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ART AS A LANGUAGE FOR MUSLIM THINKERS: METAPHORICAL VS. LITERAL APPROACH

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Signifying bilateral relations between art and science, scientart includes three types of subjects: artistically-inclined science, science-minded art, and intertwined scientart activities, i.e., equally involved both artistic and scientific approaches. It is art that allows science to be held up against peoples' minds. And it is science that allows art to be held up against experimentation. Science includes, in this account, different disciplines such as metaphysics, cosmology, psychology, physics, medicine, and economics. And various branches of art such as painting, sculpture, music, and poetry are regarded as art, including novel and literature. This broader conception of art is derived from Farabian theory of art. Among Muslim thinkers, Suhrawardi and ibn Tufail are two major figures in the field. Having an intellectual grip, Suhrawardi conveys the issues of metaphysics, cosmology, and psychology with allegory and imagery fictions. He allegorizes, for instance, the nine spheres and the sublunary realm by the nine shells, eleven layers of a basin, eleven mountains surrounded by the Mount Qaf, sons, mills, the Tuba tree, the Twelve Workshops, and the Pearl-that-glow-by-night. In his unique novel called *Hay ibn Yaqzan*, ibn Tufail identifies and elaborates the issues of human anatomy, autopsy, and vivisection in a literal and non-figurative approach. Expressing autopsy in his novel, he constitutes an early supporter of dissection. Importance of scientart approach could be explained for Farabi. He posits that intelligible happiness and truths should be transferred to the imagination of people through allegory, analogy, and parallelism.

Keyword: Farabi, Suhrawardi, ibn Tufail, scientartist, novel, theory of art

1. Introduction

Shahab al-Din Yahya Suhrawardi (1154–1191) is portrayed as the founder of the philosophical School of Illumination in the Islamic East. And Abu Bakr ibn Tufail (c. 1105–1185) is reckoned as a polymath: physician, philosopher, theologian, astronomer, vizier, and court official. Beside being a Court Physician, ibn Tufail was abreast of anatomy of his time. Expressing human anatomy, autopsy, and vivisection in his novel, ibn Tufail constitutes an early supporter of autopsy and vivisection.

I will highlight another face of them into the bargain. They would be counted as a scientartist. I will take up the conception of scientart. After developing the scientart concept, I will apply it to Suhrawardi and ibn Tufail. Serving this end, I pick out Farabi's definition of art which applies to literature. For purposes of clarification and contrast, I have formerly established Farabian theory of art¹.

Two warnings are in order here, the former of which is about art and the latter about science. First, arts according to Farabian theory of art have different types of purposes. In many passages of *Kitab al-Musiqi al-Kabir*, aka *The Great Book of Music*, Farabi discusses notes and melodies, believing in three sorts of melodies: 1. Some of them create pleasure and comfort and have no other effect. 2. Some create pleasure, inspiring the imagination to new ideas. 3. And some are motivated by cheerful or upsetting emotions. Dividing melodies into three categories – pleasing, imaginative, or passive – is restated in *The Great Book of Music* later on.

When reviewing the motives for playing music and singing, Farabi also describes three types: 1. Some croon so as to comfort and please, and to forget their fatigue, passing the time. 2. Some sing to strengthen or diminish their sentiments and emotions. 3. Some sing in order to explain concepts, creating visions². In his discussion of melodies, Farabi further divides this last category. He introduces four purposes for melodies: 1. Melodies that please. 2. Melodies that create sensual emotions like satisfaction, affection, anger, fear, grief and the like. 3. Melodies that create imaginary forms. 4. Melodies that enable humans to understand the meaning of the words that accompany the notes of the song. No doubt many melodies have more than a single purpose³.

Paying attention also to visual arts, Farabi divides all kinds of images, statues, and paintings into two categories: useful and of little use. The latter type simply creates pleasure, whereas the useful type, in addition to causing pleasure, nourishes the imagination and creates emotions that embody other intendments⁴. At the beginning of *Kitab al-Musiqi al-Kabir*, Farabi also suggests a general account for art. After dividing music into practical and theoretical, he defines art as a taste and a talent, combined with an intelligible element. These talents capture concepts and images existing within the soul⁵.

