Original Article
Received/Accepted Dates
26.01.2025/08.02.2025
DOI:10.52096/jcsl.06.12.03

Social Sciences and Academic Studies
Journal of Criminology Sociology and Law
ISSN 2734-2328 http://www.journalcriminology.com

Explaining The Treatise on Nature (Tabiat Risalesi) with Mathematical Modeling and Visualizing It Via Python Code

Ülkü Er

MA, North American University, Dept. Of Mathematics, berraebru@gmail.com

Assist. Prof. Dr. Doğan YÜCEL

Lecturer, dyucel58@gmail.com, Orcid: 0000-0001-6240-8886

Metin Aysel

Dr. med. univ. Metin Aysel, Child and Adolescent Psychiatrist, Head of APSS, metin.aysel@yahoo.de

Muhammet M. Akdağ

PhD., Islamic Sciences, Association for Psychological and Spiritual Sciences e.V., m.akdag@apss.eu

Sueda Gül

Teacher, Association for Psychological and Spiritual Sciences e. V., suedagulapss@gmail.com

Abstract

This paper examines the main ideas discussed in Treatise on Nature through mathematical concepts and techniques. The text questions whether nature and causes alone are sufficient to explain existence and emphasizes the necessity of a creator. This study demonstrates how the order in the universe can be explained using mathematical tools such as infinite series, differential equations, Newtonian mechanics, fractals, and probability theory. Mathematics is one of the most effective tools for describing the order in the universe. Mathematical theories such as fractal geometry, Newtonian mechanics, probability, and statistics prove that natural formations do not occur randomly but follow a specific order. This study aims to show that the order in the universe is not coincidental but develops according to certain mathematical principles, supporting the philosophical arguments presented in Treatise on Nature.

Keywords: Infinite series, Newton's laws, chaos theory, fractals, probability, design, universal order, differential equations, Treatise on nature.

Introduction

One of the fundamental questions in scientific research is the origin of order in nature. Throughout human history, philosophers and scientists have questioned whether the order in nature is purely coincidental or governed by specific laws.

Treatise on Nature is a philosophical work that explores whether nature itself can be a creator and whether the order in the universe necessitates a deliberate design. This work argues that existence cannot emerge spontaneously and that nature can only be understood through the presence of an organizer.

Some studies have been conducted on the subject. Some of these are articles on humility (Gül, Yücel, Er, Uygur, Yavaş, Aysel, Salık, Aydın, & Akdağ, 2022a) and trust (Er, Yücel, Gül, Uygur, Yavaş, Aysel, Salık, Aydın, & Akdağ, 2022b; Er, Yücel, Gül, Uygur, Yavaş, Aysel, Salık, Aydın, & Akdağ, 2022c). Similar to the subject of this study, they have carried out visualization studies of the conceptual relationships of the works of Bediüzzaman's work Sözler:

The Second Word (Er, Yücel, Aysel, & Akdağ, 2025c), the Third Word (Er, Yücel, Aysel, & Akdağ, 2025b), the Fourth Word (Er, Yücel, Aysel, Akdag, & Gül 2025a), the Sixth Word (Er, Yücel, Aysel, Akdag, & Gül 2025e), the Fifth Word (Er, Yücel, Aysel, Akdag, & Gül 2025d), (Er, Yücel, Aysel, Akdag, & Gül 2025b), the Seventh Word (Er, Yücel, Aysel, Akdag, & Gül 2025c), and the Eighth Word (Er, Yücel, Aysel, Akdag, & Gül 2025a). Other noteworthy works are the two studies on the relationship between mathematical models and pedagogical approaches (Aktaş, 2015) and their place in emotional development in education (Kalkan, 2018).

Methods

In this study, we examine how the concept of natural order in Tabiat Risalesi (Treatise on Nature) (Nursi, 2007) can be supported through mathematical and physical principles. To demonstrate that the order of the universe is not random but governed by specific laws, mathematical tools such as Newtonian mechanics, fractal geometry, probability theory, infinite series, and differential equations have been employed. Through mathematical modeling and computer simulations, we visualize how the order in the universe operates.

In this paper, the core concepts presented in Treatise on Nature has been analyzed using mathematical methods. Through mathematical tools such as Newtonian mechanics, fractal geometry, infinite series, and probability theory, we will demonstrate how the order in the universe can be explained within a systematic framework. Modern physics and mathematics have revealed that the structure of nature is governed by definite laws and computable probabilities. Specifically:

Newton's laws of motion demonstrate that physical phenomena operate according to specific principles. Fractals explain self-repeating structures observed in nature. Infinite series prove that even seemingly chaotic processes converge toward specific outcomes. Probability theory shows that the likelihood of the universe forming by pure chance is extremely low. This study examines whether the order in the universe can be mathematically explained and how these mathematical principles reinforce the philosophical arguments presented in Treatise on Nature.

Findings and Interpretations

Universal Order with Newton's Laws of Motion

Newton's laws of motion describe the fundamental rules governing the movement of objects and allow for a mathematical understanding of the order in the universe.

Newton's Second Law: $F = ma$

The acceleration (a) of an object is directly proportional to the force (F) applied and is inversely proportional to its mass (m).

Simulation: By calculating the gravitational force between the Earth and the Moon, we demonstrate that the movements in the universe occur within the framework of specific physical laws, rather than being random. Using differential equations, we analyze the forces applied between two celestial bodies and how they change over time. This method establishes that the order of the universe operates within definite laws, not randomly.

Fractals and the Sierpinski Triangle – The Emergence of Order from Chaos

Fractal geometry explains self-similar structures found in nature and shows that even chaotic systems follow specific mathematical patterns.

Sierpinski Triangle: The repeated pattern of sub-triangles within a triangle is used to illustrate self-similarity in nature.

Natural Fractals: Systems like tree branches, snowflakes, coastlines, riverbeds, and DNA structures are formed not randomly, but according to specific fractal mathematical rules.

This supports the concept of order mentioned in Treatise on Nature.

Infinite Series and Convergence – Mathematical Continuity in the Universe

In mathematics, infinite series represent sequences that converge toward a specific point.

Leibniz Series for Pi Calculation: $\pi = 4\left(1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \ldots\right)$

This series shows that even infinitesimally small steps can converge to a specific result when following a structured pattern.

Differential Equations and Evolution: It has been shown that natural changes can be modeled with specific mathematical equations. This indicates that the universe follows a continuous, rather than a random, order.

Probability Theory and the Fine-Tuning Argument

The extremely low probability of the physical constants of the universe arising randomly has been mathematically supported, suggesting the possibility of a deliberate design.

Fundamental Physical Constants: Small changes in the values of constants like the gravitational constant, speed of light, and Planck constant would prevent the universe from achieving its current form.

Statistical Analysis: Such precision in this order cannot be random. Probability calculations reinforce the idea in Treatise on Nature that *causes alone cannot create order,* supporting the argument for an intelligent designer.

Summary of Treatise on Nature

There are certain phrases that people use unconsciously, which imply atheistic ideas. Three of them are: *Causes create* – Attributing the existence of things to causes. *It forms by itself* – Accepting that things come into existence on their own. *It happens by nature* – Thinking that nature has a creative power. However, logically, there are four possibilities:

1.Things are created by causes.

2.They come into existence by themselves.

3.They are formed by nature.

4.They are created by a Creator who brings everything into existence.

If the first three possibilities are proven to be logically impossible, the only remaining explanation is that everything is created by Allah. When the idea that causes are creators is examined, it is shown to be illogical. To produce a vital medicine in a pharmacy, precise measurements are required. This medicine *cannot be formed by chance, simply by jars randomly tipping over.* Likewise, living beings cannot come into existence by coincidence. Since each living entity is created with precise measurement and order, the claim that causes have creative power is irrational.

Mathematical Explanation of the Four Possibilities from Treatise on Nature

Here is the translated version of the mathematical explanations and Python code, including visualization.

a. Causes Create (Deterministic Functions and Impossibility)

In mathematics, a deterministic function always produces the same output for the same input: $f(x) = 2x + 3$

If all natural processes were solely caused by physical factors, they should always yield the same results. However, in nature, even under identical conditions, different outcomes can occur.

Example; Even if two trees receive the same amount of water and nutrients, one may grow faster. If nature were purely deterministic, no variability would exist.

Connection to Treatise on Nature*:* Bediüzzaman argues that causes alone cannot be creators because a deterministic system requires absolute certainty. However, randomness and irregularities exist in nature, proving that causes alone cannot be responsible for creation.

b. It Forms by Itself (Probability and Impossibility)

In probability theory, some events are considered highly unlikely or impossible.

Example: The probability of flipping 100 coins and getting all heads is:

$$P = \left(\frac{1}{2}\right)^{100} \approx 7.88 \times 10^{-31}$$

This is so rare that it would take longer than the age of the universe to happen.

Similarly, the probability of proteins forming by random chemical reactions is astronomically low, making self-creation impossible.

Connection to Treatise on Nature*:* Bediüzzaman emphasizes that nothing can come into existence by itself. Probability calculations confirm this: if an event is highly improbable, it is more reasonable to assume an external cause rather than randomness.

c. It Happens by Nature (Chaos Theory and the Necessity of Order)

Chaos theory states that even seemingly random systems follow specific rules, but chaotic systems do not spontaneously create order. Example; Logistic Map Equation: $x_{n+1} = rx_n(1 - x_n)$

This equation exhibits chaotic behavior, but it does not generate a structured order on its own. If nature had the power to create, chaotic processes would need to randomly form structured systems. However, mathematics shows that disordered systems do not become ordered on their own.

Connection to Treatise on Nature: Bediüzzaman argues that nature itself cannot be the creator because order in nature implies conscious design. Mathematics supports this by proving that disorder cannot evolve into structured systems without an external force.

d. It is Created by a Creator (Mathematical Constants and Laws)

In mathematics, constants and physical laws are universal and unchanging:

Pi Number: $\pi=3.141592...$

Euler's Number: $e=2.718...$

Golden Ratio: $\phi=21+5 \approx 1.618$

These constants appear in physics, biology, and engineering. If the universe were randomly formed, these unchanging laws would not exist. Example: The orbits of planets follow Newton's Law of Gravitation: $F = G\frac{m_1 m_2}{r^2}$

Without physical laws, planets would move erratically. However, this order suggests that the universe is the product of a deliberate design.

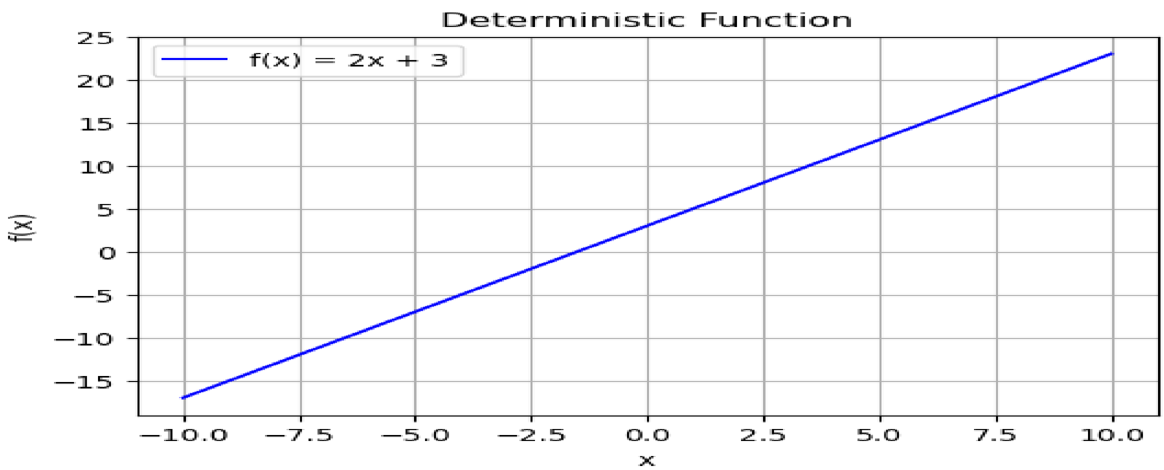
Connection to Treatise on Nature: Bediüzzaman argues that the precise measurements in nature indicate a conscious creator. Mathematics confirms this by showing that the universe operates under well-defined laws, which cannot arise by chance. English Version of the Python Code for Visualization. Now, here is the English translation of the Python code that generates visual explanations of these concepts.

Causes Create (Deterministic Function)

This graph represents a deterministic function, illustrating that if causes were the sole creators, all inputs would always lead to the same output. However, nature does not work in such a perfectly deterministic way.

