār ibn 'Amr* (d. 200/815), *Ḥafṣ al-Fard* (fl. ca. 195/810), and *al-Ḥusayn al-Najjār* (d. 220-230/835-845), adherents of the first doctrine The world consists only of accidents and therefore, the objects of the world consist of a bundle of accidents that determine their qualities and properties. Those who

accepted the second theory can be listed as *Ḥishām ibn al-Ḥakam* (d. 179/795?), *al-Aṣamm* (d. ca. 200/815), *İbrāhīm ibn Sayyār al-Naẓẓam* (d. ca. 220-230/835-845), and their followers. The second theory posits that the created world is composed of bodies, with objects being bundles of interpenetrating material bodies that define their properties and qualities. The third doctrine, widely accepted by theologians, asserts that the created world consists of solid atoms and their inherent accidents, determining the properties of objects. Also, atoms may spontaneously combine within themselves to form larger units, like the human body, which is considered a living compound. Atomism, the third doctrine focusing on the nature and qualities of things, was the dominant and defining feature of Kalām cosmology (Dhanani, 1994, pp. 4-5). *ʻAbd al-Jabbār*, a Muʻtazilite theologian, developed the theory of atomism while interpreting human nature.

According to him, God, who is the first cause of all objects, must be absolutely free from matter and accidents because if God's existence included atoms and accidents, He would have a beginning and an end, like all objects. Therefore, if God is proven to be the first cause, then God must be immaterial, having no relation to matter. This crucial element in God's nature has two main consequences: First, just as accidents are related to bodies, as explained above, not all of God's attributes can be related to Him. Secondly, God is immutable as he is entirely immaterial, accepting only growth and destruction as changes in matter (Elkaisy-Friemuth, 2017, p. 44). Man, like all other creatures, operates through various contingencies that remain within him. When he explains the nature of man, he believes that man, like all creation, is made up of indivisible pieces of land, and with him, many of the creatures called them the atom, or jawhar. He explains the determination element, which has the ability to transfer things to their kind, taking into account that matter can be made up of more than one atom (Elkaisy-Friemuth, 2017, p. 52). Accidents, by contrast, are made up of only one component or atom and trigger the elements of change that occur in matter. Traditional Kalāmists and Muʻtazilites adopted atomism because atomism adopted only one duality between God and the world. It is a fact that nothing spreads on its own and without an external stimulus that will ignite or reinforce it. The atom has the internal capacity to disrupt the existing structure of an entity. Nothing exists, therefore nothing moves by itself, except God; an He often creates accidents that give the world the power to move (Elkaisy-Friemuth, 2017, pp. 152-162). In addition, scholars such as *Al-*

Asha'rī, *Mu'ammer*, and *Abū 'Alī el-Jubbā'ī* also see the jawhar substance as an atom (Dhanani, 1994, pp. 180).

The atomic theory, which plays a significant role in modern physics and chemistry, became a subject of scientific investigation again in the 18th century. Chemists started to discuss matter and how it undergoes changes. They combined substances to create new materials and analyzed how matter changes. They found that some substances couldn't be further divided into simpler substances and realized that all matter is composed of elements. An element is a substance consisting of a single type of atom. As a result, the atomic theory that entered the laboratory in modern science was developed with new theories by scientists like John Dalton, William Crookes, Joseph John Thomson, Ernest Rutherford, Niels Bohr, Erwin Schrödinger, Louis de Broglie, Werner Heisenberg, Max Planck, Albert Einstein, Dmitri Mendeleev, Francis Aston, James Chadwick, Enrico Fermi, and others. These theories, developed after the discovery of the heavy nucleus inside the atom, revealed that the atom could be broken down, and its fundamental particles were identified as electrons, protons, and neutrons (Ronan, 2003, pp. 548-572). In the subsequent process, Otto Hahn and Lise Meitner discovered that a neutron could split the nucleus of an atom (Sime, 1998, pp. 80-81). Later on, research related to atoms gained momentum.

It has been determined that the atomic theory, a brief history of which is presented above, is also found in Old Uyghur Turkish texts, and in this study, the place of atomic theory in Old Uyghur is revealed based on these texts, which are translation-copyright texts. When their state collapsed in 840, the majority of the Uyghurs came to the Turfan region and encountered the Buddhist Sogdians, Tocharians, and Chinese there. In addition, it is known that Buddhism has existed among the Uyghurs since the Kokturk State period. The Uyghurs, who made Manichaeism the official state religion in 762, quickly adopted Buddhism in the Turfan region after 840 and translated many texts related to Buddhism from Chinese, Tocharian, Sogdian and Sanskrit into Uyghur (Wilkens, 2016a, pp. 191-225). As an example of these translated texts, the original Chinese text of the *Altun Yaruk Sudur* text, which was translated into Old Uyghur by *Şinko Şeli Tutuŋ* in the 11th century, was translated by *I-tsing* (Yi Jing) in 703. The first translation of this text was made in 417 by *Dharmakṣema*, who came to China in 414, and the second was created by *Pao-ku* in 597 (Emmerick, 2016, p. XII). *The Biography of Xuan Zang*, which was translated from Chinese into Uyghur by *Şinko Şeli Tutuŋ* in

the 11th century, also describes the pilgrimage of Chinese pilgrim *Xuan Zang* to India between 629 and 645, and the visit contains a lot of religious, cultural, and social information. The original text of the *Abhidharmakośa* text, which is not known exactly when it was translated into Old Uyghur but is thought to have been translated in the 11th century, is Sanskrit. This text was written by *Vasubandhu* in the 4th or 5th century. This text was translated into Chinese by *Paramārtha* in the 6th century and again by *Xuan Zang* in the 7th century (Sangpo&de La Vallée Poussin, 2012, p. 92). The Old Uyghur version is a translation of the Chinese text. The DKPAM text is a text about the ten sins in Buddhism, translated from Tocharian into Old Uyghur. Although it is not known when this text was translated, it seems that its language is older than the works translated by *Şinko Şeli Tutuŋ* listed above (Wilkens, 2016b, p. 9). Therefore, this period is a period in which there are many works related to Buddhism, and it is possible to multiply these works. In this article, no comparison will be made with modern science, but an examination and evaluation will be made based on sample texts according to the understanding of the period. Additionally, the meanings of the Old Uyghur terms will be clearly elucidated.

