

**Original article:**

***Kaifiyāt-i-Arba‘a As A Prime Cause of Physical Changes Of Matter***

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**Background and Objectives:** The study of the physical universe, its structure, dynamics, origin and evolution, and fate are still having the ground for further research. Cosmology is the biggest challenge from the ancient time till today for philosophers and thinkers. The Aristotle and other philosophers have given the fundamentals about the genesis of all living and non-living things. Their observations were based on naked eye examinations. They believe that the four primary qualities which are known as *Kaifiyāt-i-Arba‘a* in Arabic and Unani Medicine i.e. Heat, Cold, Moisture, and Dryness are mandatory for each reaction, and are responsible for genesis, destruction, putrefaction, changes and variations of all the things. For example; the lower temperature of the scrotum is necessary for the production of semen in the testicles. We cannot make Ice without maintaining the appropriate cold temperature. Similarly the evaporation of water cannot take place unless the water is warmed up by the appropriate heat. The aim of this study is to evaluate the role of four primary qualities regarding the physical changes and variations in all the things.

**Methods:** Literature related to four primary qualities of the matter (*Kaifiyāt-i-Arba‘a*) was surveyed from various classical Unani books, journals, periodicals, manuscripts, and online citations from the subject specific websites. Collected material was then analyzed and systematized in comprehensive manner. **Conclusion:** *Kaifiyāt-i-Arba‘a* are four primary qualities of the each matter i.e. Heat, Cold, Moisture, and Dryness. These are perceived by touch and tactile sensations only. These four qualities are responsible for destruction and putrefaction, build-up and break-down processes of each physical body.

**Keywords:** Matter; Physical changes; Destructions; *Kaifiyat-i-Arba*; Unani Medicine.

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**Introduction:**

Unani system of medicine is based on philosophy and it is holistic in approach. It is different compared to other system of medicine because of its fundamentals, principles and crucial concepts, for instance; concept of *Arkān-i-Arba‘a*, *Akhlāt*, *Mizāj* etc. *Kaifiyāt-i-Arba‘a* is one of the most important and primary concept in the system of Unani Medicine. *Kaifiyāt-i-Arba‘a* refers to the four primary qualities of matter which are perceived by *Hiss-i-Lamisa* (touch and tactile sensation), that is heat (*Harārat*), cold (*Burūdat*), moisture (*Ruḥūat*), and dryness (*Yubūsat*). For

the origin of life and genesis of the cosmos, the primary forms of matter are fire, air, water, and soil. Since, *Kaifiyāt-i-Arba‘a* are associated with these primary forms of matter, thus they become the prime cause of all the physical change and variation in matter. For example; water and air can adopt and be easily dispersed into different forms due to their moist quality, because in any object moisture is easily formed and dryness is formed with difficulty. Amongst the *Kaifiyāt-i-Arba‘a* two are active (heat and cold) and two are passive (moist and dry). All the natural changes are always the work of these *Kaifiyāt-i-Arba‘a*.

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When the heat and cold are masters into the matter then they generate a thing. The natural changes are introduced by these powers into the matter underlying a given thing when they are in a certain ratio to that matter which is the passive qualities that is moist and dry. Therefore, all the physical change and variation that took place in the body are the manifestation of *Kaifiyāt-i-Arba'a*.

According to Raban Tabri (810-859AD): *Kaifiyāt* are the qualities which are associated to the body; like, colour, odour, taste, heat, cold, dryness, Moistness etc.<sup>1</sup> *Kaifiyāt* are those qualities which are perceived by five external senses (*Ḥawās-i-Khamsa Zāhira*). These are sense of vision (*Ḥiss-i-Bāshira*), auditory sense (*Ḥiss-i-Sāmi'a*), sense of taste (*Ḥiss-i-Dhāiqā*), olfactory sense (*Ḥiss-i-Shāmmah*), sense of touch and tactile (*Ḥiss-i-Lāmisā*). For example, the taste of things is perceived by sense of taste and different smell or odour perceived by sense of olfaction but *Kaifiyāt-i-Arba'a* are the qualities which perceived by touch and tactile sensation (*Ḥiss-i-Lāmisā*).

Ibn-i-Sina (980-1037AD) says that since the prime qualities of *Arkān-i-Arba'a* are four, so in all the things *Mizāj* (Temperament) are produced by these power, however the physical change and variations in all the bodies are accomplished by *Kaifiyāt-i-Arba'a*.<sup>2,3</sup>

Amongst the *Arkān-i-Arba'a*, water and soil are heavier (*Saqīl*).<sup>4</sup> These two are responsible for genesis and stability of the organs. The organs have a more watery and earthy content which are heavy and cold in their quality. Air and fire are lighter and responsible for the motion and genesis of *Arwāḥ* (spirit, pneuma).<sup>4</sup>

Amongst the *Kaifiyāt-i-Arba'a*, two qualities i.e. the heat and the cold are active; and the other two i.e. the dry and moist are passive<sup>5</sup>. We can appreciate this better by looking at an example. In every case heat and Cold determine, conjoin and change things of the same kind and things of different kind, moistening, drying, hardening and softening them. While the things which are either dry or moist are the subjects of the determination and of the other affection enumerated. Heat and cold are active because congregating is essentially a species being active. Moist and dry are passive because it is in virtue of its being acted upon in a certain way that a thing is said to be easy to determine or difficult to determine.