Developing a theory of art, Farabi focuses on components such as taste, imagination, comprehension—namely understanding the intelligible—sensual emotions, and pleasure. Of course, it should be noted that, as mentioned above, in Farabian theory of art, people come to understand intelligible truths through the use of their imagination. Furthermore, the excitement of sentiments and emotions often stems from the imagination and imaginary forms.

The second and last point should be mentioned in introduction is about the concept of science. I mean by science all branches were common among Muslim thinkers ranging from metaphysics to mathematics and medicine. As will be seen, in his novel, ibn Tufail pretty clearly develops autopsy and vivisection which apply to modern-day concept of science while in his fictions, Suhrawardi mostly focuses on classical metaphysics, cosmology, and psychology.

¹ See Maftouni, N. "Art as It Is and Art as It Should be: An Analytical Study of Farabi", *Transcendent Philosophy*, 2012, Vol. 13, pp. 239–248; Maftouni, N. "Nature of Art in Farabi's Thought", *Wisdom and Philosophy*, 2013, Vol. 32, pp. 33–40.

² Farabi, Abu Nasr. *Kitab al-Musiqi al-Kabir*. Tehran, 1998, pp. 19–24.

³ Ibid., pp. 554–555.

⁴ Ibid., p. 559.

⁵ Ibid., p. 13.

2. Analysis of Scientart

Scientart refers to reciprocal relations between science and art, such as science in fiction⁶, science in poetry⁷, and science in theatre⁸. Example fields of science comprise, in this account, different disciplines such as metaphysics⁹, physics¹⁰, medicine¹¹, and economics¹². And various branches of art as diverse as painting, sculpture, music, and poetry are reckoned as art in its broader account, including literature¹³.

In spite of their divergences, both art and science are brought about by creative process¹⁴. In this process, they have bilateral services to each other. Science may assist art with enriching artworks, as I explain later in philosophical fictions. Moreover, in some media, such as computer graphics, holography, and space art science have been applied for the creation of art¹⁵. Art, on the other hand, can assist science with presenting scientific issues to the public as well as motivating their creativity.

Categorizing in three main groups, a scientartist could be an artistically-inclined scientist, a science-minded artist or one involving both artistic and scientific activities¹⁶, albeit I cannot place distinct borders between these three approaches¹⁷.

Artistically-inclined scientists are the scientists who inclined to artists. For example, James Webb who directed the start-up of the *NASA Art Program*, once put it “Important events can be interpreted by artists to provide unique insight into significant aspects of our history-making advances into space”¹⁸. Science, in this approach, is front-and-center and artists are following it.

The science-minded artist might be used to refer to artists inspired by scientific issues or those who inspire scientists. Some artist describes how they are inspired by science, producing quasi-scientific artworks: “Science is the lens through which I understand the world, particularly paleontology and evolutionary biology”¹⁹.

Sometimes, artists captivate and inspire scientists. Jules Verne’s *Twenty Thousand Leagues under the Sea* could be counted as a quasi-scientific artwork which fascinated American inventor Simon Lake, Known as the father of the modern submarine²⁰.

⁶ Grünzweig, W. (ed.) *The Scientartist Carl Djerassi’s Science-in-Literature Transatlantic and Interdisciplinary Context*. Berlin, 2012, pp. 133–154.

⁷ Ibid., pp. 155–182.

⁸ Ibid., pp. 61–132.

⁹ as a formal science.

¹⁰ as a natural science.

¹¹ as an applied science.

¹² a branch of social sciences.

¹³ See two main definitions of art in: *Oxford Dictionaries* [<http://www.oxforddictionaries.com/definition/english/art#nav1>, accessed on 05.12.2015].

¹⁴ Copley, A. “On Knowledge in Art and Science”, *Leonardo*, 1987, Vol. 20, No. 3, pp. 213–215.

¹⁵ Garfield, E. “Art and Science. Pt. 2”, *Current Contents*, 1989, Vol. 9, pp. 3–8.