Graphics 1

Deterministic Function

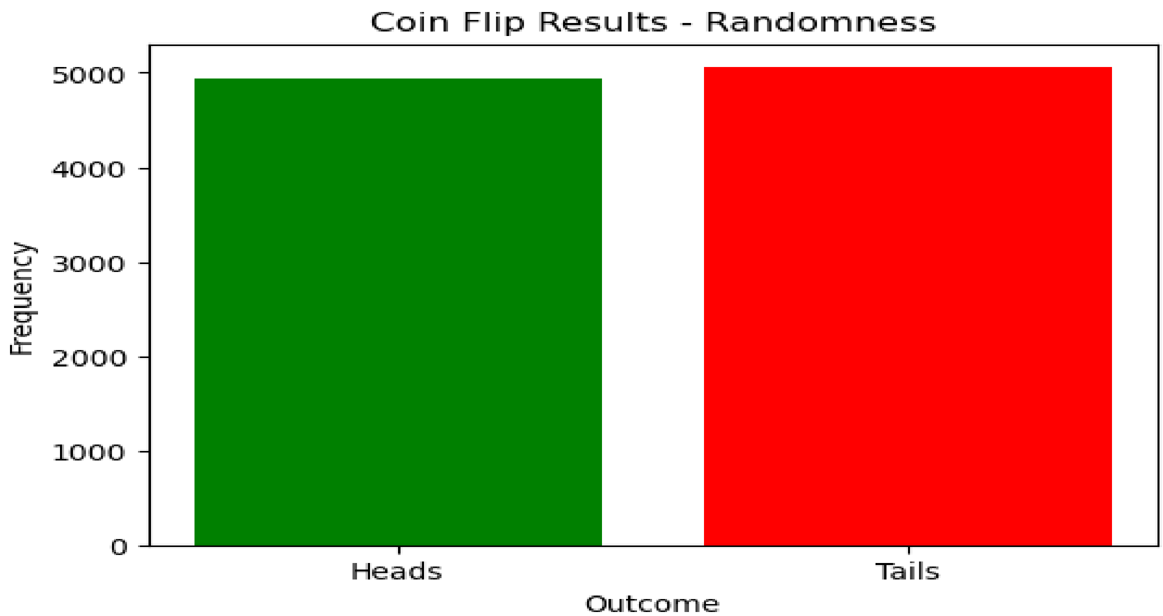


Forms by Itself (Probability and Impossibility)

This simulation represents the improbability of an event happening by itself. If a process is purely random, it is unlikely to form a structured, meaningful result. This is demonstrated with a coin flip experiment.

Graphics 2

Coin Flip Results - Randomness

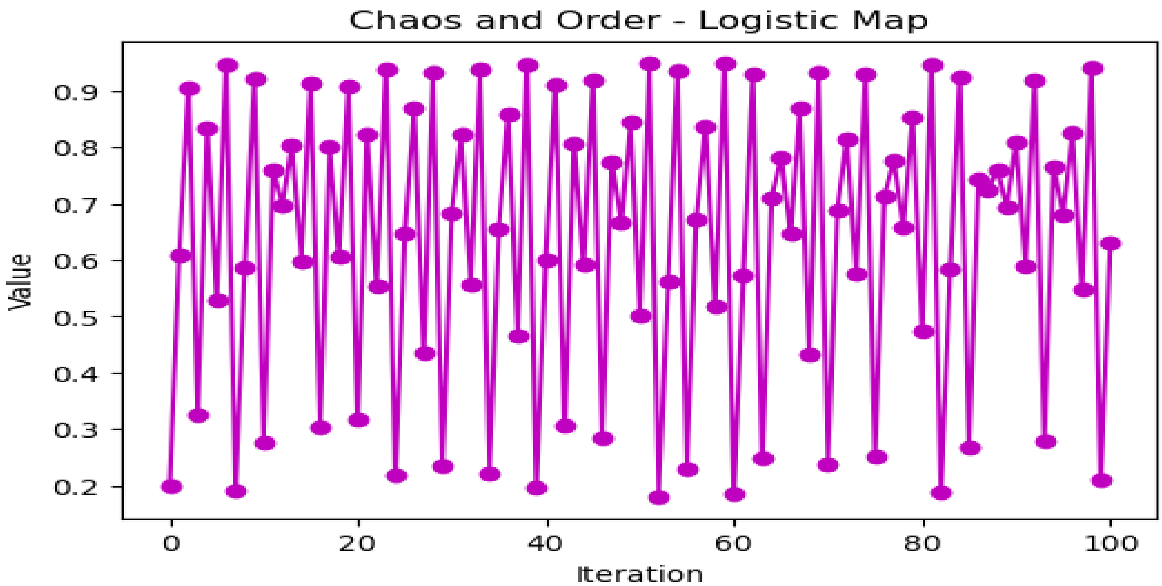


3. Happens by Nature (Chaos and Order - Logistic Map)

This plot visualizes chaos theory by showing how small changes in initial conditions can lead to unpredictable results. If nature had creative power, it would require chaotic systems to spontaneously generate order, which is not mathematically feasible.

Graphics 3

Chaos and Order - Logistic Map

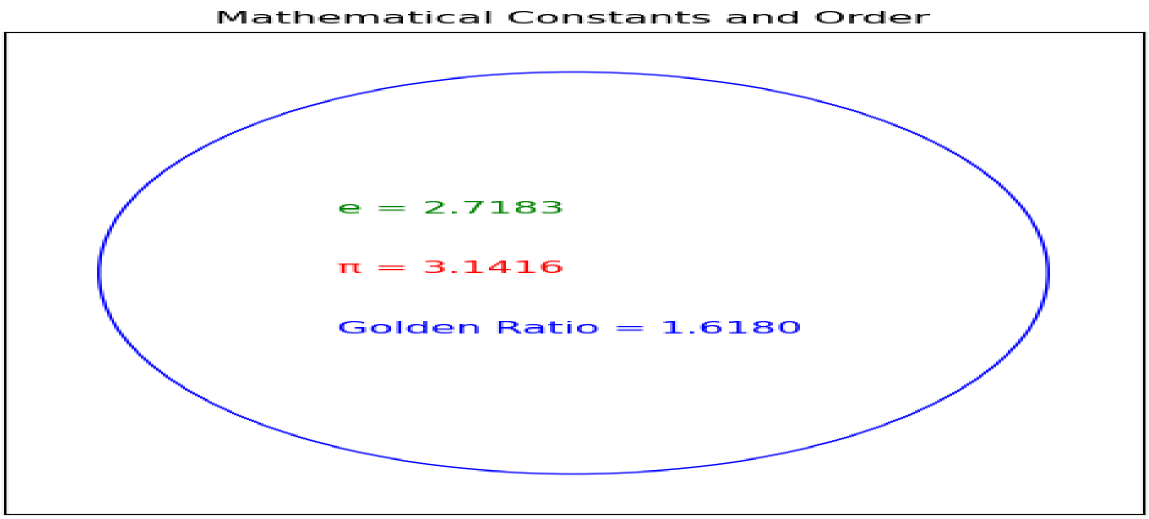


4. Created by a Creator (Mathematical Constants and Laws)

This visualization demonstrates the existence of universal mathematical constants, such as π (pi), e (Euler's number), and the golden ratio. These unchanging values suggest a structured design in the universe, rather than randomness.

Graphics 4

Final Notes



These four visualizations illustrate the mathematical arguments against chance-based creation and support the idea of an intelligent designer. Causes alone are not enough, as seen in the limitations of deterministic functions. Self-formation is statistically impossible, as demonstrated by probability theory. The nature does not create order on its own, shown through chaos theory. Universal mathematical laws point to a structured design, proving that randomness cannot explain the precision of natural laws.

It can be explained the first summary section with the following mathematics topics.

1. Causes Create – Matrices and Linear Transformations

The idea that causes create is similar to a system processing an input to produce an output. However, in nature, the same input does not always yield the same output.

Mathematical Explanation: Natural systems can be thought of as a matrix transformation. However, since chaotic and random effects exist in nature, the result is not always the same.

If a linear transformation could explain the entire universe, this equation would hold:

$$\mathbf{y} = \mathbf{A} \cdot \mathbf{x}$$

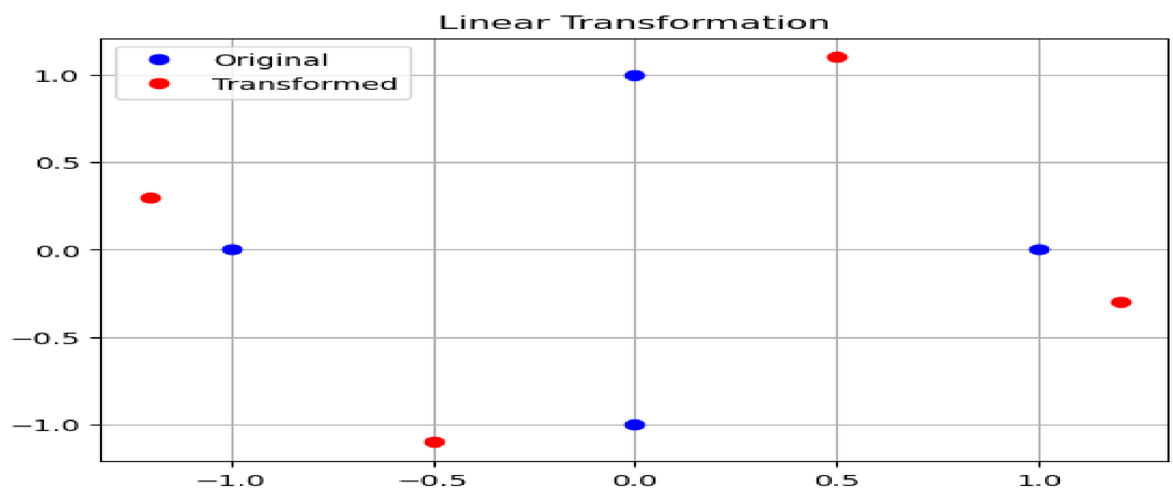
However, since natural processes do not always produce the same results, simple cause-and-effect relationships are insufficient.

New Visual Idea: A shape changing due to a linear transformation (e.g., a square being rotated and stretched by a matrix transformation).

1. Linear Transformation (Causes Create - Matrix Visualization)

Graphics 4

Linear Transformation



2. It Forms by Itself – Random Walk Theory

The claim that nature forms complex structures spontaneously is similar to the random walk model in probability theory.

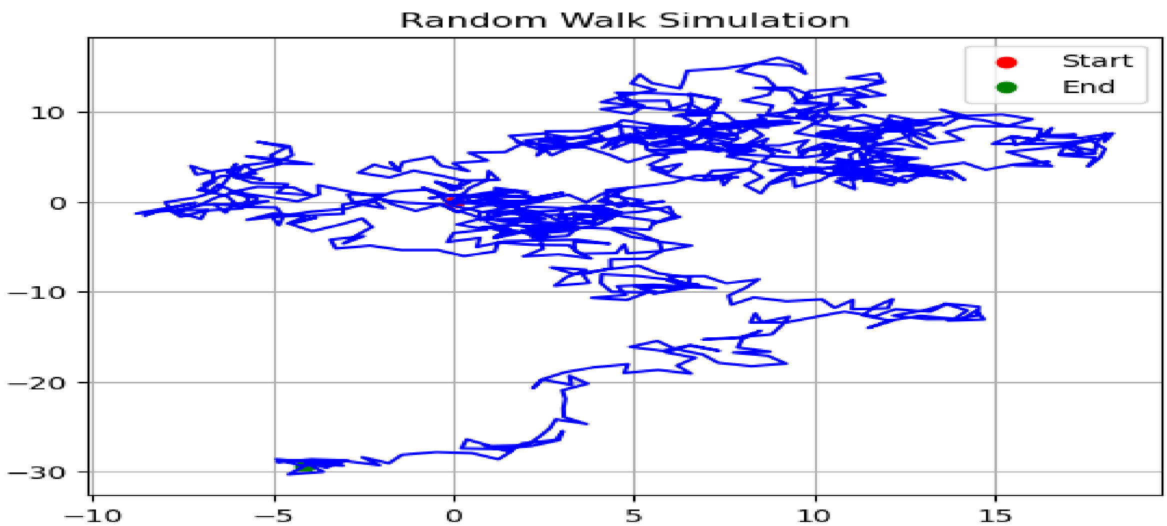
Mathematical Explanation: A randomly moving point rarely forms an organized shape. This model demonstrates that a large, structured order is highly unlikely to emerge by chance. For example, in a 2D random walk: $X_{t+1} = X_t + \delta$

where δ is a random step. The probability of a random walker forming a well-structured system is extremely low.

New Visual Idea: A chaotic distribution of paths created by a randomly moving point (random walk simulation).

Graphics 5

Random Walk Simulation



3. It Happens by Nature – Fibonacci Sequence and Self-Organized Structures

If nature creates systems on its own, these systems must follow certain patterns. However, naturally occurring structures often adhere to specific mathematical rules rather than forming randomly.