Atom in Old Uyghur: par(a)manu, ärtiŋü inčgä, kog, kıčmık

Most of the Old Uyghur texts are translations from languages such as Sogdian, Tocharian, Chinese, and Sanskrit, and they primarily consist of Buddhist content. The majority of the ideas in these translated texts are linked to the religious and philosophical structures of the nations from which they were translated. Consequently, the original texts from which the Uyghur texts were translated hold special significance. Additionally, the thought system found in Old Uyghur texts is related not only to the Buddhist thought system but also to the philosophical systems of India and China. In this paper, the focus will be on the concept of the atom, particularly on the atomistic thought of *Vaiśeṣika* and *Hīnayāna*, as well as the rejection of atomism in *Mahāyāna* thought. In this context, three different words in Old Uyghur texts convey the meaning of "atom." It is possible to list these as *par(a)manu* < Tocharian A/B *paramāṇu* ~ *paramānu* < Sanskrit *paramāṇu* "atom, particle," (Wilkens, 2021, p. 551), *kog* "atom, particle, dust" (Wilkens, 2021, p. 389) and *kıčmık* "atom, particle, dust" (Wilkens, 2021, p. 368) in Old Uyghur. These words can be used independently and can also appear together in texts. Accordingly, there is important information related to atomic theory in *Xuan Zang's Biography*

8. In this section, *Xuan Zang* criticizes a Chinese scholar named *Lü Cai* and provides some information related to atoms.

> Taishō.2053.50.0265b14-17: **勝論立常極微數乃無窮。體唯極小。後漸和合生諸子微。數則倍減於常微。體又倍增於父母。迄乎終已體遍大千。究其所窮數唯是一。**
>
> HT8.1150-1163: *takı ymä vaišašikelıg bahšilar nomınta ärtiŋü inčgä mäŋü par(a)manu sanın alkınčsız ol tözi yana ärtiŋü kičigk(i)yä ol, ken ärü arü birlä kavišıp ogul kız par(a)manug turgurdačı ol, ogul kız [par(a)manug] tugurdukta sanı sakıšı [yitlindäči ol, san sa]kıš yitlintüktä ög kaŋ par(a)m[a]nu üstälür, iši küdöki tükäginčäkätägi tözi ulug miŋ yertinčüdä tözü yadılur, tüpgärsär anıŋ tüpin sanı yalŋuz bir tetir tep munčulayu sözleyür* "Furthermore, the teachings of the Vaiśeṣika masters claim the following: The number of extremely subtle, infinite atoms is inexhaustible. The essence/substance of these atoms is also very small. Then, gradually, they combine to produce subsidiary atoms/child atoms/particles. When they have produced subsidiary atoms/child atoms/particles, and when their number reaches zero, the parent atoms multiply until the end of the multiplication process, and their substances/essences spread throughout every part of the great universe. In essence, if you look into it (the matter), there is only one."

VS.560-565: *takı ymä vaišašikelıg bahšılar monınta ärtiŋü inčgä meŋü parmanu sanın alkınčsız ol tözi yänä ärtiŋü kičigk(i)yä ol ken ärü ärü birlä kavišıp ogul kız parmanug turgurtačı ol* "And again, in the teachings of the Vaiśeṣika masters, it is said: Atoms are infinite in number, extremely subtle, and permanent particles. The essence of these atoms is also quite small. Then, gradually, they combine, and the particles of atoms will emerge."

Here, a comparison has been made between the Chinese text of *Xuan Zang's Biography* and the Uyghur text, and the understanding of the Uyghur terms has been assisted by the Chinese text. In the Chinese text, 勝論 *shenglun* corresponds to "Vaiśeṣika-śāstra," which is fully represented in Old Uyghur as *vaišašike* "Vaiśeṣika," referring to the Vaiśeṣika school from ancient Indian traditions. The terms related to atoms in both Chinese and Old Uyghur texts are as follows. It is an equivalence of the Chinese words 極微 *jiwei* "atom, very thin" (Giles, 1912, pp. 99&859, 1516&12586), the Uyghur *ärtiŋü inčgä* "very thin, very subtle" and *par(a)manu* "atom, very subtle". The striking point in the texts is that the expression 極微 *jiwei* is encountered in the Uyghur text with both the Turkic word *ärtiŋü inčgä* and the Sanskrit word *par(a)manu*. Besides, another noteworthy point is Old Uyghur calls *ogul kız par(a)manu*

"subsidiary atoms/child atoms/particles", Chinese calls 諸子微 *zhuzi wei* "child atom" (Giles, 1912, pp. 322&2571, 1524&12317, 1516&12586), again Old Uyghur names *ög kaŋ par(a)m[a]nu* "the parent atoms." The Chinese expression 父母 *fumu* "parent" (Giles, 1912, pp. 466&3736, 998&8067) is used. An important term in this text is the Old Uyghur word töz, for which the Chinese 體 *ti* "body, substance" (Giles, 1912, pp. 1363&11025), "the essence of something, *bhāva, ātman, sva-bhāva, dhātu, dravya*"[3] is shown. Based on the above Chinese and Uyghur texts, the characteristics of atoms according to the *Vaiśeṣika* school's explanation can be summarized as follows: Atoms are extremely thin, infinite in number, and inexhaustible. The substance of these atoms is very small. They gradually combine to produce subsidiary atoms, and when their number reaches zero, parent atoms multiply. As a result of the collision of these atoms, the substances of atoms spread throughout the entire universe, and everything is ultimately composed of a single substance. In general, according to the Vaiśeṣika school's view, atoms are indivisible, infinite, partless, spherical, and imperceptible. There is no empty space within the atom, and atoms cannot enter into each other (Sarkar, 2022, p. 7), also they are the ultimate constituents of all objects (Chakrabarty, 1973, p. 14). They are part of an approach that posits that they are the cause and effect of everything that exists.

The ultimate causes or constituents of all large material objects are these subtle subatomic particles (*paramāṇus*). The hierarchical arrangement of these particles coming together is considered the material cause of the visible universe by these systems. Of course, the senses and īśvara are shown as two instrumental or efficient causes (Chakrabarty, 1973, p. 16). According to *Kaṇāda's Vaiśeṣika sūtra*, knowledge is divided into seven categories. These categories are *dravya* (substance), *guṇa* (quality), *karma* (action), *sāmānya* (generality), *viśeṣa* (particularity), *samavāya* (inherence), and the subsequently added *abhāva* (non-existence) (Gangopadhyaya, 1980, p. 156). A substance is the basis of qualities and actions but is distinct from both. There are nine substances. The first five of these, air, water, fire, earth, and ether, are referred to as physical elements, and all except ether are composed of four types of atoms. These atoms are the indivisible and indestructible particles of matter and possess unique qualities such as smell, taste, color, touch, and sound. Atoms are the indivisible components of matter; they are

[3] DDB: 體 | body (buddhism-dict.net) [Date of access: 10.10.2023]

infinite, and they are uncreated. According to *Kaṇāda*, atoms are so tiny that they cannot be perceived. He believed in the imperceptibility of atoms because, in his view, perceptible entities are destructible, so he associated the eternal nature of atoms with their imperceptibility. Ether, space, and time are infinite, pervasive and imperceptible substances. The mind is infinite but as small as an atom, and it is directly or indirectly related to all physical functions of the body. The self is eternal. The individual self is internally perceived by the individual's mind.

