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Navigating a Fractal World: Civilisational Renewal towards Sustainability^{*}

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Abstract

There is a conception of the Earth, the cosmos, and reality lost sometime in the 17th century (replaced by quantity, rationality, and attacks against the spiritual, the feminine, and the mythical). The present article seeks to view and consider the details of the old conception and their intriguing connections to bits and pieces of new sciences, new physics, and mathematics that deal with a world which does not look like the modern one (and which actually looks quite old).

Keywords

Earth, cosmos, spiritual, the feminine, the mythical, fractal, phase space, Möbius strip, quaternions, geometries of space-time.

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Eric Winkel / TAFHIM 13 No. 1 (June 2020): 3-22

The Spiritual Root

There is a conception of the Earth, the cosmos, and reality lost sometime in the 17th century (replaced by quantity, rationality, and attacks against the spiritual, the feminine, and the mythical). Here we view and consider the details of the old conception as well as intriguing connections to bits and pieces of new sciences, new physics, and mathematics that deal with a world which does not look like the modern one (and which actually looks quite old).

What is presented in this article is designed for you to verify for yourself. Look at an issue in yourself, your family; in larger society, in the world, and focus in. Do the actors believe they are unconnected, and therefore free to act without restraint? Do the actors feel alienated and lost in a meaningless universe? One will find the spiritual, religious, and psychological roots of many of the problems faced today in these largely subconscious feelings. If these are the real roots, then the solutions are not going to be technical: they will need instead a deeper, spiritual response.

The Universe is not Empty

Isn't the Earth of Allāh vast enough for you to go forth from? *a-lam takun ard Allāh wāsi ah*¹

O My creatures who are faithful, Indeed My earth is vast! yā ibādiy alladhīna āmanū, innā ardiya wāsi ah²

^{1.} Al-Nisā'(4): 97.

^{2.} Al-Ankabūt (29): 56.

Navigating a Fractal World

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Eric Winkel / TAFHIM 13 No. 1 (June 2020): 3-22

The ratio and imagery that used to be used to situate the human's position in the cosmos is the "ring tossed in the empty desert." What is this ratio of a ring to a desert? The answer is actually guite involved. One typically thinks of "area," which is two dimensional. But the desert is three-dimensional, with ridges and dunes and gullies. Another example is a sheet: it has one area when laid out flat, quite another when ruffled up. A sheet could be one square metre or balled up into ten square centimetres. The dimensionality of a surface is fractal, a fraction between a flat two and a balled up three-dimensionality. A square is A² and a volume is A³ and a fractal could be A^{2.15}. Mandelbrot explained that when measuring a coastline, you would get one amount if your measuring sticks were a mile long, and quite another if your measuring sticks were a tenth of a centimetre. If the sticks could follow every contour to the atomic level, the "actual" length of a coastline would go toward infinity. With the ring, we are looking more at measuring sticks in the onecentimetre range, and so the "empty desert" might be $1:10^{15}$.

We are not Alone

Why do we look for extra-terrestrial life? There are worlds of bacteria in our gut which we don't recognise; there are life-forms at our finger tips we are unaware of. Indeed, there is more life in your stomach than people on the Earth. The question is not whether there is life "out there," but rather can one recognise all the life that there actually is. Chapter Two of the *al-Futūhāt al-Makkīyah* states as follows:

Learn that in bread and water, and all foods and drinks, and clothes and seats, are fine (microscopic) Spirits, strange, who are the secret of one's life, and one's knowledge, and one's praise of one's Lord, and raising one's station in the presence of seeing one's Creator. These Spirits have a sacred trust to these physical forms which they fulfill to this soul, consigned in a blurry fashion. Do you see one of

Navigating a Fractal World

them, how he carries out his trust to one, he who is the secret of life? When he conveys his sacred trust, he expels, either from the direction it came in, and it is called burping and vomiting, or from another direction, and it is called defection and urination.³

Everything is alive, everything is intelligent, everything is articulate. There is no other conclusion, if you hear:

The seven Skies and the Earth and whoever is in them celebrate Him, and there is nothing but it celebrates with His praise, but you don't understand their celebration *yusabbihu lahu al-samawāt wa al-ard wa man fihinna wa in min shay in illā yusabbihu bi-hamdihi wa lakin lā tafqahūn tasbīhahum.*⁴