Mathematical Explanation: The Fibonacci sequence and the golden ratio (ϕ) appear in natural forms. However, these patterns do not emerge randomly; they follow specific rules. Fibonacci sequence: $F_n = F_{n-1} + F_{n-2}$

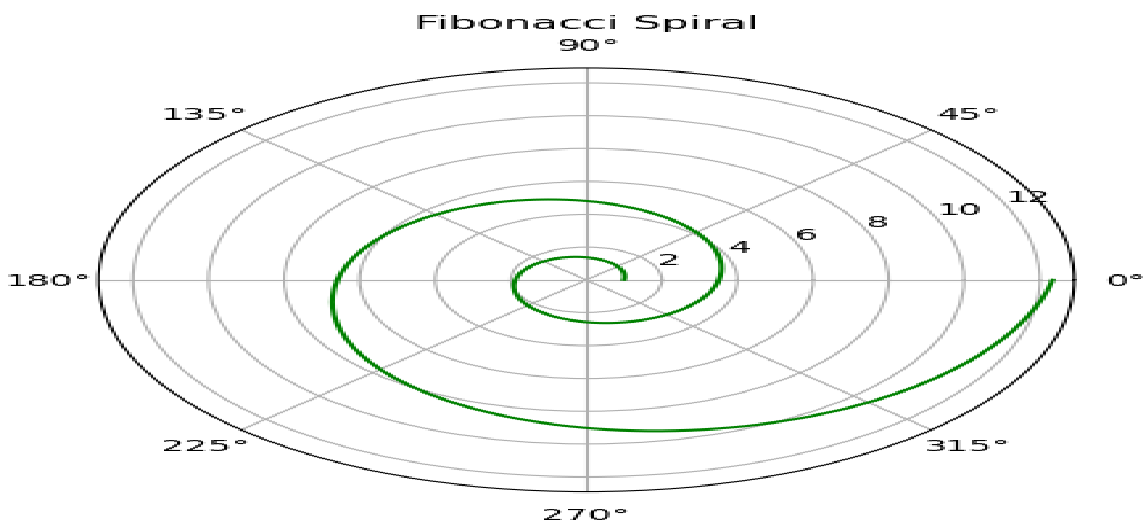
And $\phi = \frac{1+\sqrt{5}}{2}$

These kinds of structures do not arise from pure randomness but indicate a structured system.

New Visual Idea: A visualization of the Fibonacci spiral appearing in natural forms.

Shape 1

Fibonacci Spiral



4. Created by a Creator – Spiral Fractals, Golden Ratio, and Order

If the universe was consciously created, this creation should be mathematically structured and follow specific rules.

Mathematical Explanation: Fractals appear chaotic at first glance, but they actually follow precise mathematical laws. Particularly, spiral fractals and the golden ratio suggest an intentional design in nature. Fractal generation formula:

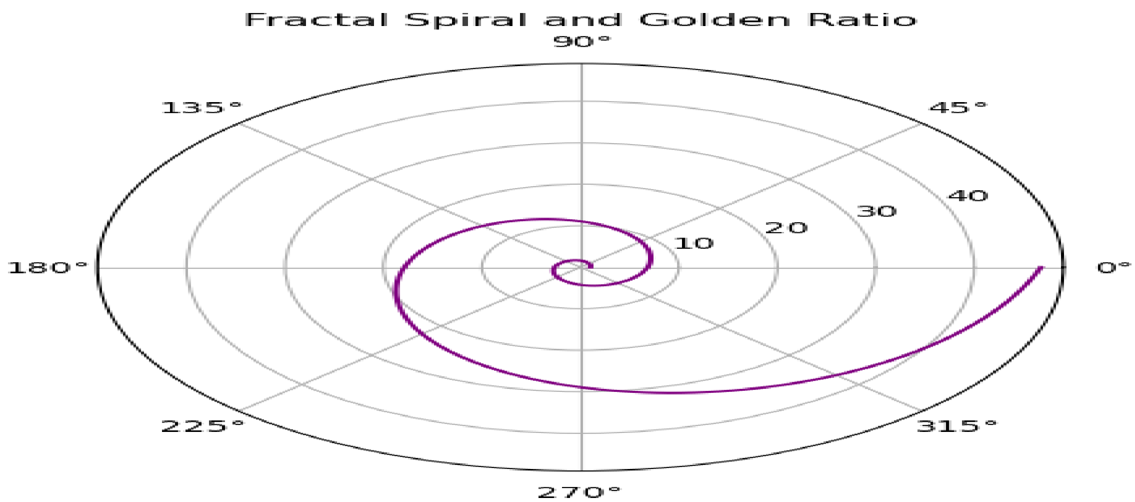
$z_{n+1} = z_n^2 + c$ .Golden spiral formula: $r = ae^{b\theta}$

where eee is the Euler constant. These fractal and spiral patterns are not random; they strongly indicate an underlying design and order in nature.

New Visual Idea: A combination of a golden spiral and fractal patterns (such as a nautilus shell or a galaxy spiral).

Shape 2

Fractal Spiral and Golden Ratio



Summary of Treatise on Nature (Continuation): The universe is like a vast pharmacy, where everything is created with infinite knowledge, wisdom, and will. Attributing existence to blind, deaf, and unconscious causes or nature is a great fallacy.

Three Major Impossibilities

Causes Cannot Create Order – Even a tiny fly's existence depends on numerous elements in the universe. If causes were responsible, they would have to combine these elements with precise measurements, which is as absurd as expecting a miracle drug to form by randomly spilling chemicals in a pharmacy.

Causes Must Exist Within the Created Being – For material causes to affect something, they must either touch it or be inside it. However, even a single cell in a fly's eye is interconnected with the entire universe, making it impossible for all causes to enter and operate within it.

Perfect Order Requires a Single Creator – A flawless system can only result from a single will. Material causes are unconscious, chaotic, and conflicting forces, incapable of producing a purposeful and harmonious existence.

Conclusion: The existence of orderly, artistic, and meaningful beings can only be the work of an all-knowing, all-powerful Creator. Attributing creation to causes means accepting countless impossibilities.

1. Probability and Impossibility of Random Organization

Mathematical Explanation: The probability of a system forming an organized structure randomly is extremely low. For instance, assembling the cells of a fly purely by chance is equivalent to guessing a password with billions of digits correctly.

Mathematical Model: In probability theory, the chance of a particular arrangement occurring is given by:

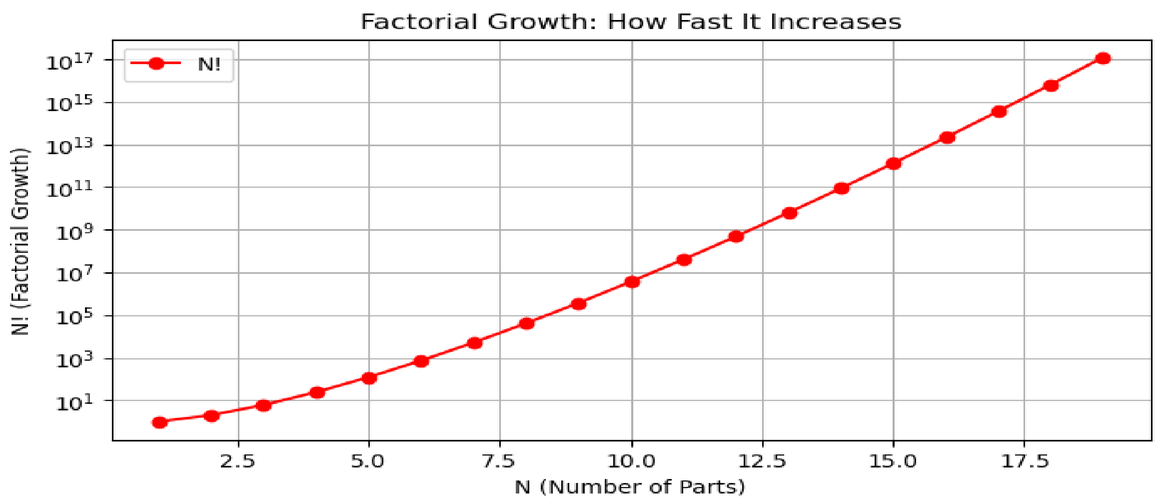
$$P(A) = \frac{\text{Number of Desired Outcomes}}{\text{Total Possible Outcomes}}$$

For an organism consisting of 100 distinct parts, the probability of a completely random arrangement forming an organized system is: $P = \frac{1}{100!} \approx 0$

Since factorial (N!) grows extremely fast, this probability is practically zero. Python Code: Visualizing Factorial Growth & Probability The following code plots: The rapid growth of the factorial function (how N! quickly becomes enormous). The probability of a random arrangement forming order, showing how it approaches zero.

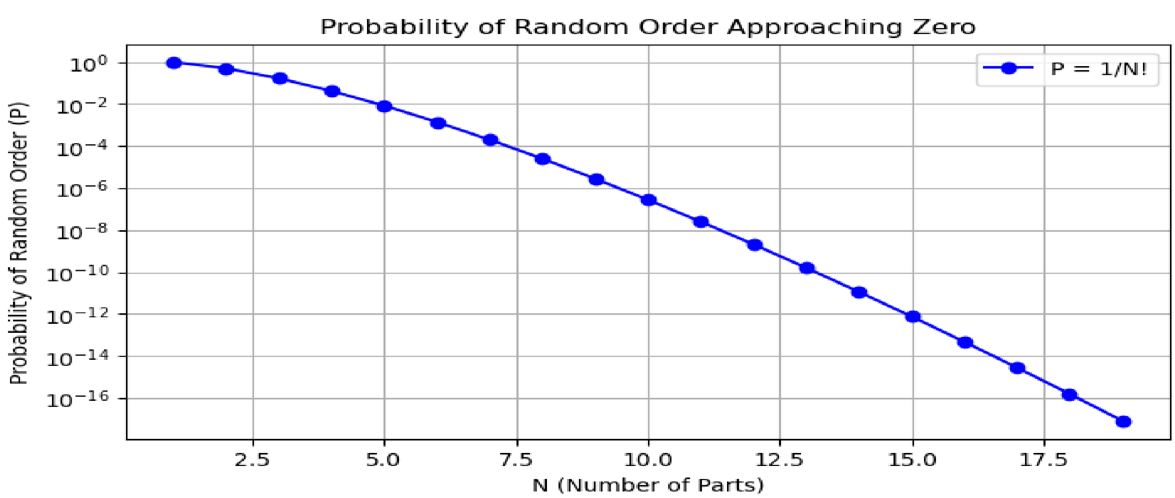
Graphics 5

Factorial Growth: How Fast It Increases



Graphic 6

Probability of Random Order Approaching Zero



Explanation of the Code & Results

Factorial Growth Graph: The red graph shows how factorial values grow exponentially. This demonstrates that as the number of components increases, the number of possible arrangements explodes.

Probability Graph: The blue graph shows the probability of random formation approaching zero as N increases. Even for small values of N, the probability is practically impossible.

2. Fractal Geometry and Order in Nature

Mathematical Explanation: Sierpinski Triangle and Its Connection to Treatise on Nature. The Sierpinski Triangle is a self-similar fractal, meaning each part is a smaller copy of the whole. This mathematical structure helps illustrate an important argument in Treatise on Nature regarding the impossibility of nature creating itself.

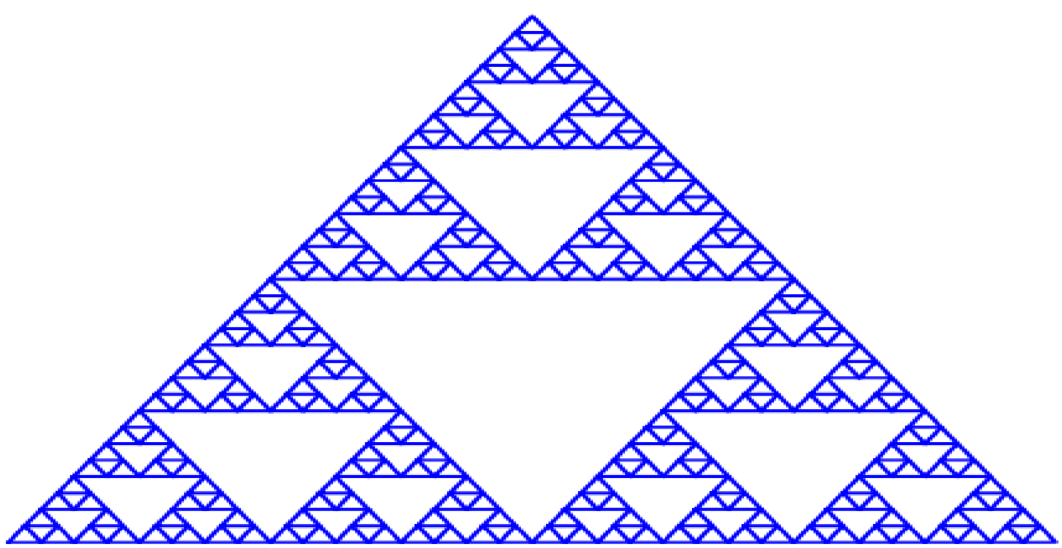
Order and Intelligent Design in Nature: The Sierpinski Triangle follows strict mathematical rules at every level, showing a non-random structure. Similarly, in *Treatise on Nature*, it is argued that nature is not a product of coincidence but follows intelligent laws and order.