¹⁶ It is mentioned in Scientart Center community [<http://www.scientartcenter.org>, accessed on 05.12.2015]: “Whether you’re a science-minded artist or an artistically-inclined scientist (or both!), for our Scientart membership you will be added to our exclusive mailing list, will have opportunities to participate in our events including exhibitions, be eligible for our featured member of the month, a feature in our bimonthly publication *Scientart in America*, eligible for our twice yearly grants and our soon-to-be-announced virtual residency program...”

¹⁷ It is mentioned in *Scientart Center Community* [<http://www.scientartcenter.org>, accessed on 05.12.2015]: “Whether you’re a science-minded artist or an artistically-inclined scientist (or both!), for our Scientart membership you will be added to our exclusive mailing list...”

¹⁸ Webb, J. *International Space Hall of Fame*. New Mexico Museum of Space History. Profile of James Webb [<http://www.nmspacemuseum.org/halloffame/detail.php?id=122>, accessed on 04.12.2015].

¹⁹ Joyce Yamade: <http://www.scientartcenter.org/un-natural-nature-virtual-exhibit.html>, accessed on 05.12.2015.

²⁰ <http://www.smithsonianmag.com/science-nature/ten-inventions-inspired-by-science-fiction-128080674/?no-ist>, accessed on 24.12.2015.

3. Suhrawardi's Metaphorical Approach

Scientart approach could be seen in Muslim thinkers like Suhrawardi as well as ibn Tufail. Suhrawardi describes the issues of cosmology, psychology, and metaphysics in the language of metaphor²¹ while ibn Tufail uses the format of novel without metaphor. As a case study, I pursue the matter in Suhrawardi's cosmology and ibn Tufail's medicine.

In traditional cosmology, the nine spheres and the sublunary realm managed by ten intellects are on the well known descending route of the Origin. As Chittick points it out: "The basic outline is the same as that already present in the Arabic Plotinus: intellect, soul, heavenly spheres, four elements.... Some of the philosophers have developed it into several degrees as did Farabi and Avicenna, who spoke not of one intellect and one soul, but of ten intellects and ten souls"²².

The Peripatetic philosophers believed in ten separate intellects emanate from the First Being. The tenth one, the Active Intellect, gives rise to the sublunary realm. However, the philosophers did not assert that they were acquainted with the manner in which all the other numerous existents emanated, but concerned themselves only with the nine spheres. They have claimed ten intellects, only because it is impossible for there to be less than that in view of the nine universal spheres and the sublunary realm²³.

Suhrawardi in book of *Hikmah al-Ishraq* holds that the intellects are more than ten, twenty, and two hundred²⁴. In *Alvah Emadi*²⁵, he also emphasizes that there are too many intellects, quoting Quran's verse: "None knows the armies of your Lord save Him self"²⁶. Therefore, the heavenly bodies would be more than nine. Because intellects figure corresponds to spheres figure. But in his allegorical treatises, Suhrawardi symbolizes the theory of the nine spheres and ten intellects.

In *A Day with a Group of Sufis*, Suhrawardi himself has decoded his allegories about this theory. First, he mentions the theory in allegorical form. When the wayfarer said to his master, "The engraver's craft is amazing". his master said, "There is a well-known tale in their craft, but no one tells it fully, and no one knows the meaning of it". "What is this tale?" the wayfarer asked. His master went through the story:

Once, an engraver had a jewel. He wanted to display his skill on it. So from it he made a round shell like a ball. Then, from the residue left in the middle of the shell he made another shell inside the first. Again, from the residue of the second he made a third, and so on until he had made nine shells. Afterwards, from the remainder of these shells he made a jewel, which he wrapped in two pieces of cloth, one of which had no color and the other of which was whitish. These he placed in the middle of the shells. He then polished the first shell and engraved a few medallions on the second shell and gilded it. On the third, fourth, and so on to the ninth shells he engraved one medallion each.

After the allegorical tale, Suhrawardi starts decoding it. When the wayfarer heard the tale from his master, he said, "I do not understand what you are saying to me. Tell me clearly that I may benefit fully". His master started explaining the allegories, "When the Creator created these spheres, he sent a light to the first sphere". For a

²¹ Suhrawardi. *The Philosophical Allegories and Mystical Treatises*. Costa Mesa, 1999.