The word "thing" today means an object, inanimate. But "thing" in Arabic is *shay*, which means "the unknown x." When Greek science in Arabic texts was being translated in Spain, and there is no "sh" in Spanish, the translators used the next sound, "kh," which is the Greek letter "chi" and looks like X. So "x" is "thing." Presently, not only are "things" animate, intelligent, and articulate, they also have gender. One speaks about the "sheep who saw her shadow" or the "bird who complained to her Cherishing *rabb* on the day of judgment, 'Why did that man kill me for no reason?" The Sky is a he and the Earth is a she, and a mother, so if you would not trash your mother and you would not drain away her energy, you should be the same way with the Earth.

In classical Arabic, animals and other beings have genders, and so it is not easy to treat them like objects, as an "it." The mode of human-animal interaction is the larger mode of *taskhīr*, which is presently called subjugation. In fact, it operates in the

^{3.} Ibn 'Arabi, *al-Futūhāt al-Makkīyah*, translated by Eric Winkel (Kuala Lumpur: The Other Press, 2016).

^{4.} Al-Isrā'(17): 44.

Eric Winkel / TAFHIM 13 No. 1 (June 2020): 3-22

following way: one party is subjugated to another in order to perform some work. The party subjugating tends to think that they have the upper hand, but note that the horse, for example, runs away from you. You need them, but they do not need you. Thus, when the horse is subjugated, you are the one doing everything to assure his comfort, ascertaining he is warm or cool,he has hay and fodder, mucking out his home, and tending to any pains he faces. Hence, who is subjugated to whom? For the larger picture, consider "Who answers the plea of the caller when he calls Me"?⁵ Indeed, we are not alone, and we are intimately connected through *taskhīr*, completely needed, useful, and appreciated. Thus, while everything in the human being is alive, intelligent, and articulate, the human beings themselves may be ignorant!

And they will say to their skins, "Why have you testified against us?" They will say, "We were made to speak by God, Who has made everything speak."⁶

Nothing is Neglected

In the Newtonian inertial universe, God wound up the clock which presently is slowly losing energy, until the universe will fade out into a bleak, dark, cold death. But in the lost world, every particle of the universe demands its very being from the only One with Absolute Being, and the demand is answered every moment as follows:

Everyone asks Him, whoever is in the Skies and the Earth: each day He is upon a brilliant radiance.⁷

Notedly, the Arabic word "*sha'n*" (brilliant radiance) is singular. That means that each particle is getting its own radiance from

^{5.} *Al-Baqarah* (2): 185.

^{6.} Fussilat (41): 21.

^{7.} Al-Raḥmān (55): 29.

Navigating a Fractal World

the Divine every "day." Now, "day" is a variable concept in classical Arabic, ranging from the day of ascension which is 50,000 years as we count, and the day of the Lord, which is 1,000 years as we count, down to the smallest period of time, the *zaman fard*, the quantum time period. In this case, "day" is the quantum time period, and it is the period of time it takes for the Divine to light up a particle with becoming. If there are 24 candles to be lit up in a conventional day, the "day" would be one hour, with each candle being lit up each hour. If there is, instead, a huge number of particles, for instance 10⁴⁵, the shortest period of time would be the Planck second, the time light takes to cross the smallest particle.

Indeed, there is no inertia in this instance! There was hardly a big bang of energy that is presently winding down; there is a big bang of energy for every particle during every piece (or quantum) of time. Such a big bang of energy is the new creation.

No, they are in confusion about the new creation⁸

The new creation is understood to be your new becoming every quantum of time, or in an easier way to imagine, every breath, the *nafas al-Rahmān*, the breath breathed out and into each particle to make everything alive, intelligent, and articulate, based on *rahmat*, the kindness that people of the same womb (*rahim*) have for each other.

The story is told that a solid rock cracked open and inside was a green worm, who was praising his nourisher: "*al-hamdu lillāh*, the one Who provides me sustenance despite the great distance." In the story, the comment is made that the worm means the great distance of the sustenance from him, not the distance of the Sustainer—Who is close indeed. In the cosmic diagram of centre-point and circumference, the radii span an interval which is "very close" in the outward direction but variably close

^{8.} $Q\bar{a}f(50)$: 15.