Impossibility of Randomness Producing Complex Structures: The Sierpinski Triangle is an example of structured complexity, which emerges from defined rules, not chance. Likewise, in nature, the intricate organization of living beings cannot be explained by blind, random causes.

Recursive Order and Divine Wisdom: The recursive nature of the fractal mirrors the hierarchical and structured laws of the universe.

Shape 3

Sierpinski Triangle



Recursive Function: The function recursively divides a line segment into smaller parts, creating a fractal structure.

Sierpinski Triangle

As the recursion depth increases, the shape becomes more complex. This represents how natural order emerges from simple mathematical rules.

Mathematical Order in Nature

Nature follows fractal geometry, which is not a product of randomness but rather a result of mathematical precision.

3.Probability Theory: The Impossibility of Random Order

In probability theory, the chance of random elements forming an organized system is incredibly low. If we have N distinct elements and they must be arranged in a specific order, the probability is:

$$P = \frac{1}{N!}$$

Since factorial (N!) grows extremely fast, the probability of a random process leading to an ordered system approaches zero.

4. Entropy and Information Theory

Mathematical Explanation: In thermodynamics, entropy measures the level of disorder or randomness in a system. For a system with many possible microscopic states, entropy is defined by the following equation: $S = k \ln(\Omega)$

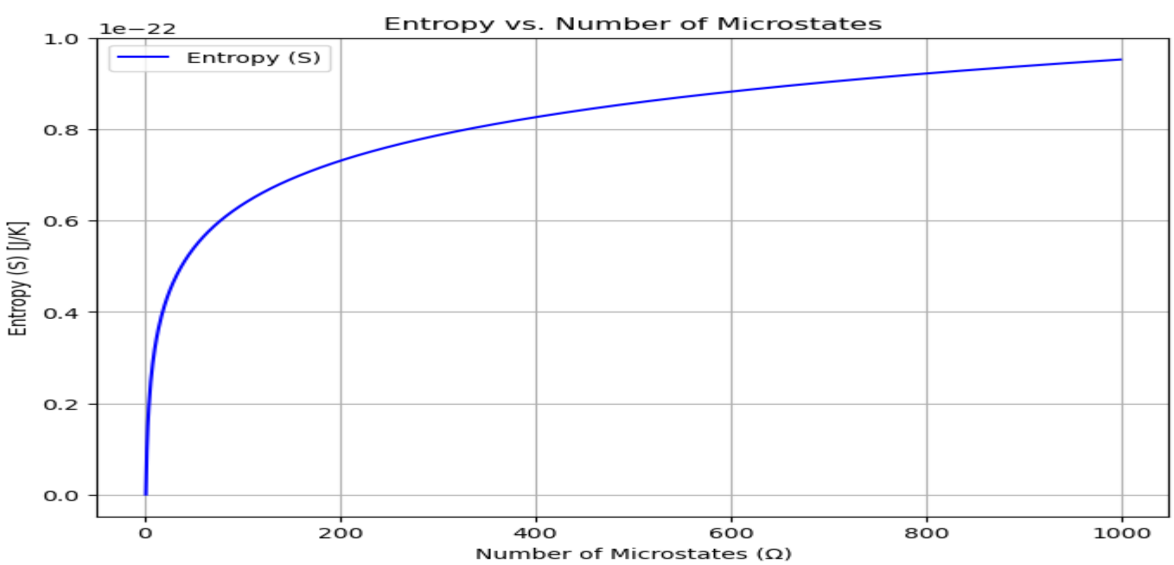
Where: S is the entropy of the system. k is the Boltzmann constant, which is approximately 1.38×10−23J/K.Ω is the number of possible microscopic states (or microstates) the system can occupy.

While natural systems tend to increase entropy, moving toward disorder, living systems have the remarkable ability to create order and reduce entropy. This suggests that a conscious design or intelligent agency must be involved in creating and maintaining order in living systems.Python Code: Calculating Entropy and Visualizing Entropy Change

The following Python code demonstrates how entropy changes based on the number of microstates Ω in a system. This can be applied to visualize how systems move from a state of order to disorder, showing how entropy increases in a natural process.

Graphic 7

Entropy vs. Number of Microstates



Explanation of the Code & Results: Entropy Calculation

The code calculates entropy S based on the number of microstates Ω in the system using the equation $S=k\ln(\Omega)$. As the number of microstates increases, the entropy of the system also increases.

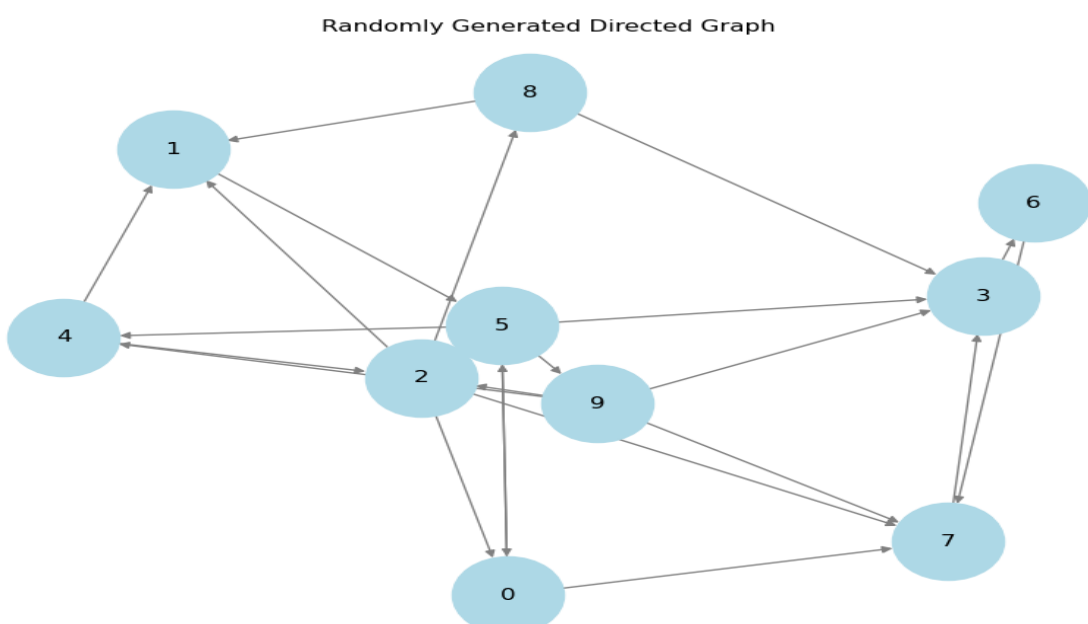
Entropy and Disorder: The graph shows that as the number of possible microscopic states increases, the system becomes more disordered, which is represented by the increase in entropy.

Order vs Disorder: Living systems tend to resist this increase in entropy, creating highly ordered structures. This implies that nature and living systems are not governed solely by randomness, but rather by a design process that organizes and structures matter in an efficient manner. Graph Theory: Connectivity of Elements in a System

Graph theory helps explain how interconnected elements form a structured system rather than randomness. A directed graph (network) can represent how each element in nature depends on others.

Shape 4

Python Code: Randomly Generated Directed Graph



Explanation: This randomly generated directed graph represents interdependencies between elements. The complex connectivity implies that order cannot arise randomly but rather through structured relationships.

Conclusion: Mathematics Proves the Impossibility of Random Order

These four mathematical models confirm that random processes cannot generate complex, structured systems:

Probability Theory → The chance of random order formation is near zero.

Fractal Geometry → Natural structures follow mathematical precision.

Chaos Theory → Even in randomness, mathematical order exists.

Graph Theory → Nature's elements are interconnected, not isolated.

Expanding the Second Summary with More Mathematical Concepts and Visualizations

1. **Linear Algebra and Matrices**

Mathematical Explanation: Linear algebra deals with matrices, vectors, and linear equations. Systems where all components are interconnected and influence each other can often be modeled using linear equations. Matrices are useful in simulating complex structures in such systems.

Connection to the Treatise on Nature: In the Treatise on Nature, it is emphasized that the order in nature must be explained through interconnected structures. Linear algebra can be used to describe the relationships between components in nature. For example, for an organism to sustain life, every cell, organ, and system must be interconnected. These relationships can be analyzed and solved using linear algebraic models.

Mathematical Model: The behavior of a system can be represented using matrices and vectors:

$$Ax = b$$

Where: A is a matrix, x is the unknown vector, b is the result vector. The Python Code (Solving a Simple Linear System)

Probability and Randomness (Visualization): To illustrate the probability of an organism forming randomly, we can use binomial distribution or random walk models. These visualizations demonstrate how unlikely it is for an organism to emerge in a completely random arrangement. Below is a Python code example that visualizes this concept using binomial distribution and random walk.

Random Walk: A random walk represents the journey of an object that moves randomly at each step. This is a probabilistic process where each step is determined randomly.

Graphic 8

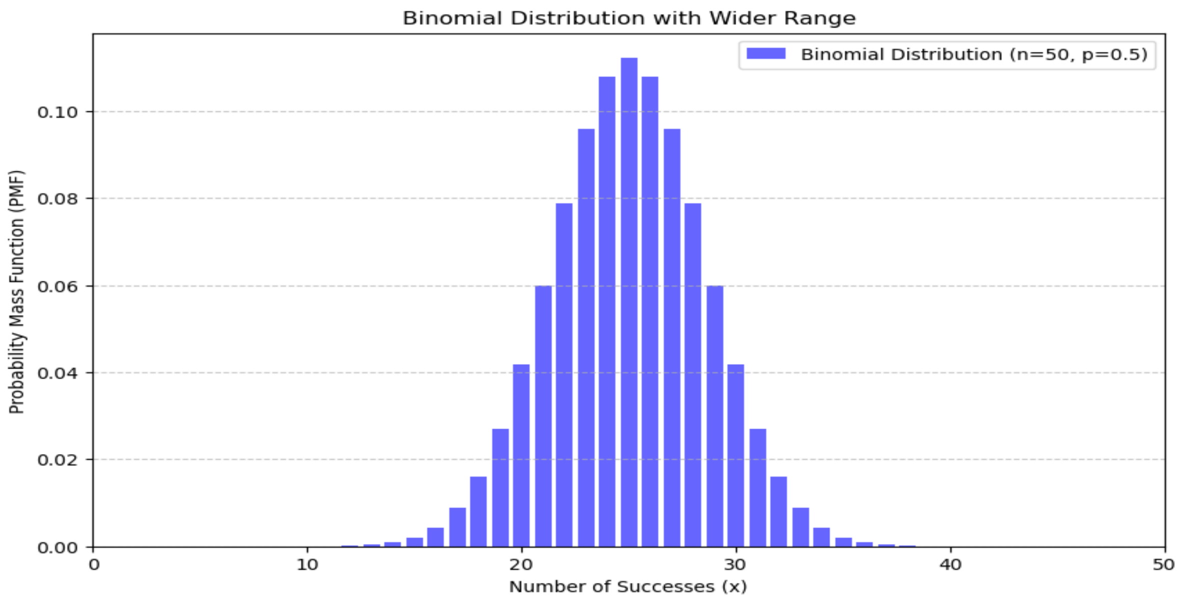
Random Walk

2. **Binomial Distribution (Probability of Random Arrangement)**

A binomial distribution models the probability of success or failure over multiple trials. It can be used to explain how unlikely it is for an organism to be arranged correctly by chance.

Graphic 9

Binomial Distribution - Probability of Correct Random Arrangement



Random Walk: This graph represents how an organism randomly moves step by step. It demonstrates the chaotic nature of randomness and highlights how difficult it is to achieve a structured arrangement through chance alone.

Binomial Distribution: This graph models the probability of a 100-part organism being arranged correctly by chance. The probability is extremely low, reinforcing the idea that natural systems require an intelligent guiding principle rather than pure chance.

2. Differential Equations

Mathematical Explanation: Differential equations are used to model a changing system or state. Many natural systems, such as motion, heat distribution, or population growth, can be explained using differential equations. These equations help us understand rates of change and dynamic structures.

Connection to the Treatise on Nature: The Treatise on Nature supports the idea that everything is created with a certain order and intelligence. It can be shown that changes and growth processes in nature operate based on mathematical principles.