The world, its composition, and decomposition, as well as the origins and destruction of objects in the world, are explained to be created from atoms. Atoms cannot move on their own; the source of their motion is the invisible forces that operate according to the law of causation (Chakrabarty, 1973, pp. 23-24). In addition, atoms are moved by an invisible force (*adṛṣṭa*) or by God, and two atoms combine to form a dyad (*dvyaṇuka*). The dyad cannot be perceived, but it is active. When three active dyads combine, they form a triad (*tryaṇuka*). A triad is the smallest perceivable particle. A quartad (*caturaṇuka*), which is active, is formed from the combination of four triads. Quartads combine with each other to create larger compound matter. Thus, atoms of the same type combine to form dyads, triads, and so on, but atoms of different types cannot combine (Sarkar, 2022, p. 7). The Old Uyghur expression *ogul kız par(a)manu* "subsidiary atoms/child atoms/particles" likely represents dyads, triads, quartads, and so on, formed by atoms of the same type coming together. Similarly, *ög kaŋ par(a)m[a]nu* "the parent atoms" probably represents the parent atoms or the fundamental atoms. In fact, the Old Uyghur text goes on to mention the multiplication of these atoms, emphasizing that the essence of matter is "one." Furthermore, the Old Uyghur text expresses that matter, or atoms, spreads throughout the entire universe. The following text, quoted from the *Abhidharma*, is also significant in expressing the views of the *Vaiśeṣikas* regarding atoms.

> Üİ.99b14-100a1: *yana bir bahšı sözlär čın kertü munda etigsiz ärsär vaysešikilıg bahšılar sözlägüči par(a)manu bag bolur etigsiz tep* "Once again, a teacher says: Indeed, if the situation here is unconditional, the atom bond, as the Vaiśeṣika school teachers have said, becomes unconditional or unattached."

Here, *par(a)manu* "atom" is described as having the quality of being uncombined, unconditional, or *asaṃskṛta*. As mentioned earlier, the *Vaiśeṣikas*, in contrast to other Indian thinkers, accept the existence of ether and assert that matter consists of five elements, which they call *pañca-bhuta*.

Unlike the other elements, ether is singular and eternal, having no parts. In other words, it has no atoms (Sarkar, 2022, p. 73). Ether is an indivisible and infinite substance (Sarkar, 2022, p. 87). So, the other four elements are composite, meaning they are associated with atoms. The process by which other atoms combine to become visible was previously explained. According to the Vaiśeṣikas, for something to be a substance, like the substance of *ākāśa*/ether, it is not necessary to have matter inside it. At the same time, just like *ākāśa*/ether, atoms are also eternal. When describing matter, the *Vaiśeṣikas* talk about its motion and quality. Something that is not eternal is destroyed either due to the destruction of its material cause, meaning its components, or due to the disintegration of its components. For example, a piece of cloth is lost when its threads are destroyed or when the specific arrangement of its threads is disrupted. However, an atom has no material cause or component; hence, it must be eternal. The conditions for the visibility of matter are that it exists in many matters or that it is composite (Gangopadhyaya, 1980, p. 122). However, an atom is individually indivisible and uncomposite. According to the *Vaiśeṣikas*, an atom is unconditional but forms visibility by combining within itself. Thus, the creation or destruction of an object or matter is entirely related to the combination and dissolution of atoms. In addition to all of this, the following text is quoted from the tradition of *Sarvāstivāda-Vaibhāṣika*, which is a branch of *Hīnayāna Buddhism* and comes from the Abhidharma tradition. The excerpt from the text describing the formation of the world is as follows:

> DKPAM.4451-4470/BT37.07899-07917: *kayu bo tört divip yertinčülär ol birisi miŋär miŋär bolsar ol tämin čaturdivipig atlıg yerinčü uguši tep atanur: kayu ol čaturdivipig yertinčü ugušı: yänä miŋär yertinčü ugušları bolsar tämin ök čuḍik atlıg baštınkı kičig miŋ yertinčü tep atanur: kayu ol čuḍik atlıg kičig miŋ yertinčü yänä miŋär bolsarlar tämin ök divasahasirip iki miŋ orton yertinčü tep atanur: ol iki miŋ orton yertinčülär: yänä miŋär bolsarlar tämin üč miŋ ulug miŋ yertinčü yer suv tep tetir: bo munı täg käŋ ulug üč miŋ ulug miŋ yertinčü yär suvda toz tuprak parmanu kog kıčmık ot yäm sanınca nara urugı täg tolu bošgutlug bošgutsuz sortapan sakrdagam anagam arhant pratikabut tüzgärinčsiz burhanlar bolsarlar* "If each of these four continents were a thousand times a thousand, only then would it be called the system of the four continents. When this system of four continents is present in a thousand world systems (multiplied by a thousand), only then it is called 'cūḍika,' meaning initially a small thousand worlds. If these small thousand worlds, called cūḍika, are present a thousand times, then one speaks of a 'dvisāhasra,' that is, two thousand, a middle world. If each of these two thousand middle worlds is present a thousand times, then it is called 'the three thousand large thousand

> worlds.' If there were as many śaikṣas, aśaikṣas, srotāpannas, sakṛdāgāmins, anāgāmins, arhats, pratyekabuddhas and mysterious Buddhas on earth as there are dust or paramāṇus (atoms)"