Eric Winkel / TAFHIM 13 No. 1 (June 2020): 3-22

in the inward direction. That means that the distance of *haqq* to *khalq* is close but the distance of *khalq* to *haqq* is variable. This phenomenon in mathematics is called the Hausdorff dimension, because d (A, B) is not equal to d (B, A). Such a situation occurs when the field is not an integer dimension but rather, a fractal dimension, a fraction of an integer. In such a field, the distance when going "out" is not the same as the distance when going "in."

Next, let us consider the phase space. If you graph all the possible points a pendulum may make on a surface, you get a phase space. You can see that if the pendulum's needle swings from left to right, it is next position will be say, some where point A. In this phase space, one prepares differential equations, equations that work with the difference between one position and another, to show how the pendulum moves. We tend to think our ability to predict motion tells us that we are quite smart, and indeed most of physics depends on differential equations. But there is something that challenges our confidence: weather. With weather, one finds that knowing a huge amount of data gives us the ability to predict what will happen in the next few minutes fairly accurately. But to extend our prediction just a few minutes more requires an exponentially bigger amount of data. Clearly, one is not in a simple phase space. What phase space *does* the concept of the *ma*^c*lūm* have, which is the idea that what happens next is patterned but not predictable?

If the phase space is fractal, we have a line traced by the $ma'l\bar{u}m$, but instead of the line we watched with the pendulum, we do not have a line which is predictable by differential equations. That means that whether a point will be on the $ma'l\bar{u}m$ line or not cannot be predicted by difference, by proximity. This phase space is fractal, called a Julia set (from Gaston Julia in the 19th century, in Sidi Ben-Abbas), and most "Julia sets are not decidable over R since, from a theory of complex analytic dynamical systems, we know that most Julia sets have fractional Hausdorff dimension." We can also drape this phase space over the surface of a sphere. As a result, "the irregularity of r" implies that there is no algorithm (e.g., based on convergence of Cauchy

Navigating a Fractal World

sequences) that can determine r on a meridian whose longitude is an irrational multiple of π , given the values of r on all the "rational" meridians. In this sense, the proposed theory embodies the notion of non-computability which Penrose proposed as being central to a realistic theory of quantum physics. Indeed, we live in utterly unpredictable world. That means that anything can happen, and that whatever we are "in" can suddenly change, for the better. In the *Fayd al-Qadīr*, "one of them said":

If the matter is constricting you, reflect on "alam nashrah" The difficulty is between two eases, if you think about it; so rejoice!

In a world where everything is changing to the better—because "My kindness is vastly extended over everything"—there is no place for despair!

We are not Lost

We are in/on a three-dimensional surface but have learned the Cartesian grid, with its independent, unrelated points and the arrogant I of 0, 0. The three-dimensional surface is remembered by original people. An indigenous artist says, "An aboriginal friend of mine from Australia talked about the aboriginal relationship to the land. It's seen as something that you're inside of or you're passing through but not looking upon."⁹

Dante describes the cosmos with astonishing precision as a hypersphere, exactly as modern physics has determined it to be. ... I am not proposing to naively interpret the past in our own image, claiming Dante to be a mathematical genius before his time. I am, however, suggesting that there is an excellent explanation for why one must look to the fourteenth century for models of expression adequate to the

^{9.} Pasatiempo, The New Mexican (27 January 2017).

Eric Winkel / TAFHIM 13 No. 1 (June 2020): 3-22

challenges posed by nineteenth and twentiethcentury advances in mathematics: namely, that in the course of the Scientific Revolution, wherein were laid the epistemological foundations for the discoveries of modern science, certain possibilities of thought and imagination were discarded, forgotten, and certain abilities were, if only temporarily, lost. The Middle Ages has long been painted as a period whose culture was hostile to free thought and new knowledge; perhaps it is now time to recognize that it was also a time in which phenomena could sustain mutually exclusive and contradictory explanations, when the battle between faith and science had not yet been conclusively won by either side, and when the efforts to bridge the stories they told could produce conceptual edifices whose mere possibility would be unthinkable only 200 years later.¹⁰

As above, so below In is out is in again Up is down is up again

These kinds of statements sound "mystical" or ridiculous, depending on one's disposition. But they are also simple descriptions of geometries which language has trouble dealing with. The reasons mystics speak in poetry and in kōan is both to demonstrate the inability of human language to describe strange geometries and truths and to point the seeker in the right direction to "verify for yourself the truth." Classical Arabic treats dimensions as directions, so six directions are three dimensions. The jinn can come at you from four directions; they live in two dimensions.