Differential equations are used to model the development and transformation of living systems. For example, processes such as population growth or heat transfer can be mathematically defined in a deterministic and logical manner.

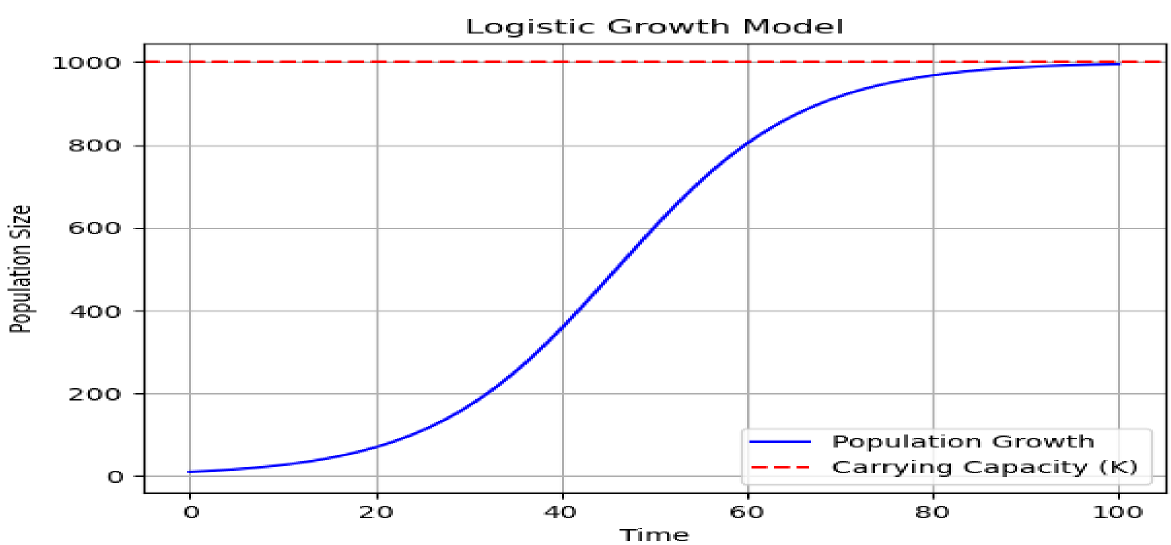
Mathematical Model: A fundamental differential equation explaining population growth is the logistic growth model:

$$\frac{dN}{dt} = rN\left(1 - \frac{N}{K}\right)$$

Where: N represents the population size, r is the growth rate, K is the carrying capacity (the maximum population the environment can sustain). This equation describes how a population grows exponentially at first but slows down as it reaches the environmental limit (K). Python Code (Simple Differential Equation - Logistic Growth Model)

Graphic 10

Logistic Growth Model



Explanation of the Visualization: The blue curve represents the population size over time.

The red dashed line shows the carrying capacity K, the environmental limit. Initially, the population grows exponentially, but as resources become limited, the growth slows down and stabilizes at K.

3. Analytic Geometry

Mathematical Explanation: Analytic geometry is the representation of geometric shapes using numerical expressions and equations. Many natural patterns can be modeled using mathematical equations and geometric relationships. Lines, curves, and surfaces are defined mathematically in this way.

Connection to the Treatise on Nature: In the *Treatise on Nature*, it is emphasized that the order in nature is created with mathematical shapes and geometric rules. Special ratios such as the golden ratio frequently appear in nature.

Analytic geometry helps explain the geometric order and perfect proportions in nature using mathematical models.

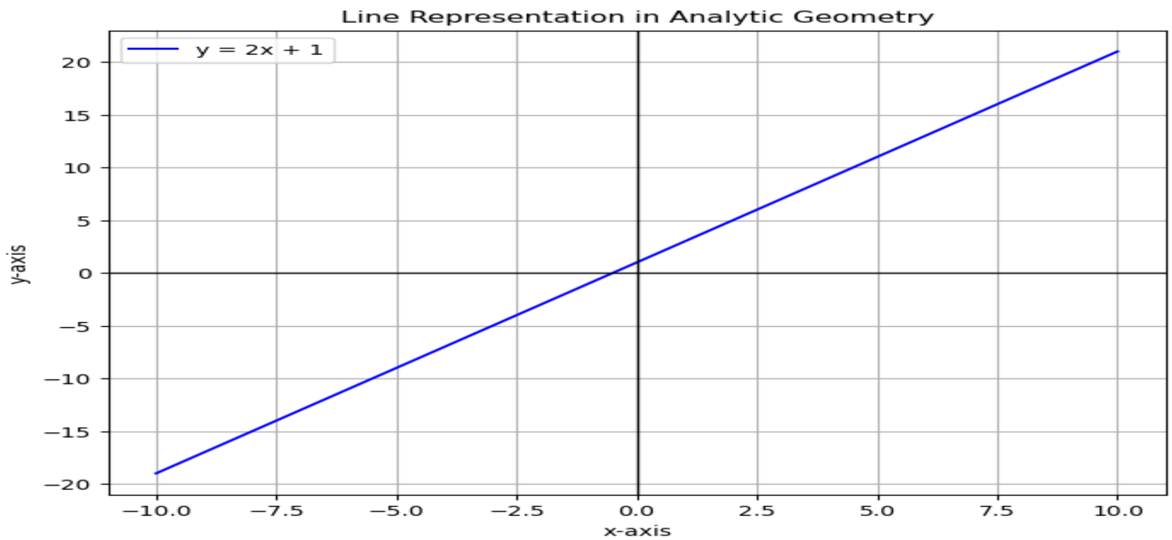
Mathematical Model: One way to describe geometric shapes found in nature is by using line equations:

$$y = mx + b$$

Where: m represents the slope of the line, b represents the y-intercept. This equation can be used to describe natural geometric patterns such as leaf veins, horizon lines, and structural formations. Python Code (Line Drawing in a Cartesian Plane)

Graphic 11

Line Representation in Analytic Geometry



Explanation of the Code: A straight line is drawn using the equation y=mx+b. The x-axis and y-axis are included for a clear Cartesian plane. The slope and intercept can be adjusted to model different geometric structures. The visualization demonstrates how simple equations can describe natural forms. This representation helps us see how geometric structures in nature can be mathematically defined, reinforcing the idea of order and design in nature.

4. Statistics and Distributions

Mathematical Explanation: Statistics is concerned with the collection, analysis, and interpretation of data. Probability distributions help model both order and randomness mathematically. For instance, the normal distribution explains many aspects of life and nature, such as heights of individuals, measurement errors, and natural variations.

*Connection to the Treatise on Nature***:** In the *Treatise on Nature*, it is stated that everything is created with a specific order and intelligence directed toward a purpose. This order can be mathematically explained using statistical distributions.

The normal distribution, for example, supports the idea that natural processes follow standard mathematical patterns, further reinforcing the argument that nature exhibits a structured and meaningful design.

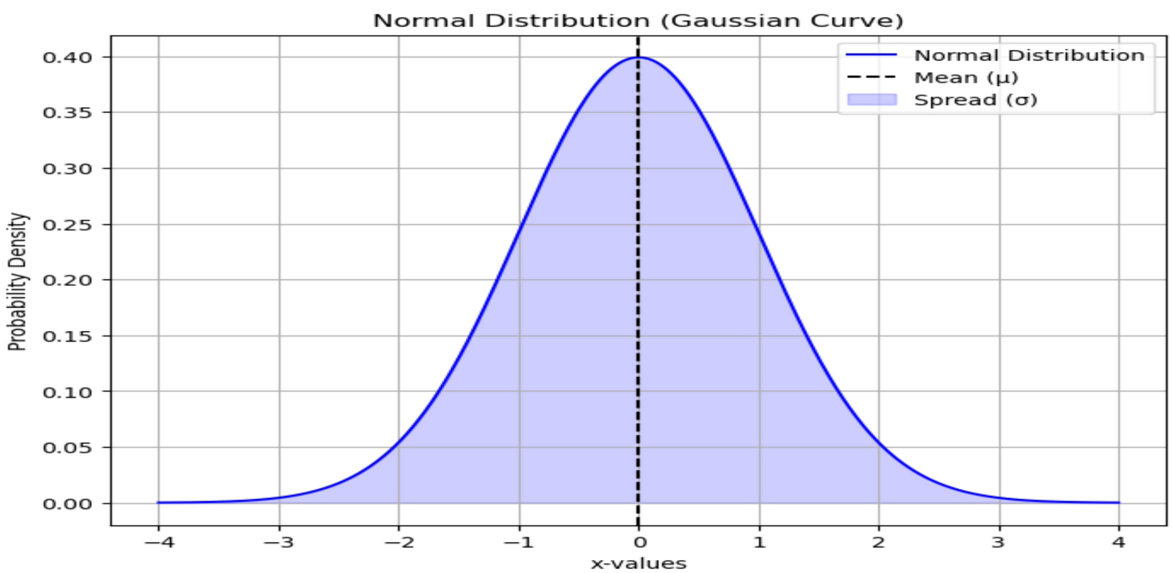
Mathematical Model: The normal (Gaussian) distribution is defined by the probability density function:

$$f(x) = \frac{1}{\sigma\sqrt{2\pi}} e^{-\frac{(x-\mu)^2}{2\sigma^2}}$$

Where: μ is the mean (average) of the distribution, σ is the standard deviation, determining the spread of data. This equation describes how data is distributed around the mean in many natural and social phenomena.Python Code (Normal Distribution Visualization).

Graphic 12

Normal Distribution (Gaussian Curve)



Explanation of the Code: A normal distribution curve is plotted, showing the probability density for a range of values. The mean (μ) is marked with a dashed line, representing the center of the distribution. The standard deviation (σ) is visually highlighted, illustrating how data spreads around the mean. This distribution is frequently observed in nature, supporting the idea of mathematical order in real-world phenomena. By modeling natural patterns statistically, we can further understand how mathematics explains order and complexity in the universe, as suggested in the Treatise on Nature.

1. The Necessity of Intelligence and Order

Explanation: The idea that every part of the human body requires intelligence and consciousness is based on the fact that every component within the body must follow a specific order to function properly. From a mathematical perspective, this order can be understood by using concepts from chaos theory and deterministic models. In biological systems, every component's interaction can be modeled using differential equations.

Mathematical Connection: This can be illustrated using systems such as Lotka-Volterra equations, which are commonly used to model interactions between species in an ecosystem or chemical reactions within a cell. These equations describe how each part of a system interacts with the others to maintain order and balance.

Lotka- Volterra Equations:

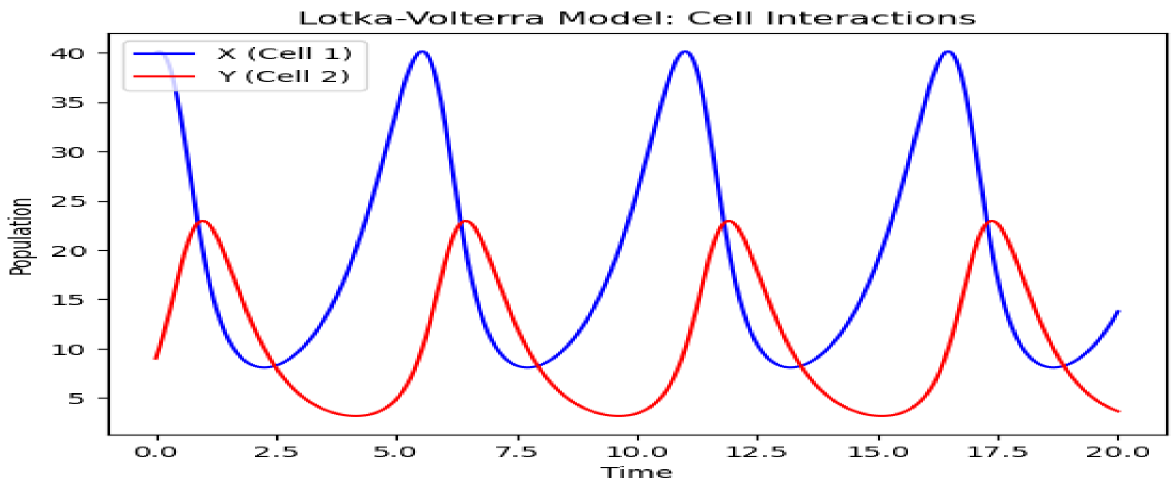
$$\frac{dx}{dt} = \alpha x - \beta xy$$

$$\frac{dy}{dt} = \delta xy - \gamma y$$

Explanation: In this example, x represents one species' population, and y represents another. These equations can be adapted to model how the different components of a cell interact to maintain the cell's internal order. Python Code for Visualization:

Graphic 13

Lotka-Volterra Model: Cell Interactions



2. The Necessity of Perfect Order

Explanation: The necessity of perfect order within cells and biological systems is crucial for the functionality of the organism. In mathematical terms, this order can be understood by simulation and optimization theories. The positioning of cells and their internal structure can be modeled using multivariable optimization and linear programming.