The above text explains the formation of the world, which consists of four continents, according to Buddhist cosmology. Although an infinite number is mentioned for religious figures in the text, this explanation is essential for us, as it is used to indicate that the entire world is filled with *paramāṇu*, meaning atoms. As mentioned earlier, the DKPAM text is written based on the views of the *Vaibhāṣika* school. The *Vaibhāṣika* school is a branch of the Sarvāstivāda school. In this context, it can be said that the Vaibhāṣika school accepts the existence of separate entities in the mind and external objects. They believe that external objects are directly known and that there is no need for inference (Sarkar, 2022, p. 58). *Vaibhāṣikas*, who accept the reality of the external world, recognize two types of objects: external (*bāhya*) and internal (*abhyantara*). The term "external object" refers to the object composed of *bhūta*, meaning elements, and *bhautika*, meaning physical elements. "Internal object" refers to citta, which encompasses intellect and everything associated with it. Vaibhāṣikas acknowledge the existence of four elements: earth, water, fire, and air. *Vaibhāṣikas* assert that these four elements are atomic, with each having distinct characteristics. They believe that earth atoms possess hardness, water atoms have stickiness, fire atoms manifest heat, and air atoms represent motion. When these atoms come together, they give rise to the formation of mundane objects. *Vaibhāṣikas* hold the belief that both matter and mind exist, and according to them, matter and mind are composed of these four elements. Dharma, in their perspective, is an elemental component. Vaibhāṣikas classify seventy-five dharmas into *saṁskaṛta* (compounded) and *asaṁskaṛta* (uncompounded) categories. *Saṁskaṛta dharmas* are further categorized into four groups by *Vaibhāṣikas*: *rūpa* (matter), *citta* (mind), *caitta* (thought/mental), and *cittaviprayukta* (non-mental). *Rūpa* pertains to material entities and includes eleven types: the five sensory organs, the five corresponding objects of the senses, and *avijñapti* (beyond thought, the sky). *Vaibhāṣikas* perceive the five sensory objects as compounds of atoms. The following text is also from the DKPAM text.

> DKPAM.3729-3744: *anta ötrü yertinčü yer suv täprämišin körüp maitre bodis(a)t(a)v yašomaitre bodis(a)t(a)v birlä kök kalık yolınča yorıyu k(ä)ltilär .. ötrü maitre bodis(a)t(a)v inčä tep [tedi] .. tözün yašomaitr(e)-y-a bo č(a)stane älig bäg säziksiz bo tün ök alku yäklärig barča bulun yıŋak sačgay bo t(ä)ŋrilär yoksuz ämgänürlär .. birök yagız yer arkasıntaki topraknıŋ par(a)manu kog kıčmuk sanı näčä ärsär .. yänä ymä alku tınlıglarnıŋ sanı sakıšı näčä täñlig*

bol[sar nä]čä täŋlig kalın küčlüg yavl(a)k yäk i[čgäk] bolsarlar bodis(a)t(a)v ugušlug elig bägniñ 'äŋ mıntın ätözüntäki bir ävin tüšinä ymä ada tuda tägürgäli uguluk ärmäzlär "Afterward, seeing the shaking of the Earth, Bodhisattva Maitreya, accompanied by Bodhisattva Yaśomitra, descended from the sky, walking through the air. Then, Bodhisattva Maitreya said to Yaśomitra, 'Noble Yaśomitra, tonight, without a doubt, this King Castana will scatter demons everywhere. These gods are enduring torment in vain. Even if the number of these demons were as numerous as the atoms of the black earth and the entire count of living beings, no matter how vast, powerful, or wicked they might be, they could not harm even a single hair of a Bodhisattva's body from a noble lineage.'"

DKPAM.131-140/BT37.00607-00615: *kök kalıkdakı yagız yer arkasıntakı topraknıŋ näčä täŋlig kog kıčmık sanı sakıšı ärsär: anča täŋlig tınlıglar üč yavlak yollarta tugarlar: kačan birök tuggalı äŋ ašnu ugrıntakı ačıg ämgäklärig täginür* "As many atoms as there are in the sky and underground, an equal number of living beings are born in three unfortunate life forms, and being born here, they suffer pain."

The mentioned *Yaśomitra* in the text is a commentator on the *Abhidharmakośa* (Mano, 1970, p. 22; Skilling, 2000, p. 329). Therefore, the text is associated with the Abhidharma tradition. In fact, the *Vaibhaṣika* school is also affiliated with the Abhidharma school. Even though the above text talks about something different, the expressions here *topraknıŋ par(a)manu kog kıčmık sanı* "the atomic number of the earth" and *kök kalıkdaki kog kıčmık sanı sakıšı* "the number$_2$ of atoms in the sky" are mentioned, and here the atoms of the elements are mentioned along with the multiplicity of the number of atoms. Actually, everything is composed of atoms. According to the *Vaibhāṣika* school, external objects are created from the atoms of the four elements: earth, water, fire, and air. Atoms are momentary, existing both visibly and invisibly. While they do not accept atomic contact, they do accept the accumulation of atoms. Atoms can never exist alone; they always exist in clusters. Earth, water, fire, and air each have four different qualities. Among atoms, the only difference is in quality; there is no difference in quantity. Although the world is not mechanically created from atoms, it is created for a specific purpose. It is also different from atoms and the soul.

The self is nothing more than a discontinuous series of mental and physical processes (Sarkar, 2022, p. 9). *Vaibhāṣikas* do not consider *ākāśa*/ether as one of the elements. These four material elements are also atomic. Although ether elements are considered to be composed of atoms, they are kept separate because they do not form an object and are not seen in the external

world. External objects are real clusters of atoms. *Vaibhāṣikas* assert that atoms have six sides but are still one because they claim that the space inside an atom cannot be divided (Sarkar, 2022, p. 62). In fact, Buddhists say that the atom is not without parts but with parts (Sarkar, 2022, 91). Although Buddhist assertion that atoms are divisible is similar to some modern scientific theories, these similarities are limited. While Buddhists view atoms as inexhaustible particles, they believe that beneath these particles are smaller particles, which can be compared to the six subatomic particles discovered in modern science, such as quarks or leptons. However, the Buddhist understanding of atoms is embedded in a complex philosophical and religious context, distinct from the subatomic particles in modern science. Buddhists consider atoms not only as the fundamental building blocks of matter but also as part of karmic interactions. Therefore, interactions between atoms are significant not only on the physical level but also on the spiritual or karmic level. Hence, the Buddhist atomic understanding, while sharing similarities with science, is evaluated within a broader religious and philosophical framework.

> Taishō.0235.08.0752b09-13: 所以者何。佛説微塵衆則非微塵衆。是名微塵衆。世尊。如來所説　三千大千世界則非世界。是名世界。何以故。若世界實有者則是一合相。如來説一合相則非一合相。是名一合相。須菩提。

> BT28. D.116-126*: yana inčä tep y(a)rlıkadı kayu ol üč miŋ ulug miŋ yertinčü yer suv ärsär kertüdin kälmiš yertinčü ärmäz tep yarlıkayur üčün yertinčü tep tetir munta üč miŋ ulug miŋ yertinčü yer suv temäk üze par(a)manular yıgını üzä bütmiš igid b(ä)lgülüg yertinčüg ukıtur yertinčü yer suv ärmäz temäk üzä yertinčü tözin čın kertü ärmäzin ukıtur anın yertinčü yer suv tetir tep temäk üzä birikmäk yertinčüg tükäl bilgä bilig t(ä)ŋri t(ä)ŋrisi burhan yeläyü at üzä yertinčü ärür tep yarlıkamıš yörügüg ukıtur* "He preached like this again: "For whatever three thousand and great thousand worlds exist, the Tathāgata has taught that this is not one world. By speaking of three thousand and great thousand worlds, he illustrates the false world of signs resulting from the accumulation of atoms; by speaking of non-existence, he explains that the regions of the world, the true origin of the world, are not real and true. By saying, 'Therefore, this is a region of the world,' he conveys the explanation taught by the God of Gods, the wise Buddha."