Then I will come at them from in front and from behind, on their right and on their left.¹¹

^{10.} William Egginton, "On Dante, Hyperspheres, and the Curvature of the Medieval Cosmos," *Journal of the History of Ideas* (1999) http://www.jstor. org/stable/3653852.

^{11.} *Al-A'rāf* (7): 17.

Navigating a Fractal World

In the 14th century, and then again in the 20th century (according to Riemann and Einstein), human beings are living "in" or "on" a three-dimensional surface. What is such a surface? Let us explore a two-dimension surface and then try to move "onwards" or "upwards" to three dimensions. Imagine the *jinn* on a three-dimensional sphere (a ball), standing on a twodimensional surface. If they travel forward long enough, they will reach where they started out. Every place they are is the centre of the universe, because every place they are is equidistant from every other place. They cannot think of a space "below" them or "above" them. So, if there were seven globes (seven Earths) nested one inside another, it would be hard for one to explain: that if one has access to four-dimensions, one could walk down and down through the nested spheres (or Earths) until reaching a point, which in turns opens up to an ascension of seven more spheres (or Skies). All this is hard enough for *jinn* to visualise.

In the 14th century, the picture is reduced dimensionally even more when being diagrammed and explained. (In modern physics, people construct "toy universes" of even just onedimension to try to understand reality.) The model for the Creator and creation is the circle with a centre-point. The radii are all the same length, because the True is equidistant from every creature on the circumference. This is how "*hu* is with you wherever you are," as God said *wa huwa ma akum ayna mā kuntum*.¹² Note that as a point on the circumference, no matter where you go (along the circle, because you are restricted to this dimension), *hu* is the same distance away. If you go around long enough, you end up where you started. Thus, when you look "out," which means forward along the circle, you see "in"; you see your back and your origin.

In the 14th century, letters were understood to be analogies of reality. Take for instance the centre-point, a dot of zerodimension. If you view a stick stuck in the ground from above, it is a point. If you angle to the side, you see the second dimension

^{12.} Al-Hadīd (57): 4.

Eric Winkel / TAFHIM 13 No. 1 (June 2020): 3-22

of the stick, as a line. The *alif* is that way: a centre-point if viewed one way, a line if viewed another. So now let us watch the centre-circumference model expend. The centre-point is now an *alif*, a two-dimension line. The circumference stays equidistant from the *alif*.

How can you describe a sphere if you know only circles? Let us take cross-sections, bringing the sphere into our twodimensions. The "tip" of the sphere emerges as a dot which slowly is a circle, and then a bigger circle. The circles keep getting bigger until suddenly they start getting smaller, and then there is a dot and nothing. We have a plane field of view as we scan the sphere. What if we have a volume, a three-dimensional view of a hypersphere, the four-dimensional sphere? We see it emerge as a dot, then a tiny sphere, then a sphere getting larger and larger until suddenly it starts getting smaller; it becomes a dot and then vanishes.

Where are the seven Earths? They are of course not "below" us or we would see them. They are actually seven spherical "slices" of the hypersphere. The first slice is small, the next larger. Then, after the seventh Earth the slices get smaller—the first slice of the seven Skies is slightly smaller, the next smaller, the last tiny. That is counter-intuitive in threedimensions: but in this other world, the universe gets smaller as one gets farther away from one's origin!

In this other world, the *alif* stays equidistant from every point on the circumference, from every point in creation. There is no place "outside" of the centre-point or the *alif*. "*Hu*" is over everything encompassing, *alā innahu bi-kulli shay muhīt*.¹³ And back to the two-dimensional surface; a voice comes to us from the third-dimension, above or below one—but of course we do not have such concepts. Where is it coming from? We go forward or backward, left or right, and still the voice is exactly right there, because, "And We, We are closer to him than the

^{13.} Fussilat (41): 54.