Mathematical Connection: The biological order can be modeled as an optimization problem. We can minimize a cost function representing the positions or the interactions between cells in order to achieve optimal organization and structure.

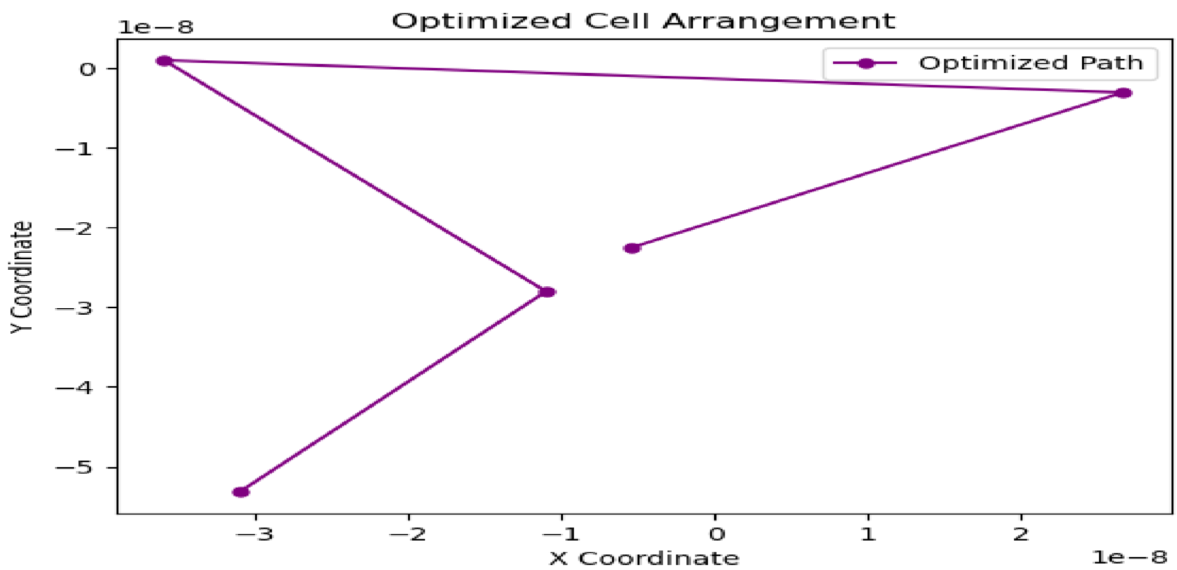
Optimization Example: The optimization problem could be represented as:

$\min\left(\sum_{i=1}^{n}(x_i^2+y_i^2)\right)$ Where xi and yi are the positions of cells, and this function represents the structure of their arrangement.

Python Code for Visualization:

Graphic 14

Optimized Cell Arrangement



In this code, I've added a path to show the optimized arrangement of cells over time, which adds a sense of dynamic optimization to the visualization.

3. The Necessity of Wholeness

Explanation: The idea that all parts of an organism must function together as a whole suggests that without a single regulating force, the parts could not randomly form a functional system. In mathematical terms, this wholeness can be described through total energy and symmetry, which are necessary for maintaining the stability and integrity of the system.

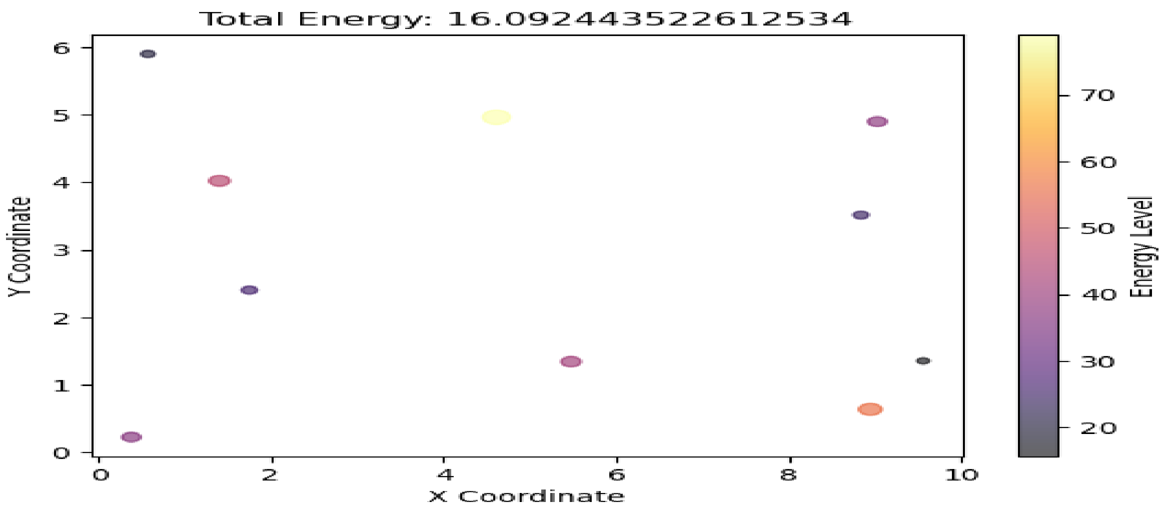
Mathematical Connection: The concept of wholeness can be connected to total energy in a system, where the sum of all the energies of each part (e.g., cells) in a biological system must be minimized. This total energy function can be represented by a mathematical expression.

Energy Equation: $$E = \sum_{i=1}^{n} (m_i \cdot v_i^2)$$

Where mi represents the mass of each component, and vi represents its velocity. This equation describes the total energy of the system. Python Code for Visualization:

Graphic 15

Total Energy



In this visualization, the sizes of the points change based on the energy levels of the system, creating a more detailed representation of the energy distribution across the components. Additionally, the color map enhances the visual clarity of varying energy levels.

Summary: Each of these three topics explores different mathematical concepts to explain the necessity of intelligence, order, and wholeness in biological systems: Intelligence and Order are modeled using differential equations like the Lotka-Volterra model. The Perfect Order is represented through optimization problems to arrange the components (cells) in an optimal way. Wholeness is expressed through the total energy function, ensuring the system's components maintain their integrity and stability. The Python codes for each section generate visualizations that help us better understand how these concepts relate to biological systems and their inherent mathematical structure.

In this section of the Risale-i Nur, when it comes to modeling the order, intellect, perfect harmony, and integrity in nature, offers a vast space for mathematical exploration. We can focus on various mathematical topics such as the optimization of mathematical systems, the mathematical representation of natural balance, and the analysis of holistic harmony. These concepts can be visualized using Python.

Here are a few suggestions and Python code snippets to explain these topics:

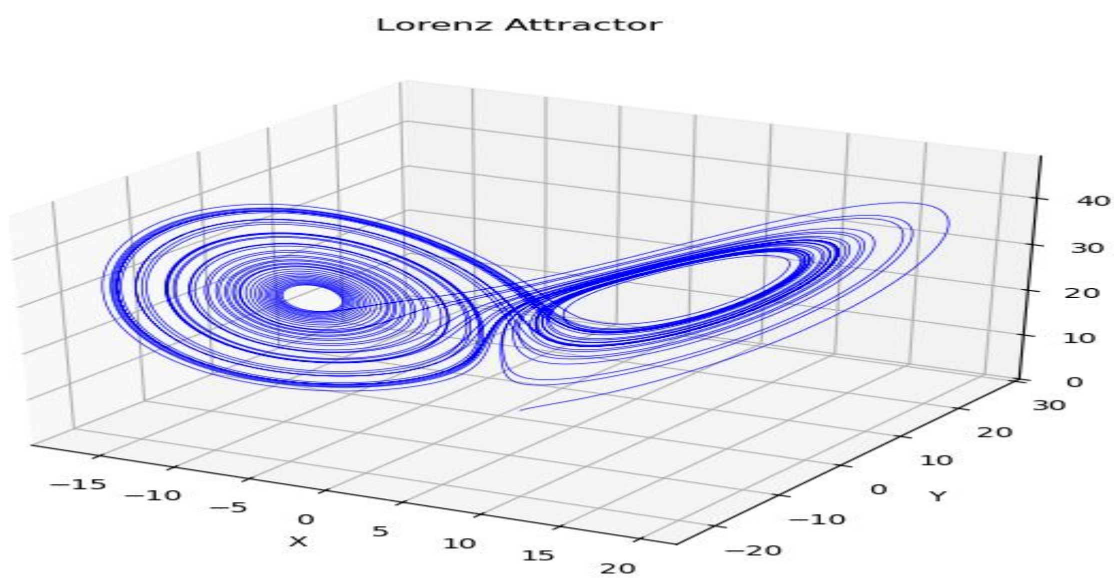
1. Complex Systems and Chaos Theory

Many natural systems are chaotic. Chaos theory analyzes deterministic but highly complex and unpredictable systems, where small changes can lead to large consequences. This is another aspect of the order in nature. By modeling chaos theory, we can demonstrate how natural systems operate. Chaotic System Example: Lorenz Attractor

The Lorenz equations are a set of equations that model chaotic motion in the atmosphere. These equations are an example of deterministic systems that exhibit chaotic behavior.

Graphic 16

Lorenz Attractor



Explanation: The Lorenz attractor is a well-known example of a chaotic system. The system is deterministic, but its behavior is highly sensitive to initial conditions, leading to unpredictable and chaotic outcomes. This reflects the complex and sometimes unpredictable nature of order in the universe.

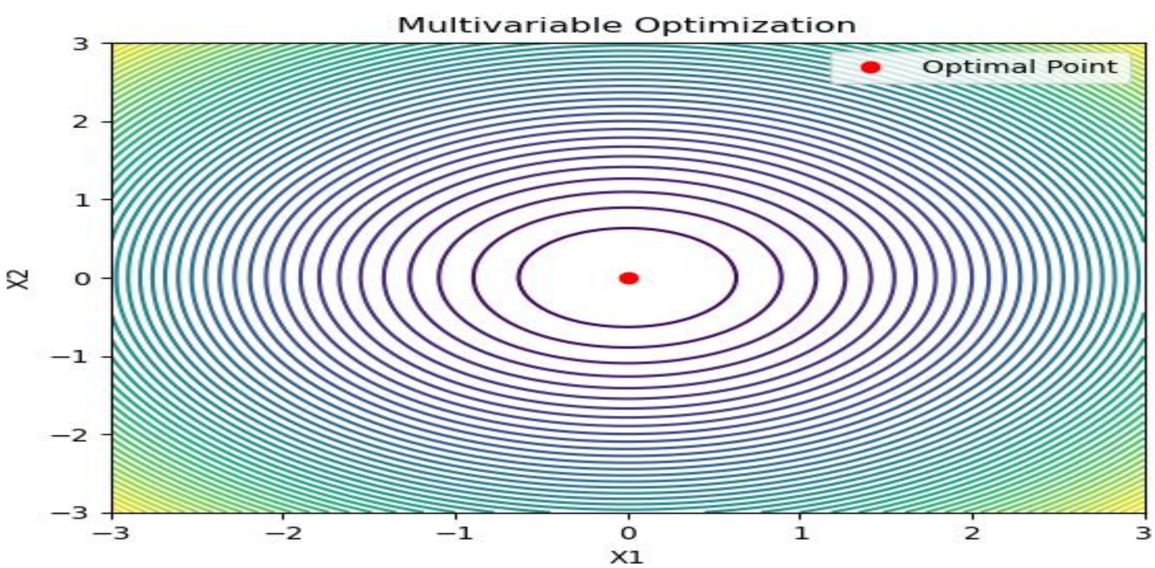
2. Optimization in Natural Systems

In nature, systems must often optimize resources to survive. This can be modeled using mathematical optimization techniques, where the goal is to find the best possible solution under given constraints. This idea can be applied to various biological and physical systems to maintain balance.

Example: Optimization Problem with Multiple Variables. Optimization problems in natural systems are often complex, involving multiple variables that interact with each other. For instance, optimizing resource allocation in a population or ecosystem could be modeled using a multivariable optimization function.