²² Chittick, W. C. *The Heart of Islamic Philosophy: The Quest for Self-Knowledge in the Teachings of Afdal Al-Din Kashani*. New York, 2001, p. 57.

²³ Al-Jami. *The Precious Pearl Al-Jami's Al-Durrah al Fakhirah*. Albany, 1979, p. 69.

²⁴ Suhrawardi. *Majmū'a-i Musannafāt-i Shaykh-i Ishraq*, Vol. II. Tehran, 2002, pp. 139–140.

²⁵ Ibid., Vol. III, pp. 148–149; Vol. IV, p. 65.

²⁶ Quran, 74/31.

sphere is an intermediary between being and non-being, the first sphere was too subtle to bear it. It borders on existence. Then again, it is continuous with nonexistence. As a consequence, the light reached the second sphere, which was able to bear it.

The light was broken up against the second sphere, and every part became a star. What was left over from these stars, came to the third sphere, and from that residue Saturn came into being. Again, what was left over from Saturn reached the fourth sphere, and the body of Jupiter came into being. And so on, Mars from residue of Jupiter, the Sun from the residue of Mars, Venus from the residue of the Sun, Mercury from the residue of Venus, and from the residue of Mercury, the Moon²⁷.

Sometimes Suhrawardi speaks of the eleven spheres, adding two spheres of *zamharir* and *ether*²⁸. In *A Day with a Group of Sufis*, the wayfarer asked, “Why is the body of the Sun bigger and brighter than the other stars?” His master said “Because it is in the middle. If you count the seven planets, the Sun is in the middle. And just as there are two spheres above the seven, there are two other spheres below them, *ether* and *zamharir*. Therefore, by any reckoning the Sun is in the middle”²⁹.

Hence the Suhrawardi is clear about his cosmology, we are allowed to decode his cosmology, corresponding the allegories to the nine and eleven spheres.

In *A Day with a Group of Sufis*, the nine shells symbolizes the nine spheres. The first shell is polished, and there are a few medallions on the second shell. On the third, fourth, and so on to the ninth shells, there is one medallion.

Cosmology issues in Suhrawardi’s writings encompass *A Day with a Group of Sufis*³⁰ and these five other treatises: *The Sound of Gabriel’s Wing*³¹, *The Red Intellect*³², *On the State of Childhood*³³, *On the Reality of Love*³⁴, and *The Language of the Ants*³⁵.

I have just explained the account of *A Day with a Group of Sufis*. *The Sound of Gabriel’s Wing* is the next treatise in my account.

In this treatise, ten intellects are symbolized by ten old men seating on a bench. The wayfarer says of them, “When I looked I saw ten old men of beautiful countenance seated on a bench. I was so amazed by their magnificence and splendor and so staggered by the sight of their throne, their beauty, their white hair, their garments and trappings that I could not speak”³⁶.

²⁷ Suhrawardi. *The Philosophical Allegories and Mystical Treatises*, pp. 34–35.

²⁸ The eleven spheres system is attributed to Ptolemy and his disciples. “Ptolemy has established the generally accepted order of the heavens, from bottom to top: Moon, Mercury, Venus, Sun, Mars, Jupiter, Saturn, Fixed Stars or Starry Heaven, and had added a ninth heaven, the Primum Mobile. This heaven was added by Ptolemy in order to account for two observed movements of the heavens. First, their daily motion east to west around the pole of the equator was attributed to what Ptolemy called the ‘sphere that moved the sphere of the Fixed Stars’ (the Primum Mobile). Ptolemy attributed the other, slow movement of the planets from west to east at the rate of 1° every hundred years around the pole of the ecliptic known as the precession of the equinoxes, first discovered by Hipparchus (190-c.120), to the heaven of the Fixed Stars. Initially astronomers has supposed that the eighth sphere, that of the Fixed Stars, was affected by as many as three different motions, and on the principle that a single sphere must be assigned to each distinct celestial motion, additional spheres plus an immobile Empyrean were often added for a total of eleven spheres” (Cachey Th. J. “Cosmology, geography, and cartography”, *Dante in Context*. Cambridge, 2015, pp. 221–240).