When the Chinese and Old Uyghur texts are examined in general, it can be observed that the text describes that the external world is composed of a collection of atoms. In the Chinese text, the phrase 微塵衆 *weichen zhong* (Giles, 1912, pp. 1561&12586, 73&661, 363&2900) corresponds to the Old Uyghur expression *par(a)manular yıgını* "a heap of atoms or a collection of

atoms," signifying the aggregation of an infinite number of particles. According to the Buddhist understanding in this text, the external world is indeed a heap of atoms, but this external world is illusory. In the Buddhist perspective, the external world is entirely an illusory realm. According to them, everything is like froth; consciousness perceives them, but consciousness is also like a magician's illusion. In short, everything is a mere illusion (Harvey, 2013, pp. 58-59). The text below is also from the Abhidharmakośa.

> Üİ.102a14-18: 一師云*bir bahšı sözlär kök kalık bir ärür bolmaz bölgäli adırtlagalı tep* 有部一師云*sarva-astivadni'kaylıg bir bahšı sözlär kök kalık uučsuz kıdıgsız ärür bir bir parmanuta 'äŋäyü bar kök kalık parmanu uučsuz kıdıgsız üčün anın kök kalık yme ök uučsuz kıdıgsız ärür tep* "A teacher has said, "The sky is one; it cannot be divided and distinguished." However, a teacher from the Sarvāstivāda school says, "The sky is boundless; there is sky specifically in each atom. Since the atom is boundless, the sky is also boundless."
>
> Üİ.102a18-102b9: *mundata ulatı alku bahšılarnıŋ sözlämiši muntag bälgülär üzä sözlär bo kök kalıkta alku nomlar yaruk yašuk ukulur üčün anın atamıš ol kök kalık tep* 疏主云 *ästiramate bahšı sözlär birök sözläsär sizlär kök kalık bir ärür bolmaz bölgäli adırtlagalı tep nätägin bolur sözlägäli alku nomlar anda tüzü yapa yaruk yašuk ukulur üčün tep birök sözläsär sizlär bir bir par(a)manuta 'äŋäyü bar kök kalık tep inčip nätägin parmanu ülüšindäki kök kalıkta alku nomlar yaruk yašuk ukulur anın bo iki bahšılarnıŋ kayu sözlämiš abipirayı üze adırtlıg otgurak bililmäti bo kök kalıknıŋ tözlüg tözsüz bolmaklıg yörügi* "With these and all the other teachers' signs "They say: 'This sky was called the sky because all the dharmas were clearly understood from this sky." Sthiramati Master says, "If you say, 'The sky is one; it cannot be divided and distinguished,' how can you then say, 'It is called the sky because all dharmas are perfectly understood in it?' If you say, 'There is sky/ether specifically in each atom,' in this case, how can all dharmas be distinctly understood in the sky within the atom?' Therefore, the statements of these two teachers did not convey the precise and clear meaning of whether this sky is substantial or insubstantial."

The *Abhidharmakośa* is primarily based on the *Sarvāstivāda* Abhidharma tradition. According to the *Abhidharmakośa*, atoms are the smallest particles. Buddhism, in addition to its theory of the structure of the universe, also presents ideas about elements and atoms. The *Abhidharmakośa*, dating back to the fifth century, discusses elements and atoms in a section titled "Analyzing the World (*dhātu*)." These Buddhist texts describe atoms as the

"smallest, indivisible, indestructible, ungraspable part of matter." They are neither long nor short, neither square nor round. Atoms cannot be analyzed, seen, heard, or touched. Individually, *paramāṇus* cannot exist, but when many *paramāṇus* come together, they can occupy space and undergo change. Only when seven *paramāṇus* come together does a single aṇu, or molecule, form. These seven *paramāṇus* exist in seven directions: center, east, west, south, north, down, and up. Thus, increasingly larger particles are formed, eventually giving rise to the perceptible matter. This process occurs through the power of *adṛṣṭa*, the "unseen force." All matter is composed of the "four great elements": earth, water, fire, and wind. While *paramāṇus* make up the matter, the four great elements seem like energies. They are not the physical earth, water, fire, and wind that we see or feel, even though they occupy space. Energy, the four great elements, make up *paramāṇus*, and it is only when a large number of *paramāṇus* come together that they create earth, water, fire, air, or any existing substance. Each element has its own unique characteristics and functions.

The Earth is solid and provides support to objects; water is moist and can dissolve everything; fire is hot and can boil everything; and air is mobile and causes the growth of objects. Elements do not manifest in equal proportions in all types of substances. Some specific elements are found in abundance in one thing, while other elements are abundant in something else. Therefore, some substances are solid, some are flexible, some are moist, and some are hot. Another explanation is that in any substance, the four elements are evenly mixed, but only a particular element among them has the power to determine the characteristics of that substance (Sadakata, 1997, pp. 20-22; 185). While *Vaiśeṣikas* see the atom as indivisible, Buddhist thinkers claim it is divisible. Hence, a divisible atom must contain the ether. According to Buddhism, an indivisible entity, such as an atom, can never be logically established because atoms always permeate the ether. Ether spreads both outside and inside an atom. That is to say, atoms are composed of the parts penetrated by the ether and are not infinite. *Vaiśeṣikas*, on the other hand, talk about ether as an omnipresent substance. Therefore, since ether is a substance found everywhere, it must adhere both inside and outside an atom, and it is understood that there is nothing more than the inside and outside of the atom. Thus, it must be accepted that the atom has parts. If we do not accept the atom as having parts, then ether cannot exist (Sarkar, 2022, p. 91). If the existence of similar substances in the creation of the universe, the Earth, and humans is accepted, and their contents are examined, it will be understood that these substances are generally composed of elements.

Therefore, the essence of the entire universe, Earth, and humans is elements. Everything is produced from them, and elements exist without change, they are infinite, unobstructed, united, interpenetrating, and pervasive. The external world depends on the five elements: earth, water, fire, air, and ether (Snodgrass, 1985, p. 373). The following text is also an excerpt from an Abhidharma text.