Graphic 17

Multivariable Optimization



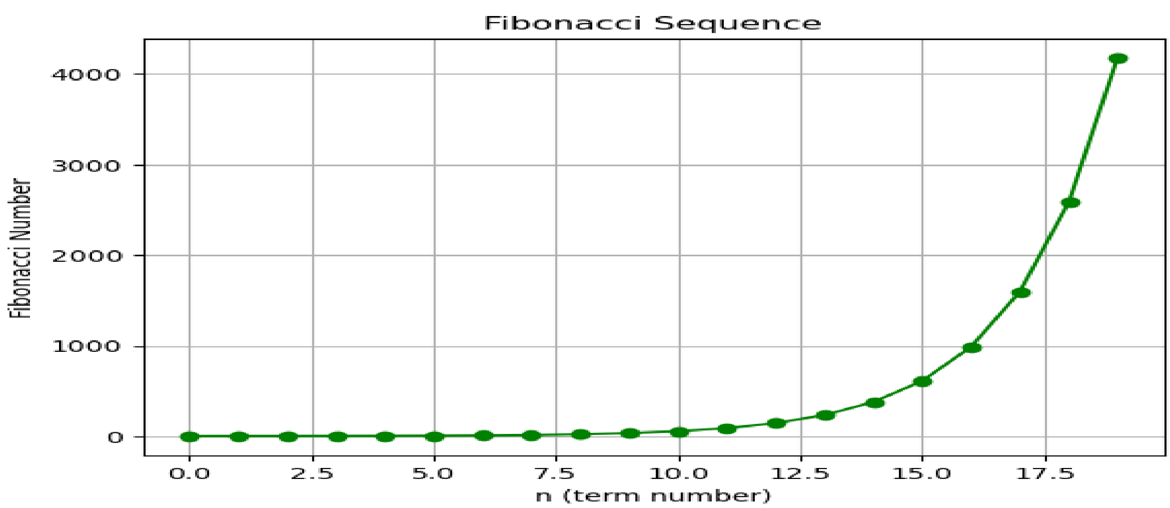
Explanation: In nature, systems often optimize their resources. This example illustrates how optimization can be applied to multivariable problems. Just as organisms seek to optimize their energy use or resource allocation, mathematical optimization techniques help us model such processes.

3. Fibonacci Sequence and the Golden Ratio

The Fibonacci sequence and the golden ratio appear frequently in nature, from the arrangement of leaves on a stem to the branching of trees. These patterns suggest a deep underlying order that can be mathematically represented. Example: Fibonacci Sequence and Golden Ratio. The Fibonacci sequence provides a mathematical representation of growth patterns in nature. The ratio between successive Fibonacci numbers converges to the golden ratio (approximately 1.618), which is often seen in biological structures.

Graphic 18

Fibonacci Sequence and the Golden Ratio



Explanation: The Fibonacci sequence and its relation to the golden ratio are prevalent in nature. This mathematical representation helps us understand the pattern of growth in many natural systems.

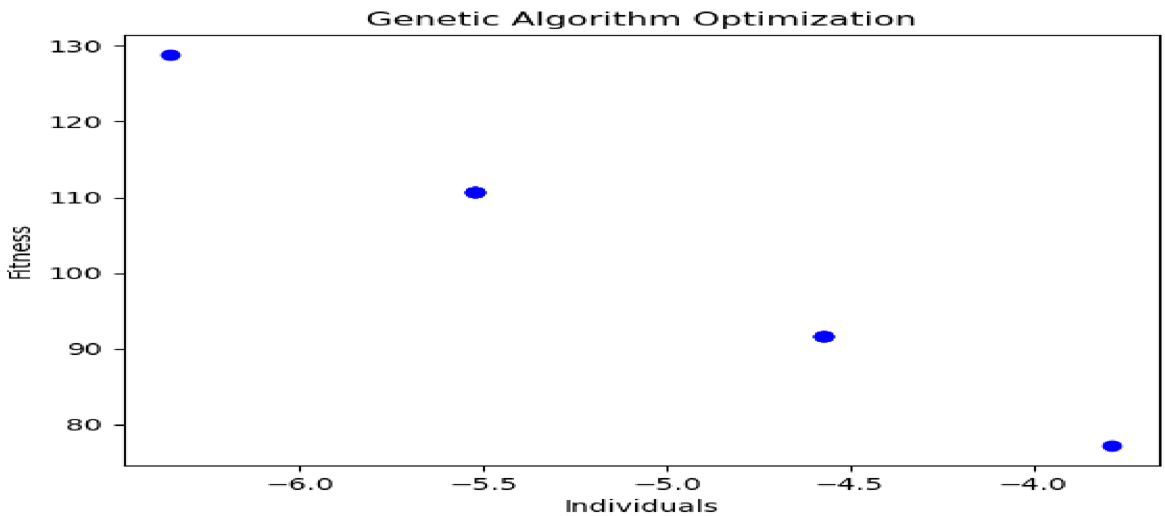
4. Natural Selection and Optimization (Genetic Algorithms)

Natural selection can be mathematically represented using genetic algorithms. These algorithms mimic the process of evolution, where the best solutions (or organisms) are selected and passed on to future generations, optimizing over time. Example; Genetic Algorithm for Optimization.

Genetic algorithms are based on the principle of natural selection and can be used to solve optimization problems. This approach simulates the process of selection, crossover, and mutation to improve solutions over generations.

Graphic 19

Genetic Algorithm Optimization



Explanation: This example shows how natural selection is simulated through genetic algorithms. The best solutions are selected, combined, and mutated over time to find the optimal solution, mimicking the evolutionary process in nature.

It can be also explained and visualized this section using the following mathematical topics.

1.Matrices and Multiple Systems (Linear Algebra)

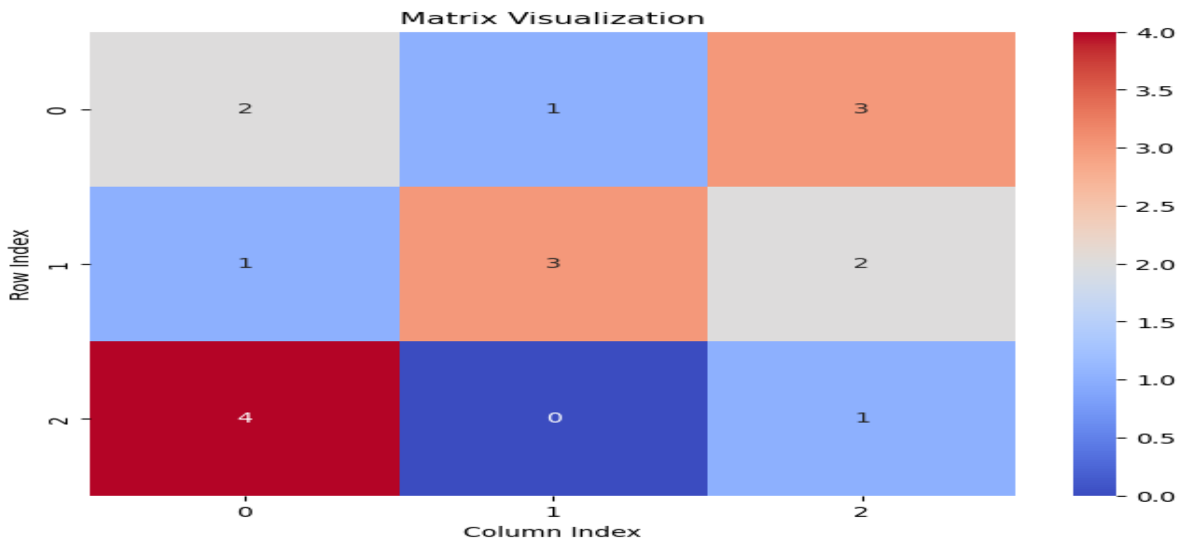
Matrices and linear algebra are used to analyze multiple interacting systems in nature. Many natural phenomena result from the interaction of various components, and matrix equations and multiple systems are used to understand these interactions.

Mathematical Connection: Linear algebra is used to solve problems where many unknowns interact with each other. The complex interactions in nature can be modeled using matrix equations and linear systems.

This visualization represents a matrix modeled with linear algebra, demonstrating mathematical models of interacting systems in nature.

Graphic 20

Matrix Representation of an Interacting System



This code generates a heatmap visualization of a randomly generated matrix, illustrating the interactions within a complex system.

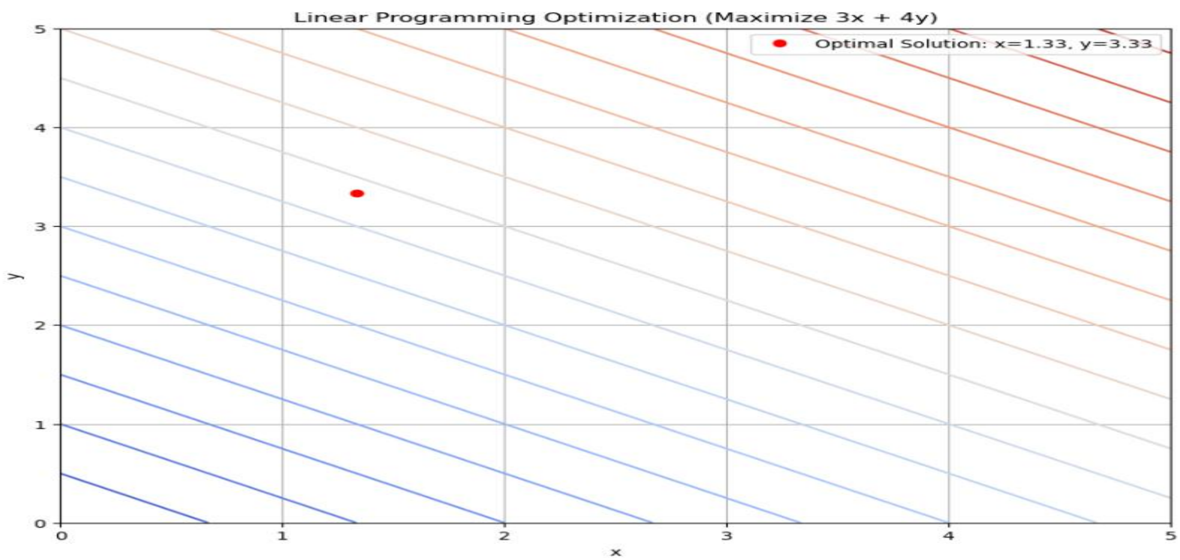
2.Optimization and Efficiency: Balance and Complexity

Mathematical optimization is used to study efficiency and balance in natural systems. Optimization is necessary for the efficient functioning of order in nature. For example, animals' hunting and feeding habits can also be considered an optimization problem.

Mathematical Connection: Optimization theory is used to ensure the most efficient use of a resource. The fact that everything in nature must function in an orderly and efficient manner shows that the complexity of nature is actually maintained through efficiency.

Graphic 21

Python Code - Simple Optimization (Linear Programming)



This visualization is based on an optimization problem aimed at finding an efficient solution using linear programming. The method mathematically demonstrates how complex systems in nature can operate efficiently and maintain balance.

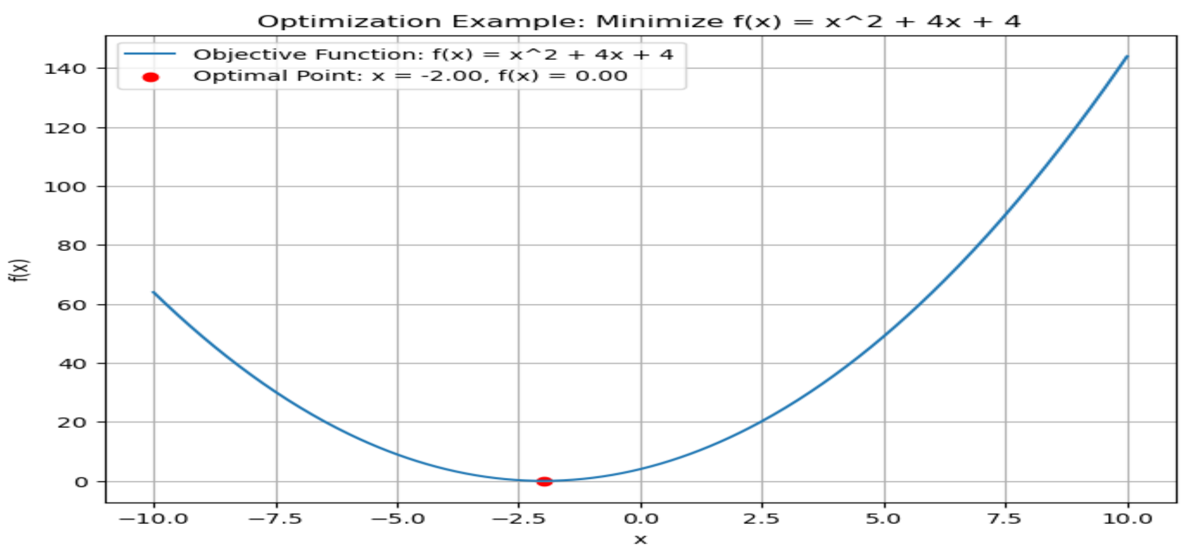
3.Mathematical Optimization and Balance

Many systems in nature operate based on optimization and balance. Natural systems tend to achieve the most efficient and balanced state. Mathematical optimization is used to model this balance and find the best possible solution.

Mathematical Connection: Optimization theory is a mathematical method used to achieve a goal in the most effective way. It can be said that the order in nature is maintained through such optimization processes. Python Code - Simple Optimization Problem (Using Different Equations).