²⁹ Suhrawardi. *The Philosophical Allegories and Mystical Treatises*, p. 36.

³⁰ *Ibid.*, pp. 33–42.

³¹ *Ibid.*, pp. 8–19.

³² *Ibid.*, pp. 20–32.

³³ *Ibid.*, pp. 43–57.

³⁴ *Ibid.*, pp. 58–76.

³⁵ *Ibid.*, pp. 77–90.

³⁶ *Ibid.*, pp. 9–10.

The old man who was on the end of the bench greeted the wayfarer in a most kindly-disposed manner, saying, "We are a group of abstracted ones, come from the direction of Nakuja-abad", that means they are ten Separate Intellects.

"Why do the elders seated above you keep silent?" The wayfarer asked. "Because the likes of you are unworthy to approach them", the tenth and last of them, the Active Intellect said, "I serve as their tongue, for they will never deign to address the likes of you".

Then the wayfarer saw in the courtyard a basin with eleven layers³⁷. By these eleven layers, Suhrawardi allegorizes the eleven spheres. There is no crack or no crevice on the surface of the upper nine levels of the basin. This means there is no crack and no crevice on the surface of nine spheres according to traditional theory. "Although no hole could be made through the nine upper levels, one could easily pierce through the lowest level"³⁸. For the lowest level refers to the sublunary world.

The first level had no button at all, whereas the second level had many luminous buttons on it. Because the first level of the basin is the allegory of the Sphere of the spheres and the second level is the allegory of the sphere of the Fixed Stars.

"On each of the remaining seven of the upper nine levels of the basin a bright button was fastened". These buttons refer to Saturn, Jupiter, Mars, Sun, Venus, Mercury, and Moon.

When the wayfarer asks the old man what this basin is, he explains the relation between the intellects and the spheres. Then he explains the relation between the intellects themselves. The elder who is in the highest place is the master teacher and tutor of the second elder, who sits beside him. He has signed the second elder's order of investiture, the second has signed the third's order, the third the fourth's order, and so on down to the tenth.

The next allegories of the spheres, in *The Sound of Gabriel's Wing*, are the son as the soul of the sphere and the mill as the body of the sphere.

"Do you have children and property and things like that?" the wayfarer asks.

"We have never had spouses", he said, "but each one of us has a son. Each of us also has a mill and we have appointed our sons to supervise the mills. We have never looked at the mills since we built them, but our sons maintain them in good running order by keeping one eye on the mill and the other on their fathers.

The mill of tenth intellect, the Active Intellect, is a dismal place and fraught with dangers and pitfalls, consisting of four levels, i. e., the four elements: earth, water, air, and fire³⁹, for the sublunary world is so.

Also in *The Red Intellect*, Suhrawardi speaks of the eleven spheres by allegory of eleven mountains. The first one of the Seven Wonders of the World is the Mount Qaf that surrounds the world consisting of eleven mountains⁴⁰. The Red Intellect who instructs the wayfarer approaches him as politely as possible, describing that every white thing that is connected to light appears red when admixed with black, like the sunset at the beginning of evening or the end of dawn, which is white where it is connected to the Sun's light. One side of it is toward the light, which is white, while the other side is toward the night, which is black. Therefore it appears red. When the crescent moon rises, although its light is borrowed, it is nonetheless described as light. Since one side of it is toward day and the other side toward night, it appears red. A flame has the same quality⁴¹.

³⁷ Suhrawardi. *The Philosophical Allegories and Mystical Treatises*, p. 11.

³⁸ Ibid., pp. 10–12.

³⁹ Ibid., pp. 10–12.

⁴⁰ Ibid., p. 22.

⁴¹ Ibid., pp. 21–22.

The white side is the allegory of the Separate Intellects versus the black side is the allegory of the sublunary world. For the Active Intellect is the last Separate Intellect and is responsible for the sublunary realm, he has located between the white and the black sides.