> Abhidharma.3112-3123: 一师云*bir bahšı sözlär kök kalık bir ärür bolmaz bölgäli adırtlagalı tep* 有部一师云*sarvaasdivat nikaylıg bir bahšı sözlär kök kalık uučsuz kıdıgsız ärür bir bir parmanuta äŋäyü bar kök kalık parmanu uučsuz kıdıgsız üčün anın kök kalık ymä ök uučsuz kıdıgsız ärür tep mundata ulatı alku bahšılarnıŋ sözlämiši muntag bälgülär üzä sözlär bo kök kalıkta alku nomlar yaruk yašuk ukulur üčün anın adamıš ol kök kalık tep* 疏主云 *ästiramati bahšı sözlär birök sözläsär sizlär kök kalık bir ärür bolmaz bölgäli adırtlagalı tep nätägin bolur sözlägäli alku nomlar anta tüzü yapa yaruk yašuk ukulur üčün tep birök sözläsär sizlär bir bir parmanuta äŋäyü bar kök kalık tep inčip nätägin parmanu ülüšindäki kök kalıkta alku nomlar yaruk yašuk ukulur* "A teacher says, 'Space is one. It is impossible to separate them.' A master of the Sarvāstivāda nikāya says, 'Space/ether is limitless, boundless. There is individual space/ether in each atom. Since the atom is boundless, space is also limitless, and that's why all masters have preached it with this feature: (that is) the laws are explained in this space, that's why they named it 'Space.' If you say, as Master Sthiramati did, 'Space is one and indivisible,' can you also say, 'All the laws are written and clear there?' How can all the laws be explained in the space within the atom?"

The text provides an important expression that sheds light on us: *sarvaasdivat nikay* "Sarvāstivāda nikāya," which means the *Sarvāstivāda* community. Therefore, the views expressed in the text are related to the perspective of the *Sarvāstivāda* School, which suggests that just as the atom is infinite, space/sky/ether is also infinite. It is understood from Sarvāstivāda's division of seventy-five dharmas into five groups that *ākāśa*, i.e. space/sky/emptiness/ether, is included in *asaṃskṛta dharma*. *Asaṃskṛta* means "unconditioned." (Dhammjoti, 2015, p. 42). However, it is clear from the following fact of Sarvāstivādin that "emptiness" (虛空 *xukong*) refers to unconditioned *ākāśa*. The Ābhidharmikas sharply distinguish *ākāśa* from ākāśa-dhātu (空界 *kongjie*), which is *rūpa* in nature (Dhammjoti, 2015, p. 221). According to the *Vaiśeṣika* view, the four atomic substances, fire, air, water, and earth, are physical materials. The self, time, space, and ether are infinite and intermingle with all material objects. Ether and the four atomic substances, either alone or in various combinations, constitute the fundamental constituents of material things and serve as their causes.

Substances are further categorized as eternal and non-eternal, with atoms, ether, time, space, self, and mind being eternal, while composite entities are non-eternal (Keith, 121, p. 185). In the continued text of the Old Uyghur, there is a reference to *ästiramati bahšı* "Master Sthiramati," which is why the views of the Yogācāra School, to which Sthiramati is affiliated, regarding atoms and the external world should be considered. According to the Mahāyāna Buddhism-based *Yogācāra* School, an "external" object can never be experienced separately from its parts, so it cannot exist as a single whole. It also cannot be created from its parts because these parts can be further broken down into their components and ultimately into atoms. However, atoms are defined as imperceivable, and therefore, the coarse objects composed of these imperceivable atoms are also imperceivable. Moreover, atoms cannot exist. If atoms are defined as the smallest units of physical reality, they cannot partially combine with other atoms because that would imply that atoms have parts and thus, in theory, the potential to be further divided. If they combine fully with other atoms, no matter how many atoms come together, they would still occupy only the space of a single atom and therefore remain imperceptible. In this view, neither atoms nor their combinations can exist. If objects were to exist independently as separate realities from their parts, then the entire object could be perceived all at once. Therefore, the only way to explain the perception of objects is through the analogy of a dream (Williams, 2009, p. 95). The following text is a small excerpt from a commentary on the *Vajracchedikā Sūtra*, an important scripture in the Mahāyāna tradition.

> Taishō.2732.85.8a26-29: 界塵何一以/報應亦同然/非因亦非果/誰後復誰先/事中通一合/理則兩俱捐/欲達無生路/應當識本源。
>
> BT28.C.520-526: *yertinčüli kog kıčmıklı nägü birtä öŋi ol tüšinli tıltagınlı nägü ymä inčip bir täg ol ärmäz tıltag tegülük ärmäz ymä tüš tegülük kim ol keni yana ymä kim ol öngräsi yertinčülük savda biriktürmäklig bir täg ärürlär kertü tözkä tägdüktä ikigüni birgärü ketärürlär* "Why are the world and a speck of dust different from each other? Why is the cause not one with the effect? There is no cause, and there is no effect. Who comes after, and who comes first? In the affairs of the world, they are a whole. When one reaches the truth, they become one."

In the text above, 塵 *chen* means "dust, dirt; this world, evil" (Giles, 1912, p. 73&661), which is greeted with *kog kıčmık* "dust" in Old Uyghur. The term *kog kıčmık* here differs from the previous texts and refers to a larger entity or a speck of dust, which is the larger state of an atom. This is because Mahāyāna Buddhism explicitly rejects atomism. The *Mādhyamika* and *Yogācāra* schools,

which are affiliated with Mahāyāna Buddhism, are opposed to the atomic matter theory (Majumdar, 2002, p. 66). The *Mādhyamika* School asserts that there is no such thing as matter or mind. Everything is empty, both the material world and the mental world are illusory. On the other hand, the Yogācāra School believes that only the mental world is real, while the material world is devoid of reality (Williams, 2009, 95; Sarkar, 2022, p. 57). In the above Old Uyghur text, it is emphasized that the world or the speck of dust, the cause or the result, the before or the after, in short, everything is indistinguishable from each other and that everything is essentially one. Kumarajiva, the author of the *Vajracchedikā Sūtra*, in line with the views of the *Mādhyamika* School, has put forward his ideas about the external world. According to this perspective, "since the object does not exist, consciousness does not exist." (Williams, 2009, p. 95). In addition, according to Mahāyāna Buddhism, everything in the external world is impermanent and subject to change. Everything in the external world has arisen as a result of various combinations. They are not self-existent but have arisen from the combination of other things (McGovern, 1919, p. 246). This approach is reminiscent of the story of King Milinda. King Milinda asked Nāgasena various questions about individuality, self, or the nature of the seen entity.

