ESİR - ETHER - AETHER

Esîr, eski stoacıların ve günümüzde teozofların "aether" dedikleri, maddenin insanın beş duyusu ile algılayamadığı; katı, sıvı ve gaz hâllerine oranla yoğunluğu daha az, vibrasyonel hızı daha yüksek, daha süptil ve daha akışkan hâline verdikleri addır.

Ether teriminin kökeni, antik çağ inisiyasyonlarında kullanıldığı biçimiyle, aither veya aiether olarak da yazılan aether'dir. Eski Yunancada aether, kökeni olan "aitho" sözcüğünden de anlaşılabileceği gibi, "ateşli, parlak ve havadan daha süptil olan" anlamına gelmekteydi ve fiziksel bir mekanı ifade etmiyordu. Aether, antik çağın ezoterik öğretilerinde kimi zaman maddenin esîr denilen hâlini, kimi zaman da maddenin "ilk madde" (materia prima) denilen ilk, cevherî hâlini ifade etmek üzere kullanılıyordu. 1800'lü yıllarda bazı fizikçiler "mutlak gözlem çerçevesi"ni tarihsel nedenlerle "esir" olarak adlandırmıştı. Bu sadece kavramsal bir adlandırmaydı, ve antik Yunanda söz edilen esir değildi. Daha sonraları Albert Einstein'ın özel görelilik kuramı ile mutlak bir gözlem çerçevesinin olmadığı anlaşıldı.

Kısaca esîr ya da aether, maddenin algılanamayan dördüncü hâli olarak kabul edilmişti.

INGILIZCE KAYNAK BİLGİ

According to ancient and medieval science, **aether** (/ˈiːθər/, alternative spellings include *æther*, *aither*, and *ether*), also known as the **fifth element** or **quintessence**, is the material that fills the region of the universe beyond the terrestrial sphere.[1] The concept of aether was used in several theories to explain several natural phenomena, such as the propagation of light and gravity. In the late 19th century, physicists postulated that aether permeated space, providing a medium through which light could travel in a vacuum, but evidence for the presence of such a medium was not found in the Michelson–Morley experiment, and this result has been interpreted to mean that no luminiferous aether exists.[2]

Mythological origins[edit]

Main article: Aether (mythology)

See also: Empyrean

The word αἰθήρ (*aithḗr*) in Homeric Greek means "pure, fresh air" or "clear sky".[3] In Greek mythology, it was thought to be the pure essence

that the gods breathed, filling the space where they lived, analogous to the *air* breathed by mortals.[4] It is also personified as a deity, Aether, the son of Erebus and Nyx in traditional Greek mythology.[5] Aether is related to αἴθω "to incinerate",[6] and intransitive "to burn, to shine" (related is the name *Aithiopes* (Ethiopians; see Aethiopia), meaning "people with a burnt (black) visage").[7][8]

Fifth element[edit]

Medieval concept of the cosmos. The innermost spheres are the terrestrial spheres, while the outer are made of aether and contain the celestial bodies.

In Plato's *Timaeus* (58d) speaking about air, Plato mentions that "there is the most translucent kind which is called by the name of aether (αἰθήρ)"[9] but otherwise he adopted the classical system of four elements. Aristotle, who had been Plato's student at the Academy, agreed on this point with his former mentor, emphasizing additionally that fire has sometimes been mistaken for aether. However, in his Book *On the Heavens* he introduced a new "first" element to the system of the classical elements of Ionian philosophy. He noted that the four terrestrial classical elements were subject to change and naturally moved linearly. The first element however, located in the celestial regions and heavenly bodies, moved circularly and had none of the qualities the terrestrial classical elements had. It was neither hot nor cold, neither wet nor dry. With this addition the system of elements was extended to five and later commentators started referring to the new first one as the fifth and also called it *aether*, a word that Aristotle had used in *On the Heavens* and the *Meteorology*.[10]

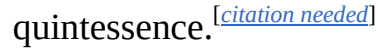
Aether differed from the four terrestrial elements; it was incapable of motion of quality or motion of quantity. Aether was only capable of local motion. Aether naturally moved in circles, and had no contrary, or unnatural, motion. Aristotle also stated that celestial spheres made of aether held the stars and planets. The idea of aethereal spheres moving

with natural circular motion led to Aristotle's explanation of the observed orbits of stars and planets in perfectly circular motion.[1][11]

Medieval scholastic philosophers granted *aether* changes of density, in which the bodies of the planets were considered to be more dense than the medium which filled the rest of the universe.[12] Robert Fludd stated that the aether was "subtler than light". Fludd cites the 3rd-century view of Plotinus, concerning the aether as penetrative and non-material.[13]

Quintessence[edit]

A stylized $\mathcal{Q}$ is sometimes used as a symbol for quintessence.[*citation needed*]



A symbol for quintessence in the works of Isaac Newton. Also abbreviated ⟨q̄⟩ and ⟨ē⟩.[14]

The symbol for aether in the works of Torbern Bergman (ca. 1775)

Quintessence ($\mathcal{Q}$) is the Latinate name of the fifth element used by medieval alchemists for a medium similar or identical to that thought to make up the heavenly bodies. It was noted that there was very little presence of quintessence within the terrestrial sphere. Due to the low presence of quintessence, earth could be affected by what takes place within the heavenly bodies.[15] This theory was developed in the 14th century text *The testament of Lullius*, attributed to Ramon Llull.[*citation needed*] The use of quintessence became popular within medieval alchemy. Quintessence stemmed from the medieval elemental system, which consisted of the four classical elements, and aether, or quintessence, in addition to two chemical elements representing metals: sulphur, "the stone which burns", which characterized the principle of combustibility, and mercury, which contained the idealized principle of metallic properties.