The origin of the Active Intellect or Red Intellect is Mount Qaf which its position is above all eleven spheres.

Then the wayfarer asked the Red Intellect about wonders he has seen in the world. He answered that he has seen Seven Wonders. First of all is Mount Qaf, which is their realm, surrounding the world and consists of eleven mountains. When the wayfarer is delivered of his bondage he will go there⁴². The second is the Pearl-that-glow-by-night that refers to the Moon. The third one is the Tuba tree that refers to the Sun. The fourth wonder is the Twelve Workshops that symbolize the sphere of Fixed Stars. The fifth is David's chain mail and it probably refers to human's body. The sixth is the sword Balarak. Maybe it symbolizes the Death. And seventh is the Spring of Life⁴².

The fourth treatise, in my account, is *On the State of Childhood* in which is some clear hints on the Moon, the Sun, the Earth, and the sphere. Moreover, the Moon is allegorized in it by the Pearl-that-glow-by-night like *The Red Intellect*⁴³.

The fifth and last treatise that I want to mention, *On the Reality of Love*, includes allegorizing nine spheres by the nine-storied pavilion.

Know that above this nine-storied pavilion is a vault called the City of the Soul. It has ramparts of might and a moat of power. At the gate to that city is stationed a young old man whose name is Jawed Khirad. He continually travels about in such a way that he never moves from his place⁴⁴.

4. Ibn Tufail's Literal Approach: anatomy, autopsy, vivisection

Ibn Tufail's *Hay ibn Yaqzan* might be regarded as a masterpiece in the field. Being a physician as well as a novelist, ibn Tufail constitutes a landmark in the history of medicine. In his novel, ibn Tufail elaborates scientific issues of human anatomy, autopsy, and vivisection. This matter I will take up in the immediately succeeding sections.

An Account of *Hay ibn Yaqzan*. *Hay ibn Yaqzan*⁴⁵ is the name of two totally different works from Avicenna and ibn Tufail. Ibn Tufail drew the name of his novel from Avicenna's tale, but the plot and characters were fully different. Ibn Tufail's novel is the story of an autodidactic feral child a gazelle raised whom in a desert in the Indian Ocean. Without contact with other human beings, Hay discovers ultimate truth. Connecting Asal, comes Hay into contact with civilization and religion. Ibn Tufail's novel proves there is no conflict between philosophy and religion. Narrating two versions of the birth of *Hay ibn Yaqzan*, ibn Tufail goes on with the story. Based on the first version, Hay came into the world in an Indian island under the Equinoctial, where men came into the world without parents.

The second version has much in common in some respects with the birth of Prophet Moses.

⁴² Suhrawardi. *The Philosophical Allegories and Mystical Treatises*, pp. 22–23.

⁴³ Ibid., pp. 47–49.

⁴⁴ Ibid., p. 64.

⁴⁵ Hay Ibn Yaqzan for the first time was translated into English by Simon Ockley in 1708 (London, 1708). See also: Ibn Tufail. *The history of Hay Ibn Yaqzan*, trans. by S. Ockley, revised, with an introduction by A.S. Fulton. London, 1929.

There lay, not far from this our island, another great island..., which was then governed by a prince of a proud and jealous disposition. He had a sister of exquisite beauty, which he confined and restrained from marriage, because he could not match her to one suitable to her quality. He had a near relation whose name was Yaqzan, that married her privately, according to a rite of matrimony then in use among them: it was not long before she proved with child, and was brought to bed of a son; and being afraid that it should be discovered, ...put him into a little ark..., and that very night the strong tide carried him ashore on that island we just now mentioned. ...It happened that a roe which had lost her fawn, heard the child cry, and following the voice (imagining it to have been her fawn) came up to the ark⁴⁶.

Human Anatomy. Ibn Tufail discusses human anatomy in great detail, when he recites the account of those who contend Hay generated without parents. Starting by explaining three major internal organs, the heart, brain, and liver, he continues with the arteries and veins.