Navigating a Fractal World

jugular cord, *wa nahnu aqrabu ilayhi min hab al-warīd*,"¹⁴ and, "We, We are closer to him than you are, but you don't see, *wa nahnu aqrabu ilayhi minkum wa lākin lā tubsirūna*."¹⁵

Scientists today think quaint the idea that medieval people thought themselves the centre of the Christian (or Muslim) cosmos. Yet, in the models they use today, the only way to account for the even distribution of galaxies is if we on this Earth are the centre of the Big Bang universe. Roger Penrose gives a "fanciful description" of such a problem: the only point for the Big Bang that produces this universe has to be "pinned" in a tiny box, "just 1 part in 10^{101²³} of the entire phase-space volume," an utterly unimaginably tiny spot.¹⁶

"In" or "on" a three-dimensional surface, we look outward to see inwards, we journey far and end up where we started. There is a two-dimension surface that works this way: the Möbius strip. Start on the "top" and go around; you end up on the bottom, and then you end up at the beginning back on top. This is a visual for *hu* is the first, the last, the outward, the inward, and *hu* is of everything all-knowing, *huwa al-auwal wa al-ākhir wa al-zāhir wa al-bāțin wa huwa bikulli shay în 'alīm.*¹⁷

Similarly with the single surface of the Klein bottle: Abū Kharrāz was asked, "How do you recognise God?" He answered, "In His combining the opposites." Then he recited,

Hu is the first, the last, the outward, and the inward.

More than a combination of opposites, *hu* is the first the same way *hu* is the last. Move around the Klein bottle and verify for yourself that the beginning is exactly the ending, and the inside is exactly the outside, and being "inside" is nothing like we know from our world where something is inside something else, or first is followed by next and last.

^{14.} $Q\bar{a}f(50)$: 16.

^{15.} Al-Wāqi'ah (56): 85.

^{16.} Roger Penrose, *The Road to Reality* (New York: Alfred A. Knopf, 2004), 730.

^{17.} *Al-Hadīd* (57): 3.

Eric Winkel / TAFHIM 13 No. 1 (June 2020): 3-22

The sphere may be mapped to a plane, except for one point. That point is zero or infinity, and it contains all the projectable points. It is the one point that does not have a reciprocal, and just as division by zero is impossible (because the original term cannot be returned to), *there is nothing like it*.

With the Möbius strip we ask, "Where does the surface go?" Indeed, language gets confusing when we are restricted to a dimensionality that is less than what we are looking at. Thus, working with numbers which are two-or four-dimensional may enable one to handle alternating currents, relativity theory, signal processing, fluid dynamics, and quantum mechanics with complex numbers (imaginary numbers), and with quaternions, computer graphics, robotics, bioinformatics, and higher-dimensional geometries of space-time.

Perhaps, the first to explore imaginary numbers—numbers which have two components instead of just one along a number line—was Gerolama Cardano in the 16th century. He wrote that he remembered his father being visited by spirits—what we might call *jinn*—and having long, heated discussions with them. One of the discussions concerned quantum time and space, the idea that space and time are not continuous as in Newtonian physics.

They stayed there for more than three hours. They disputed, meanwhile, when he asked them about the Cause of the World. The tall one denied that God made the world from eternity. The other disagreed, adding, Each single moment; in this way God created the world, such that if for a moment He desisted, right then the world would perish. For this, he brought out from the Disputations of Averroes certain statements, when at that time the book had not been discovered. He referred, and by name, to some books, some that had been discovered and others still hidden. They were all works of Averroes.¹⁸

Gerolama Cardano, *De Subtilitate* Book 19, 656, http://echo.mpiwgberlin.mpg.de. (accessed January 20, 2017).

Navigating a Fractal World

The concept of *per singula momenta ita Deum creare mundum* is "Everyday He is upon a brilliant radiance." He is there "on" the brilliances according to the number of particles in the world—particles that cannot be further split. He is $f\bar{i}$ sha'n with each particle in the world. The state does not persist for two time durations, because if it persisted across two time duration, it would be described as being independent of God, and this is impossible.

Now, the two-dimensional number is one which allows the square of some number to be -1. Look at the number line and see that 3 squared is three times three, nine. But -3 squared is also nine. Take a number, multiplied by -1, and you end up at the end of a 180 degree arc on the other side. On the number line, there is no number that can be squared to equal a negative number. The complex number *i* produces an arc of 90 degrees, so two arcs—the squaring operation—can lead to the square of a number being negative. Similarly, quaternions allow for four numbers to be multiplied for a negative 1 product.