This elemental system spread rapidly throughout all of Europe and became popular with alchemists, especially in medicinal alchemy. Medicinal alchemy then sought to isolate quintessence and incorporate it within medicine and elixirs.[15] Due to quintessence's pure and heavenly quality, it was thought that through consumption one may rid oneself of any impurities or illnesses. In *The book of Quintessence*, a 15th-century English translation of a continental text, quintessence was used as a medicine for many of man's illnesses. A process given for the creation of quintessence is distillation of alcohol seven times.[16] Over the years, the term quintessence has become synonymous with elixirs, medicinal alchemy, and the philosopher's stone itself.[17]

Legacy[edit]

Main article: Aether theories

With the 18th century physics developments, physical models known as "aether theories" made use of a similar concept for the explanation of the propagation of electromagnetic and gravitational forces. As early as the 1670s, Newton used the idea of aether to help match observations to strict mechanical rules of his physics.[18][a] The early modern aether had little in common with the aether of classical elements from which the name was borrowed. These aether theories are considered to be scientifically obsolete, as the development of special relativity showed that Maxwell's equations do not require the aether for the transmission of these forces. Einstein noted that his own model which replaced these theories could itself be thought of as an aether, as it implied that the empty space between objects had its own physical properties.[20]

Despite the early modern aether models being superseded by general relativity, occasionally some physicists have attempted to reintroduce the concept of aether in an attempt to address perceived deficiencies in current physical models.[21] One proposed model of dark energy has been named "quintessence" by its proponents, in honor of the classical element.[22] This idea relates to the hypothetical form of dark energy postulated as an explanation of observations of an accelerating universe. It has also been called a fifth fundamental force.

Aether and light[edit]

Main article: Luminiferous aether

The motion of light was a long-standing investigation in physics for hundreds of years before the 20th century. The use of aether to describe this motion was popular during the 17th and 18th centuries, including a theory proposed by Johann II Bernoulli, who was recognized in 1736 with the prize of the French Academy. In his theory, all space is permeated by

aether containing "excessively small whirlpools". These whirlpools allow for aether to have a certain elasticity, transmitting vibrations from the corpuscular packets of light as they travel through.[23]

This theory of luminiferous aether would influence the wave theory of light proposed by Christiaan Huygens, in which light traveled in the form of longitudinal waves via an "omnipresent, perfectly elastic medium having zero density, called aether". At the time, it was thought that in order for light to travel through a vacuum, there must have been a medium filling the void through which it could propagate, as sound through air or ripples in a pool. Later, when it was proved that the nature of light wave is transverse instead of longitudinal, Huygens' theory was replaced by subsequent theories proposed by Maxwell, Einstein and de Broglie, which rejected the existence and necessity of aether to explain the various optical phenomena. These theories were supported by the results of the Michelson–Morley experiment in which evidence for the motion of aether was conclusively absent.[24] The results of the experiment influenced many physicists of the time and contributed to the eventual development of Einstein's theory of special relativity.[25]

Aether and gravitation[edit]

Jakob Bernoulli, *De gravitate aetheris*, 1683

In 1682, Jakob Bernoulli formulated the theory that the hardness of the bodies depended on the pressure of the aether.[26] Aether has been used in various gravitational theories as a medium to help explain gravitation and what causes it.

Sir Isaac Newton

A few years later, aether was used in one of Sir Isaac Newton's first published theories of gravitation, *Philosophiæ Naturalis Principia Mathematica* (the *Principia*, 1687). He based the whole description of

planetary motions on a theoretical law of dynamic interactions. He renounced standing attempts at accounting for this particular form of interaction between distant bodies by introducing a mechanism of propagation through an intervening medium.[27] He calls this intervening medium aether. In his aether model, Newton describes aether as a medium that "flows" continually downward toward the Earth's surface and is partially absorbed and partially diffused. This "circulation" of aether is what he associated the force of gravity with to help explain the action of gravity in a non-mechanical fashion.[27] This theory described different aether densities, creating an aether density gradient. His theory also explains that aether was dense within objects and rare without them. As particles of denser aether interacted with the rare aether they were attracted back to the dense aether much like cooling vapors of water are attracted back to each other to form water.[28] In the *Principia* he attempts to explain the elasticity and movement of aether by relating aether to his static model of fluids. This elastic interaction is what caused the pull of gravity to take place, according to this early theory, and allowed an explanation for action at a distance instead of action through direct contact. Newton also explained this changing rarity and density of aether in his letter to Robert Boyle in 1679.[28] He illustrated aether and its field around objects in this letter as well and used this as a way to inform Robert Boyle about his theory.[29] Although Newton eventually changed his theory of gravitation to one involving force and the laws of motion, his starting point for the modern understanding and explanation of gravity came from his original aether model on gravitation