They... give you a particular account of the formation of all the parts, as the physicians do of the formation of the fetus in the womb, omitting nothing till he was completely formed, and just like an embryo ready for the birth. In this account they are forced to be beholding to this vast mass of fermented earth, which you are to suppose contained in it all manner of materials proper for the making man's body, those skins which cover it &c.; till at last, when he was complete in all his parts, as if the mass had been in labor, those coverings, which he was wrapped up in, burst asunder, and the rest of the dirt dried and cracked in pieces⁴⁷.

In such a way, Hay came into the world, and started crying for help and food until the roe which had lost her fawn found him.

Autopsy. Autopsy does stand as a topic of interest in the treatise of *Hay ibn Yaqzan*. The idea is that between Hay and the roe, the emotion of parenting and childhood developed. The roe kept maintaining the Hay.

She stayed by him and never left him, but when hunger forced her; and he grew so well acquainted with her, that if at any time she staid away from him a little longer than ordinary, he would cry pitifully, and she, as soon as she heard him, came running instantly⁴⁸.

But the situation would not last forever. The roe grew lean and weak, continuing a while in languishing circumstances until she died and naturally ceased all her actions and motions. Hay called the roe, but there was no answer. Then he began to examine the roe, peeping into her eyes and ears. However, Hay perceived no viewable defect. Then he continued to examine all parts of her body but found nothing. Since the external examination didn't pay, Hay was led to perform an autopsy. He was anxious to find the hurt organ and remove the defect, thereby giving body back its functions. In the bodies of wild beasts and other animals, he had formerly observed that there were just three cavities, i.e., the skull, breast, and belly. Then Hay thought this major organ that all members stood in need of which, must be in the center in the breast. In addition, he felt such an organ in his breast. So examining it, he resolved to open her breast and remove the impediment. For this part of the novel onwards, ibn Tufail is considered an early supporter of autopsy and vivisection.

Vivisection. In order to view the trajectory of life, Hay practiced vivisection on live animals. At first he fixed his attention on the substance which was departed from the heart of the roe. As per his observations, all animals as long as they lived

⁴⁶ Ibn Tufail. *Hay ibn Yaqzan*. London, 1708, pp. 29–30.

⁴⁷ Ibid., pp. 35–36.

⁴⁸ Ibid., p. 37.

were constantly warm and got cold after death. In the bargain he found that there was a greater degree of heat in his breast, near the place where he had made the incision in the roe. Thus Hay thought of dissecting live animals. For this purpose, Hay took a wild beast and tied him down, and dissected him in the same fashion he had dissected the roe until he came to the heart. Then he opened the left ventricle and learned it was full of an airy vapor hotter than he could well endure it, recalled a little mist or white cloud. In such a way died the animal instantly.

From whence he assuredly concluded that it was that hot vapor which communicated motion to that animal, and that there was accordingly in every animal of what kind soever, something like it upon the departure of which death followed. He was then moved by a great desire to enquire into the other parts of animals, to find out their order and situation, their quantity and the manner of their connexion one with another and by what means of communication they enjoy the benefit of that hot vapor, so as to live by it, how that vapor is continued the time it remains, from whence it has its supplies, and by what means its heat is preserved⁴⁹.

Dissecting all kinds of living and dead animals, Hay landed in first place of naturalists and arrived to the highest degree of knowledge in this kind.

5. The Reason Why Scientart

We have seen that two major Muslim thinkers' metaphorical and literal approaches. This begs the question why such a great thinkers take a scientart approach, explaining their opinions in fiction and novel?

To answer this question, we need to look at the Farabi's social principles. According to him, final happiness is the state in which a human being successfully perceives the intelligible, and achieves the nearest possible status to the Active Intellect⁵⁰. For Farabi, people who cannot understand the rational nonetheless have full use of their imagination⁵¹. So intelligible truths – and thus, happiness – should be somehow transferred to the imagination of such people. This task should be undertaken first by the Prophet, who has himself been linked to the Active Intellect, and has thus received all facts in their intelligible and imaginary forms. There are two ways to achieve understanding: one can perceive the essence of a thing and imagine it in its existing form, or one can imagine an idea, and all the things similar to it⁵². It is not possible to speak of or bring into action the particular details of that which is non-sensible—such as the soul, the ten heavenly intellects, the hyle, and all abstract beings. It is not possible, that is, unless they are formed in the imagination. Although such things cannot be felt, we can imagine them through analogy, parallelism, or allegory⁵³.