In such cases, the numbers "go" to a space off the number line (for complex numbers) and off the number volume (for quaternions). In classical Arabic, numbers are letters and letters have numerical values. Also, letters are three-dimensional, because the *kāf*, for example, is composed of a *kāf*, an *alif*, and a $f\bar{a}$? The concept of multiplication is conveyed by the word for "striking," daraba. In addition, because "no states persists across two time durations," no two things are exactly alike. Let us consider then an *alif* multiplied by an *alif*. If the *alif* is considered as a vector, the multiplication of one striking the other produces a scalar quantity (the inner dot product) and another quantity (the outer wedge product). The operation looks like a sweeping of the second vector along the first one. The resulting "oriented area" is off of the plane, swept "under" or 'behind' the plane. The operation is also non-commutative (and so is in the field of "non-commutative geometry"), so multiplying A_1 by A_2 is not the same as multiplying A_2 by A_1 (in the same way that putting on socks then shoes is not commutative).

Eric Winkel / TAFHIM 13 No. 1 (June 2020): 3-22

Now, consider this geometric algebra in two cases. Junayd is said to have uttered after a sneeze, *Al-Hamdu lillāh rabbi al-'alamīn*. Someone says, "How can you put the Old (the primordial, the *hamd* of Allāh) with the New (the creation, the '*ālamīn*)?" Junayd says, "When the Old is struck by New, nothing of the New is seen." In the other case, God makes the *khalīfah* in *al-Baqarah* verse 30, which comes from *min khalf*, and is "the one behind whom One acts." When the New is struck by the Old, nothing of the Old is seen. That is how we see the New person who is the *khalīfah* but the One acting behind him (the Old) is unseen.

The Photo, the Movie, the Swirling Ember

A thousand years ago, and even today, a visitor to an *urs* would watch buskers outside at night making dramatic light drawings, using a stick with an ember at the end. These light-drawings, the literal translation of the Greek *photo-graphy*, tell the viewer that space and time are quantum, discontinuous, and that our very being is transitory, moment-by-moment, and dependent on the absolute *being*. This metaphor continues in photographs, in film movies, and in digital streaming.

Note the ember, and the light drawing. The mechanism of a "moving picture" comes from one's inability to see anything moving faster than fifteen frames per second. A series of pictures in a flip-book or in the twirling zoetrope moving at fifteen frames per second are seen as continuous. The individual pages or frames, or the ember at the end of the stick, are invisible. Our entities are these pages, frames, or embers. With the New Creation, the *khalq al-jadīd*, every entity is moving in and out of existence so fast that the entity itself is invisible. We are invisible. What is visible? The light-drawing. Whose light, whose *nūr* and *wujūd*, is the drawing? Hence, the statement of Abū Bakr, "I never see anything but I see Allāh in front of it." Indeed, the thing behind is invisible because it is moving too fast to see.

Newton gave us continuous space and time, and only with Einstein was this picture challenged. The idea of discontinuous

Navigating a Fractal World

space and time is the basis of Zeno's paradox. If you are moving toward a point, you first have to go half the distance, then half of that distance, and so until infinity. If space is continuous, there are an infinite number of intervals to cross. But add time to space being discontinuous, and you enter an atemporal physics. Julian Barbour takes Zeno's paradox and gives it an interpretation that is actually part of the cosmos being described.¹⁹ The arrow that leaves the bow, he says, is not the arrow that hits the target. That means that each moment in the New Creation there is a snapshot or atemporal frame, followed by another and another. There is no motion because there is nothing "between" position 1 and position 2.

The projection of light lighting up these frames is the *sha'n* of *kulla yawmin huwa fī sha'n*.²⁰ Every frame of the New Creation is lit up by the single *sha'n* "He is upon." Without this lighting, we do not exist, and no particle is lit up to make the cosmic picture. That is why we all ask for—really, demand, because we have no other recourse—this lighting.

Yas'aluhu man fī al-samāwat wa al-ard kulla yawmin huwa fī sha'n

They demand of *hu*, whoever is in the Skies and the Earth: everyday He is upon a *sha*'n.

The world is made up of pixels, of point-entities (the *ayn*) whose basis or skeleton is dark and lifeless. When *being* lights up the basis (the ember at the end of the stick, us), we are seen. But actually, it is not the wood or us that are seen!