"If, most reverend Nāgasena, there be no permanent individuality involved in the matter, who is it, pray, who gives to you members of the Order your robes and food and lodging and necessaries for the sick? Who is it who enjoys such things when given? Who is it who lives a life of righteousness? Who is it who devotes himself to meditation? Who is it who attains to the goal of the Excellent Way, to the Nirvāna of Arahatship? And who is it who destroys living creatures? Who is it who takes what is not his own? Who is it who lives an evil life of worldly lusts, who speaks lies, who drinks strong drink, who (in a word) commits any one of the five sins which work out their bitter fruit even in this life? …'

'Or is it the nails, the teeth, the skin, the flesh, the nerves, the bones, the marrow, the kidneys…?'

And to each of these he answered no." (Davids, 1890, pp. 41-44).

Here, Milinda's questions to Nāgasena continue, and it is argued that there can be nothing "on its own," leading the discussion in this story to the idea of emptiness or absolute nothingness. Additionally, the following text is an example from the Altun Yaruk Sudur.

> Taishō.0665.16.0423a06: **所有過去一切佛/** 數同大地諸微塵/ 未來現在十方尊/ 亦如大地微塵衆。
>
> AYS.9402-9407/AY5.350.6-11: *ärtmiš üḍki burhanlar „ yagız yerkä tayaklıg „ par(a)manular sanınča „ ken käligmä üḍki amtıkı „ onṭın sıŋarkı burhanlar „ y(ä)mä ök k(a)ltı yerdäki „ kog kıčmıklar kolusınča* "The past Buddhas are as many as there are very small particles on Earth, and the future and present Buddhas in the ten directions are as numerous as the dust particles on the ground."

The Old Uyghur expressions *par(a)manular* and *kog kıčmıklar* used here are also interpreted as Chinese **微塵** *weichen* "extremely small particles" (Giles, 1912, pp. 1561&12586, 73&661). The use of different Old Uyghur words for the same Chinese expression in different places in the text is interesting. It is also noteworthy that the concept of atoms or very small particles is employed to make inferences about the numbers of past, present, and future Buddhas. The example from the Altun Yaruk Sudur text is written in accordance with the philosophy of Mahāyāna Buddhism. In this context, it would be more accurate to describe the words *par(a)manu* and *kog kıčmık* as "tiny particles" or "dust particles" rather than "atoms." because there is no idea of atoms in Mahāyāna Buddhism, and the expression in the Chinese text is defined as **微塵** *weichen* "extremely small particles". Again, the text below is quoted from Altun Yaruk Sudur.

> Taishō.0665.16.0410a27-28: **譬如虛空煙雲塵霧之所障蔽。若除屏已是空界淨非謂無空。**
>
> AYS.2777-2783/BT21.912-918: "*inčä kaltı bulıt toz tuman par(a)manular üzä köšiksiz tüz kök kalık ugušı nätäg arımıš süzülmiš ärsär ančulayu ok kök kalık ugušı artokrak arıg süzök bolur ol kök kalık ymä yok ärmäz bar tetir* "The space/ether element/void is pure, just as the entire space/ether element is cleansed (as) uncovered by clouds, dust, and fog particles. That space/ether does not exist; it exists."

The Old Uyghur term *par(a)manu* in this context is equivalent to the Chinese word **塵** *chen* "dust, dirt; this world, evil" (Giles, 1912, p. 73&661), and it is definitely not in the sense of "atom." Therefore, when analyzing terms in Old Uyghur texts, one should consider the sects and schools to which these texts are related and evaluate them accordingly.

Conclusion

The creation of the universe, the world, and humans has always been a subject of curiosity, leading many philosophers to develop significant theories on the matter. Ancient Greek and Indian philosophers made inferences regarding the existence or creation of the universe, the world, and especially matter, ultimately concluding that the smallest building block of matter is the "atom." The acceptance of atomic theory in the Islamic civilization coincided with the end of the 9th century. Kalāmists, who were probably influenced by the atomic theory of both Greek and Indian thinkers during this period, developed the theory. Besides, in Old Uyghur literary texts, which are predominantly based on translations or translations with original content, there are expressions related to atoms. These expressions include *par(a)manu* < TochA/B *paramāṇu* ~ *paramānu* < Skt. *paramāṇu*, which can be translated as "very fine, atom, dust," *ärtiŋü inčgä* meaning "very fine, very subtle, atom," *kog* for "atom, dust," and *kıčmık* for "atom, dust." When examining Old Uyghur texts, it becomes evident that in addition to the views of the Vaiśeṣika School on atoms, there are also references to the beliefs of the Sarvāstivāda-Vaibhāṣika School, which originated from the Abhidharma tradition of the Hīnayāna sect. The Old Uyghur words related to atoms can be found not only in the works that present the above-mentioned views but also in the Mahāyāna Buddhist texts that entirely reject atoms, such as the *Altun Yaruk Sudur* and *Vajracchedikā Sūtra*. In texts that accept atomism, these words are interpreted as "atoms," while in texts that reject atomism, they are interpreted as "dust" or "very small particles." In that case, the words used in Old Uyghur should be interpreted according to the views of the ancient Indian religious and cultural schools. Additionally, the importance of Chinese in interpreting these words should not be overlooked, and textual comparisons must be made. When comparing Chinese texts with Old Uyghur texts in this study, it is observed that different words related to atoms are used. Furthermore, despite originating from translated texts in Old Uyghur, there is information and terminology related to atomic theory, which is of great value from the perspective of the history of science. Finally, the atomic theory in Old Uyghur corresponds to Indian thought, originating from translated texts.

References

Aydın, İ. H. (2002). Kenz-i Mahfî. *Türkiye diyanet vakfı İslâm ansiklopedisi, 25. Cilt*, 258-259. Aclûnî

Barutçu, F. S. (1998). *Sthiramati'nin Vasubandhu'nun Abhidharmā kośa koşavardi şastirtakı çınkirtü yöröglerniñ kingürüsi'nden üç itigsizler, giriş-metin-tercüme-notlar-indeks, XXX. levha*. Türk Dil Kurumu Yayınları. (Üİİ)

Chakrabarty, D. (1973). *Vaiśeṣika-sūtra of Kaṇāda*. D.K. Printworld.

Davids, T. W. R. (1890). *The questions of king Milinda*. Dalton House.

Dhammajoti, K. L. (2015). *Sarvāstivāda Abhidharma*. Published in Hong Kong by The Buddha-Dharma Centre of Hong Kong.