⁴⁹ Ibn Tufail. *Hay ibn Yaqzan*. London, 1708, pp. 54–55.

⁵⁰ Farabi. *Risālah fī al-Aql*. Beirut, 1984, p. 31.

⁵¹ Farabi. *Al-Tanbīh 'alā Sabīl al-Sa'ādah wa al-Ta'līqāt wa Risālatān Phalsaphīyatān*. Tehran, 1992, pp. 129–130.

⁵² Farabi. *Al-Sīyāsah al-Madanīyah*. Tehran, 1997, p. 225.

⁵³ Farabi. *Kitāb al-Mūsīqī al-Kabīr*, p. 43.

6. Conclusion

We face three different kinds of connections between science and art, called scientart: artistically-inclined science, science-minded art and scientart with both artistic and scientific approaches. Suhrawardi could be reckoned as a scientartist. For example, he explains complicated issues of cosmology in his works.

Considering him a novelist, ibn Tufail would be regarded as a scientartist, too. Although his treatise mainly does not include allegory, literature by itself is reckoned as art in its broader account. That being the case, scientartist is applied to, for example, the poets, the musicians, the writers as well as the novelists.

Despite Suhrawardi, ibn Tufail's scientart approach is non-figurative. In addition to many rational issues, ibn Tufail discusses the problems of anatomy, autopsy, and vivisection in great detail in *Hay ibn Yaqzan*.

Scientart approach could be explained according to Farabi. For him, intelligible truths and happiness should be transferred to the imagination of people. Although such things cannot be felt, people can imagine them through analogy, parallelism, or allegory.

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Искусство как род языка у мусульманских мыслителей: подходы иносказательный и буквальный

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Понятие «сайнс-арт», означающее двусторонние отношения между искусством и наукой, охватывает три типа явлений: причастную искусству науку, научно-ориентированное искусство и деятельность, в которой подходы, свойственные науке и искусству, присутствуют в равной мере. Именно искусство помогает науке не утрачивать свои позиции в сознании большинства людей; именно наука позволяет искусству не бледнеть перед лицом эксперимента. Наука в системе воззрений, принятой в настоящем рассуждении, включает в себя обширный набор дисциплин от метафизики, космологии, психологии до физики, медицины и экономики. Под искусством же понимаются самые разные отрасли художественной деятельности, такие как живопись, скульптура, музыка, поэзия и вообще литература, в том числе прозаическое повествование. Этот всеобъемлющий взгляд на искусство берет начало в теории его, восходящей к Аль-Фараби. Среди мусульманских философов выдающийся вклад в осмысление художественного творчества принадлежит таким фигурам как Сухраварди и Ибн Туфайль. Замечательная цепкость ума позволяет Сухраварди находить выражение для метафизических, космологических и психологических проблем посредством аллегорий и художественных образов. Вот какие, к примеру, он придумывает аллегорические обозначения для девяти небесных сфер и подлунного мира: девять раковин; одиннадцать уровней воды в резервуаре, увиденном странником; одиннадцать гор, опоясанных хребтом Каф; сыновья; мельницы; райское дерево Туба; двенадцать Кузниц и, наконец, Жемчужина, сияющая в ночи. Ибн Туфайль, напротив, в своей единственной сохранившейся «Повести о Хайе, сыне Якзана» (*Hay ibn Yaqzan*) рассуждает о вопросах человеческой анатомии, технологии вскрытия и вивисекции в самой буквальной и нехудожественной манере. Включая в повествование рассказ об аутопсии, он выступает в роли одного из первых сторонников вскрытия тел умерших. Значение «сциентарта» как способа описания действительности помогает понять Аль-Фараби, полагающего, что умопостижимые истины и счастье могут быть перенесены в человеческое воображение посредством аллегории, аналогии и параллелей.

Ключевые слова: Фараби, Сухраварди, Ибн Туфайль, мастер «сайнс-арта», повествование, теория искусства