If the entities are invisible, and if what we are looking at does not have a solid reality, then we are watching the movie of the world. Imagine a picnic in the park, as Seurat did. The

^{19.} Julian Barbour, *The End of Time: The Next Revolution in Physics* (Oxford: Oxford University Press, 1999), 251.

^{20.} Al-Rahmān (55): 29.

Eric Winkel / TAFHIM 13 No. 1 (June 2020): 3-22

picture of the picnic, its reality, does not stem from there being a baby here and a woman there, an umbrella here and a boat over there. When you watch a movie, the reality of the story and what you see does not stem from you actually seeing frame 34,140 or an umbrella-shaped half-circle in frame 121,423. No, what you see is what you have re-constructed in your mind. Seurat shows us this with a painting constructed only of pixels, point-entities. The entirety of the point-entities makes the picture. Each point-entity is invisible—just as with frames moving 15fps, the dots are not individually visible. What is visible is the picture; what is visible is the movie; what is visible is the manifest world. The world is the site of visible emergence, in Arabic the *mazhar*, upon which the visibly emerging being manifests "itself," the $z\bar{a}hir$.

The frames in the New Creation contain each individual entity in the world lit up; the next frame also contains each individual entity, now either "like" the previous one or "unlike." The way pixels are processed today is not by taking every frame (which might each be 1MB in size) frame by frame, but instead by looking at each pixel and asking if it is the same or different. This makes it possible to process these frames with much less computing power.

There is a Path

Three levels or dimensions of the path can be found in the following verse:

Wa mā ramayta idh ramayta wa lākin Allaha ramā.

You did not throw, when you threw, but God threw²¹

Here we find *tarīqah*, *sharī ah*, and *haqīqah*. "You did not throw" tells us that the world we live in is not as it seems. We think we throw, we think we act, but in fact we do not. Thus, *tarīqah* is the path upon which we travel to seek the truth about how things

^{21.} Al-Anfāl (8):17.

Navigating a Fractal World

really are. Next, comes "when you threw," which means that there is a "you" and there is an "action." The *sharī ah* stands on agency. You must be a "you," an actor, and you must be of sound mind and body. If your body is weak, you are not tasked with fasting. If you are starving, no food is forbidden and *harām* to you. If you are not of sound mind, no Law applies to you. If you are forced to do something, you are outside of the purview of the Law because you are not the actor, the one doing. Then we learn "but God threw." This is the truth, the ultimate reality. God *does*, and no one else.

> Inna rabbaka fa"āl limā yurīd Indeed your Cherisher does, whatever He wants²²

Understanding the aforementioned levels means we can properly understand the great poems and prose works of the lost world. If a poet is, in effect, on a Möbius strip, we will hear from *haqīqah*, about *fanā* 'and *baqā* ', about inside is outside, up is down, and non-duality. But while all this is true, it is not the approach we take if we "are" and we "do." If we have agency, if we do something, we are responsible, and we are under the Law. The *tarīqah* is a path that teaches man that we do not throw; but when we do, there is the Law; while ultimately "God threw."

22. *Hūd* (11): 107.

Eric Winkel / TAFHIM 13 No. 1 (June 2020): 3-22

References

- Barbour, Julian. The End of Time: The Next Revolution in Physics. Oxford: Oxford University Press, 1999.
- Cardano, Gerolama. *De Subtilitate* Book 19, 656, http://echo. mpiwg-berlin.mpg.de. (Accessed January 20, 2017).
- Egginton, William. "On Dante, Hyperspheres, and the Curvature of the Medieval Cosmos," *Journal of the History of Ideas* (1999) http://www.jstor.org/stable/3653852.
- Ibn Arabi. *Al-Futūhāt al-Makkīyah*. Translated by Eric Winkel. Kuala Lumpur: The Other Press, 2016.
- Jensen, Derrick. *The Myth of Human Supremacy*. New York: Seven Stories Press, 2016.
- Penrose, Roger. The Road to Reality. New York: Alfred A. Knopf, 2004.
- Winkel, Eric. "Time is not real: Time in Ibn `Arabi, and from Parmenidies (and Heraclitus) to Julian Barbour," *Journal* of the Muhyiddin Ibn `Arabi Society 50 (January 2012).