#### **Perception Of The Active And Pasive Quality:**

Hakim Akbar Arzani mentions that the active quality heat and cold are perceived directly through

the touch and tactile sensation, but passive qualities dry and moist are not perceived directly.<sup>6</sup> Majusi (930-994AD) says that perception of both active and passive qualities are felt by touch and tactile sensation, but passive qualities are perceived by applying pressure and gripping additionally.<sup>7</sup>

#### **Characteristics Of Active Qualities:**

Active qualities are heat and cold and some of their specific characteristics are mentioned below.

- Heat causes *Laṭāfat* and *Khiffat* in any moist or dry object.<sup>5,6</sup> The word *Laṭīf* means the subtle in which contents have a thin consistency. *Khaffīf* means anything that has the natural tendency to the periphery. Fire and air are hot in quality.<sup>3,4,6</sup> That's why both fire and air have the tendency to move away from the centre and both are *Laṭīf* and *Khaffīf*.
- It Increases dryness in any moist object by evaporating their moisture.
- It becomes a cause of motion, hence every moved thing has a mover and quality of heat, if it is lost completely then their nature becomes at rest.
- It causes concoction of every matter and concoction is a sort of perfecting, hence due to lack of heat concoction is not completed.

#### **The Cold Quality Has Some Specific Characteristics:**

- Cold causes *Kathāfat* and *Thaqālat* in any moist or dry objects.<sup>6</sup> *Kathīf* means density in which the object has a thick consistency and strong bonding. *Thaqīl* refers to anything having tendency to move towards the centre. Water and soil are *Kathīf* and *Thaqīl* due to their cold quality, hence both have the tendency towards the centre or towards gravity.
- The act of condensation is enhanced in any moist object due to cold quality.
- Coldness becomes a cause of rest for natural bodies due to lack or absence of heat. So anything become at rest due to its cold nature. It may also cause Inconcoction which is always associated with cold quality or lack of heat.

#### **Characteristics Of Passive Qualities:**

- The qualities of any of the passive matter are moist (*Ruṭūbat*) and dry (*Yubūsat*).<sup>5, 8</sup> All bodies are composed of themselves and whichever predominates determine the nature of the body; thus some bodies partake more of the dry, others of the moist.

- Different forms are to be adopted and dispersed easily due to the moist and with difficulty due to dry quality of the objects. Hence, the moist is easily determined and the dry quality is determined with difficulty.
- For the moist quality, it is easy to separate and get unite but for the dry it is difficult to separate and unite. Hence, moist become a cause of continuity (*Itteṣāl* or to conjoin) and dry causes of discontinuity (*Tafarruq-i-Itteṣāl*) in matter.
- Moist and dry qualities are affected by heat and cold. Moist objects are evaporated by heat and condensed through the cold while dry objects are burnt by heat and solidify through the cold.
- Majusi says that the moist quality makes the body soft while dryness makes the body hard.<sup>7</sup> Anything which is made up of the dry and moist is necessarily either hard or soft. A hard thing is that whose surface does not yield into it and a soft thing is that whose does yields but not by interchange of place, like water.

**Effects of Kaiḥiyāt-i-Arba'a in Destruction and Putrefaction:**

All the natural and physical change is carried out through the *Kaiḥiyāt-i-Arba'a*. Destruction and putrefaction are the natural phenomena and are found not only in animals but also plants and in their parts. According to Aristotle putrefaction is the destruction of the peculiar and natural heat in any moist subject by external heat [heat of environment].<sup>9</sup> Putrefaction cannot take place until the objects have fluid content and whenever the external heat is higher than the heat of the moist object putrefaction takes place e.g. the milk is degraded easily in summer than the winter season; because in summer season, the heat of environment is greater than the heat of milk and that's why there is a need to boil the milk for their preservation. For everything that putrefy, their destruction ends in putrefaction, it begins by being moist and ends by being dry, e.g. putrefaction of dead body begins by being moist and ends by being dry.

Things that do not putrefy are those that which are frozen and also those which are boiling. The mechanism of a refrigerator is an example of preservation of the foods by freezing. In boiling the heat in the air is less than that in the object so it does not putrefy. In addition, things which are moving or flowing or having circulation are

less capable to putrefy than things at rest because heat produced by motion in the air is weaker than that is pre existing in the moving object. E.g. the water of sea, river and lakes which are flowing or in motion does not putrefy but the water in ponds may be degraded easily.

**Kaiḥiyāt-i-Arba'a And Isteḥāla:**

*Isteḥāla* is the manifestation of *Kaiḥiyāt-i-Arba'a* and actually it is the change of the active into the passive quality.<sup>1</sup>

Build up and breakdown process (*Koun* and *fasād*) are the kind of *Isteḥāla*. Both processes take place in the atom (*Jawhr*) of matter but *Isteḥāla* and change are always accompanied in the qualities of the object, e.g. *Isteḥāla* and change of heat into cold, sweetness become changed into bitterness.