Dhanani, A. (1994). *The physical theory of kalām, atoms, space, and void in Basrian mu'tazilī comology*. E.J. Brill.

Elkaisy-Friemuth, M. (2017). *God and Humans in Islamic Thought,* 'Abd al-Jabbār, Ibn Sīnā and al-Ghazālī. Rutledge.

Elmalı, M. (2022). *Daśakarmapathâvadânamâlâ: on günahın zincirleme hikâyesi*. TDK Yayınları. (DKPAM)

Elmalı, M. (2022). *Eski Uygurca dil bilgisi terimleri: vvibakti samaz*. TDK Yayınları. (VS)

Emmerick R. E. (2016). The Sutra of Golden Light: A Translation of the Suvarnabhasottamasutra (1st ed.).Motilal Banarsidass.

Gangopadhyaya, M. (1980). *Indian atomism: history and sources*. K.P. Bagchi & Company.

Giles, H. A. (1912). *A Chinese-English dictionary* [2nd ed.]. Revised & Enlarged.

Kaya, C. (2021). *Uygurca altun yaruk, giriş, metin ve dizin*. Türk Dil Kurumu Yayınları. (AYS)

Keith, A. B. (1921). *Indian logic and atomism, an exposition on the nyaya and vaiçeşika systems*. Clarendon Press.

Kur'an-ı Kerim. Türkiye Diyanet Vakfı Yayınları.

Majumdar, P.Kr. (2002). The Bauddha atomism. *《佛學與科學》3卷2期*. 65-67.

Majumdar, A. (2002). *Buddhist cosmology: philosophy and origins*. (Translated by Gaynor Sekimori). Kosei Publishing Co.

Mano, Ryūkai (1970). On the "three jñatās". *IBK 18* (2). 1042-1036 (21-27).

McGovern, Wm. M. (1919). Notes on mahayana buddhism. *The Monist*, Vol. 29, No. 2, 238-258.

Pullman, B. (2001). *The atom in the history of human thought*. (Translated by Axel Reisinger). Oxford University Press.

Ronan, C. A. (2003). *Bilim tarihi: dünya kültürlerinde bilimin tarihi ve gelişmesi*. (Translated by Ekmeleddin İhsanoğlu and Feza Günergun). Tübitak Yayınları.

Röhrborn, K. (1996). *Die alttürkische Xuanzang-biographie VIII*. nach der handschriftvon Paris, Peking und St. Petersburg sowie nach dem trankript von Annemarie v. Gabain, Harrassowitz Verlag Wiesbaden. (HT8)

Sangpo, L. & de La Vallée Poussin, L. (2012). *Abhidharmakośa-Bhāṣya of Vasubandhu: the treasury of the abhidharma and its (auto) oommentary, 1. Volume*. Motilal Banarsidass Publishers.

Sarkar, D. (2022). *Atamist from Indian and Greek perspective: a critical study*. (Unpublished Ph.D. dissertation), Raiganj University.

Shōgaito, M. (2008). ウイグル文 アビダルマ論書の文獻學的研究 *(Uyghur abhidharma texts: a philological study)*. Nakanishi Printing Co., Ltd. Kyotu Japan. (Abhidharma)

Sime, R. L. (1998). Lise meitner and the discovery of nuclear fission. *Scientific American*, Vol. 278, No. 1, 80-85.

Skilling, P. (2000). Vasubandhu and the vyākhyāyukti literature. *Journal of the International Association of Buddhist Studies*, Volume 23, Number 2, 297-350.

Snodgrass, A. (1985). *The symbolism of the stopa*. Seap.

Stace, W.T. (1920). *A critical history of Greek philosophy*. Macmillan and Co.

Taishō (1924-1935). 大正新脩大藏經 Taishō, shinshū daizōkyō. (prepared for publication: 高楠 順次 郎 Takakusu Junjirō, Watanabe Kaigyoku), Tōkyō.

The Holy Bible, Nashville, Tennessee: Holman Bible Publishers.

Uçar, E. (2009). *Altun yaruk sudur V. kitap Berlin koleksiyonundaki fragmanların transliterasyonu ve transkiripsiyonu açıklamalar ve dizin*. (Unpublished Ph.D. dissertation), Ege Üniversity Social Sciences Institute. (AY5)

Wilkens, J. (2001). *Die drei körper des buddha (trikāya) das dritte kapitel der uigurischen fassung des goldglanz-sūtras (Altun Yaruk Sudur)*. Brepols Publishers. (BT21)

Wilkens, J. (2016a). Buddhism in the West Uyghur Kingdom and Beyond. in: Transfer of Buddhism Across Central Asian Networks (7th to 13th Centuries) (ed.: Carmen Meinert). Brill.

Wilkens, J. (2016b). *Buddhistische erzählungen aus dem alten zentralasien edition der altuigurischen daśakarmapathāvadānamālā (3 volume)*. Brepols Publishers. (BT37)

Wilkens, J. (2021). *Handwörterbuch des altuigurischen: altuigurisch – Deutsch –Türkisch (eski Uygurcanın el sözlüğü: eski Uygurca – Almanca – Türkçe)*, Akademie der Wissenschaften zu Göttingen, erschienen im Universitätsverlag Göttingen.

Williams, P. (2009). *Mahāyāna buddhism: the doctrinal foundations* [2nd ed.]. Routledge, Taylor & Francis Group.

Yakup, A. (2011). *Prajñāpāramitā literature in old uyghur*. Brepols Publishers. (BT28)

Internet address:

DDB: 體 | body (buddhism-dict.net) [date of access: 10.10.2023]

About Author

Prof. Dr. Hacer TOKYÜREK | Erciyes University | htokyurek[at]hotmail.comORCID: 0000-0002-0008-1213

After completing her master's degree at Erciyes University, Institute of Social Sciences, Department of Old Turkish Language Science, in 2005, the researcher received her doctorate from the relevant department of the same university in 2011. Tokyürek, who worked as an assistant professor at Nevşehir Hacı Bektaş Veli University between 2011 and 2015, started working at Erciyes University in 2015. She became an associate professor in 2016 and then served as a guest lecturer at Shanghai International Studies University, China, between 2016 and 2018. The researcher, who returned to Türkiye in 2018, continued his duty at Erciyes University and was deemed worthy of the TÜBA GEBİP (Turkish Academy of Sciences-Outstanding Young Scientists Awards) award in 2019. She was appointed to the position of professor in 2021. Tokyürek's fields of study are on Old Turkic, Old Uyghur, Buddhism and Manichaeism. She is currently running a Tübitak 1001 project and an Adep project.