*Isteḥāla* of a build up process is always done from the low to the high quality of things, e.g. seeds of the Dates give rise to a tree. *Isteḥāla* of breakdown process always happen from higher to the lower thing, e.g. destruction and putrefaction of the body into the smaller things.

Things having difference in only one quality either active or passive ones, their *Isteḥāla* becomes easy, e.g. *Isteḥāla* of water into air become easy. Since water is cold and moist in its quality and air is hot and moist, both have the same passive quality but have a difference in their active quality that is cold and hot, so it is easy for the water to be converted into the air and vice versa. Things that have difference in both the active and passive quality, their *Isteḥāla* take place with more difficulty, for example; *Isteḥāla* of water into the fire is difficult because both are different in active and passive quality that are cold and moist and hot and dry respectively. So *Isteḥāla* of the water into the fire is a more difficult process.

According to Ibn-i-Sina, all things which are affected by each other are similar with respect to matter but different in their qualities.<sup>2, 3</sup> A body does not get affected by another body until both are having similar quality. The capability of the body to accept different form is depends on their *Kaiḥiyāt-i-Arba'a*. Thus, the forms of the body changed after the changes in their qualities.

**Role of Kaiḥiyāt-i-Arba'a in Concoction and Inconcoction:**

Concoct means made by combining or mixing various ingredients. It also means boiled together or mature and fully developed.<sup>10</sup> Concoction is a sort of perfecting. Proper heat and moisture

are necessary for concoction but Inconcoction is an imperfect state due to lack of proper heat and this imperfect state is in the corresponding passive qualities i.e. moist and dry. According to Aristotle, Concoction is a process in which the natural and proper heat of an object perfects the corresponding passive qualities.<sup>9</sup> Concoction ensues whenever matter is having moisture and as long as the ratio between heat and moist exists in an object a thing maintain its nature. Things that undergo a process of concoction necessarily become thicker and hotter because the action of the heat is to make things more compact, thicker and drier. Concoction is due to proper heat and it has different kinds: ripening, boiling, and broiling while Inconcoction is due to coldness and its kinds are rawness, imperfect boiling and imperfect broiling.

Ripening is a sort of concoction; we used the word ripening when there is a concoction of the nutrients in the fruit. The seeds in fruit are able to reproduce the fruit in which they are found when the process of ripening is perfected by proper heat. That's why the word ripening is mostly applied to the fruit. However, many other thing that have undergone concoction are said to be 'ripe' the general character of the process being the same, though the word applied by an extension of meaning. When we noticed about the ripening of boils, they are ripe by the action of proper heat into their moisture. Hence, everything which undergoes the process of ripening they must be condensed from a spirituous into a watery state and from watery into an earthy state. Rawness is an imperfect concoction of the nutrients in the fruit, namely of the undetermined moisture. Everything which is raw contains water or spirit or both. Rawness will be an imperfect state and this state is due to lack of natural heat and its disproportion to the moisture that is undergoing the process of ripening. Water alone as liquid does not thicken without the admixture of some dry matter, so this proportion may be either due to defect of heat or to excess of the matter to be determined; hence the juice of the raw thing is thin, cold rather than hot and unfit for food or drink.

Boiling is a *Nudj* or concoction by moist heat of the indeterminate matter which is present as the moisture of the thing boiled. The indeterminate matter will be either spirituous or watery. The cause of concoction is the fire contained in the moisture because what is cooked in a frying-pan is broiled. For a thing that is being boiled, the moisture contained in it is drawn out of it by the heat in the liquid outside. Hence boiled meats are drier than broiled meat. Not every body admits of the process of boiling, if there is no moisture in it, it does not (for instance; stone), nor does it if there is moisture in it but the density of the body is too great for it to be mastered as in case of wood. It is true that the gold and wood and many other things are said to be boiled but the only bodies that can be boiled are those that contain moisture which can be acted on by the heat contained in the liquid outside.

Imperfect boiling is an Inconcoction of the undetermined matter in a body due to lack of heat in the surrounding liquid. The lack of heat implies the presence of the cold is either due to the lack of heat in the liquid or to the quantity of moisture in the object undergoing the process of boiling. In the process of boiling the inside becomes drier than the outside of an object and it is easy to heat the object uniformly.

Broiling is a concoction by dry foreign heat. In the case of broiling, the outer parts of the thing are the first to get dry through the affect of fire or heat and consequently get more intensely dry. In this way the outer pores contract due to dryness and the moisture in the thing cannot be secreted out but remains in the thing due to the closing of the pores, hence the outer portion becomes drier than the inner and it is difficult to heat the object uniformly. Now boiling and broiling are the artificial processes but the same general kind of thing is found in nature too. For instance; the concoction of the food in the body is like boiling because it takes place in a hot and moist medium and the agent is the heat of the body. So certain forms of indigestion are like imperfect boiling due to deficiency in the proper heat or to the quantity of water in the thing undergoing the process.

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