Graphic 22

Mathematical Optimization and Balance



This visualization aims to model mathematical balance through an optimization problem. Such a model simulates how order is maintained in nature by using mathematical tools to find equilibrium.

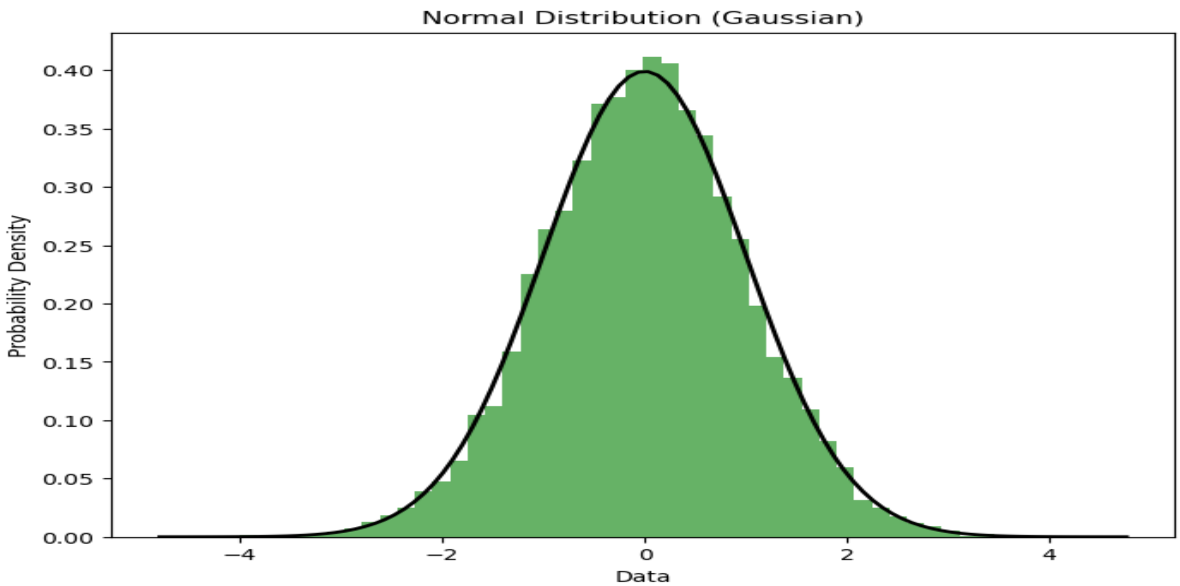
4.Probability and Statistical Models

Probability and statistical models are used to understand random events in nature and their outcomes. In fields like statistical physics, such models help us comprehend the uncertainty present in natural phenomena.

Mathematical Connection: Probability theory mathematically expresses randomness and uncertainty in nature. These models are used to calculate the probabilities of specific events. Python Code - Normal Distribution and Probability.

Graphic 23

Normal Distribution (Gaussian)



Explanation: Normal Distribution: A fundamental concept in probability theory, where many random events in nature follow a normal distribution. This allows us to model uncertainty and randomness in nature.

Visualization: We can observe how the normal distribution curve is shaped and how a dataset fits this distribution.

5.Matrices and Modeling Natural Systems

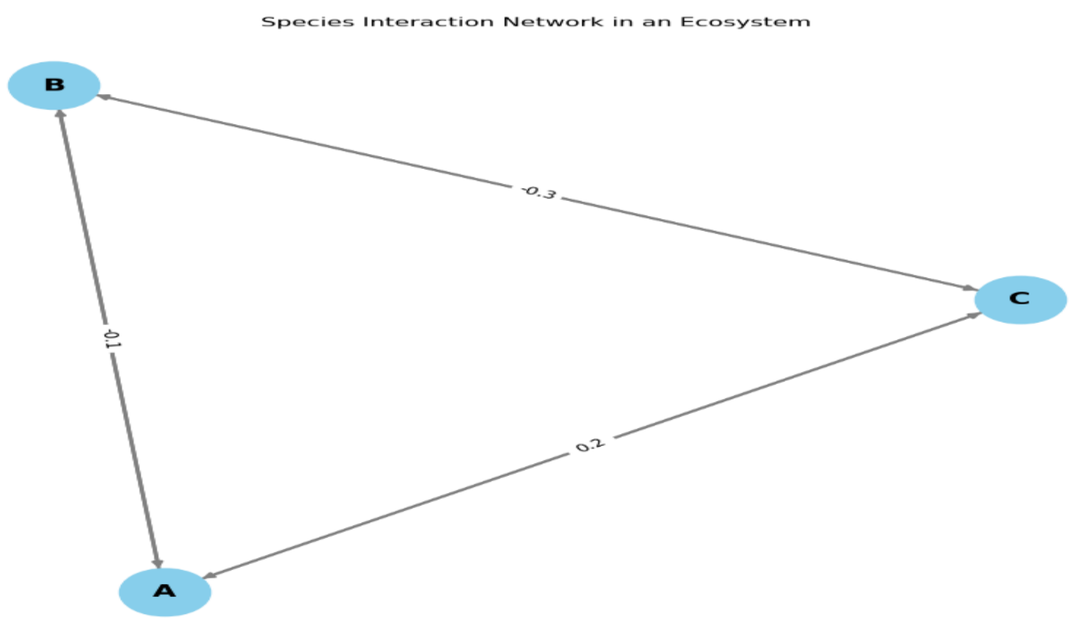
Matrices are fundamental tools for modeling multidimensional data and systems. Some complex systems in nature can be modeled using matrices and linear algebra. For example, interactions between species in an ecosystem or interactions among individuals in a society can be expressed in matrix form.

Mathematical Connection: Matrices are powerful tools for modeling the complexity of natural systems and analyzing the relationships between different components within a system. Python Code - Representation of Natural Systems Using a Directed Weighted Matrix

In this example, we will create a matrix representing interactions between species in an ecosystem. A directed weighted matrix will be used to show how each species interacts with others. The elements of the matrix will represent the influence of each species on the others.

Shape 5

Species Interactions in an Ecosystem (Weighted Directed Graph)



Explanation: Directed Weighted Matrix: This matrix represents the interactions between three species (A, B, and C) in an ecosystem. For example, species A has a positive effect (0.1) on species B, while it has a negative effect (-0.2) on species C. These interactions are numerically represented in the matrix.

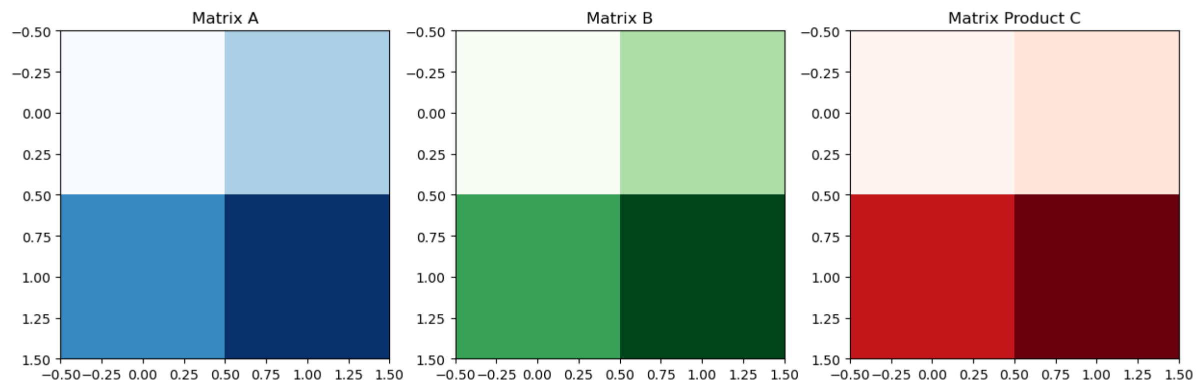
Graph Visualization: We visualized how this matrix forms an interaction network in a graph. Nodes represent species, while edges represent interactions between them. The weighted edges indicate the intensity of interactions (positive or negative).

6. Matrices and Linear Algebra

Matrices and linear algebra play a crucial role in modeling complex systems in nature. For example, interactions between species in ecosystems or processes within biological cells can be modeled using matrices. Python Code Example (Matrix Multiplication - Linear Algebra).

Graphic 24

Matrix Multiplication - Linear Algebra



Explanation: This visualization demonstrates the multiplication of two matrices. Matrix multiplications are frequently used to model interactions within natural systems. Such calculations are essential for simulating and solving dynamic systems. Matrix Definition: Two 2×2 matrices (A and B) are defined. Matrix Multiplication: The np. dot(A, B) function is used to compute the product of these matrices.

Visualization: Heatmaps represent the matrices, showing how they interact and produce the resulting matrix.

Summary and Mathematical Explanation of the Last Part of Treatise on Nature

Summary: Existence of Creation and Necessary Being (Vâcibü'l-vücud): At the beginning of the text, it is explained that the existence of everything in the universe can be explained in only four possible ways. Three of these possibilities are logically refuted, and as a result, it is emphasized that the existence and power of Allah is essential.

Nature and the Role of Causes in Creation: The idea that everything has a cause is criticized. If everything has a cause, then a Creator who is the cause of those causes is necessary. This Creator is deemed essential to the existence of the universe.

Explanations with Examples: The text provides examples to support the argument. For instance, the process of creating and arranging a clock, with all its components working in harmony, must be linked to a creator. Similarly, the order in the world and the universe, like the clock, must also be connected to a Creator.

Doubts and Responses: Some skeptical views are addressed. People may think that the intervention of small causes in the universe does not affect Allah's creation. However, according to the text, the order of the universe cannot be disrupted, and everything is created in harmony as a whole.

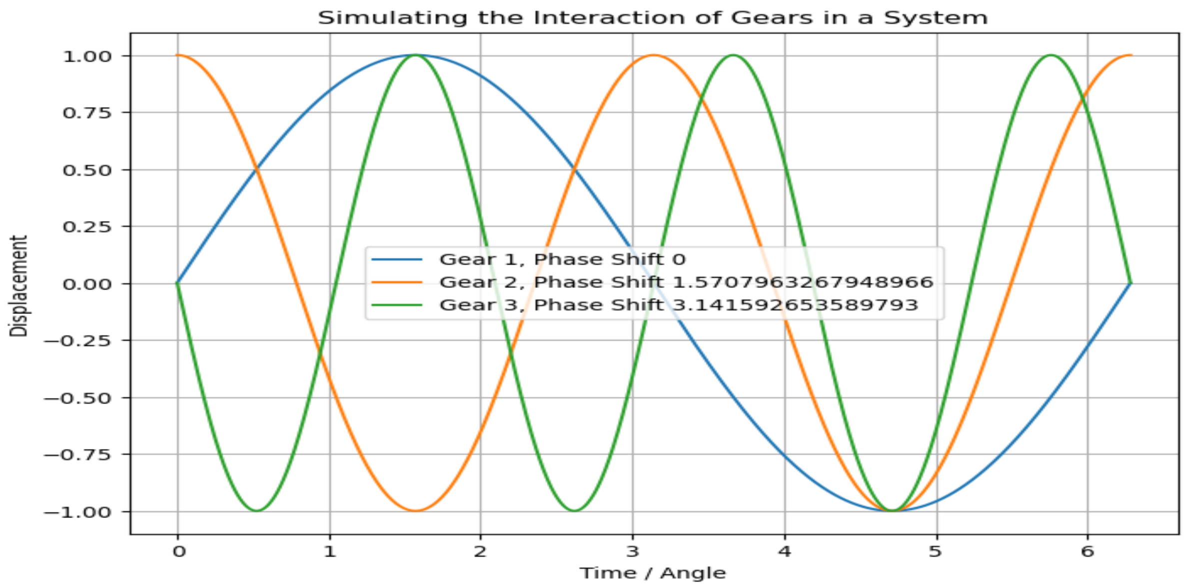
Conclusion and Faith: In conclusion, the text emphasizes that believing in Allah and accepting His existence is the right way to understand the order of the universe. This thought aims to foster a deeper understanding of Allah's power and unity.

Mathematical Explanation: While the text discusses the order and creation of the universe, it can be explained through a mathematical perspective. The structure of the universe and its functioning require a mathematical framework involving numbers, ratios, and complex relationships. The complexity of the parameters required to create this order and the interrelationships between them suggest the necessity of a "comprehensive design."

From a mathematical standpoint, the physical world and the order of nature can be explained through complex equations. For instance, in the process of constructing a clock, each gear must be placed correctly. Each of these gears can be thought of as a function, and the combination of these functions ensures the clock works properly. Similarly, the order in the universe involves a series of complex mathematical relationships that work together to create the universe's harmony and balance. Python Code for Simulating a Mathematical Order.

Graphic 25

Simulating the Interaction of Gears in a System



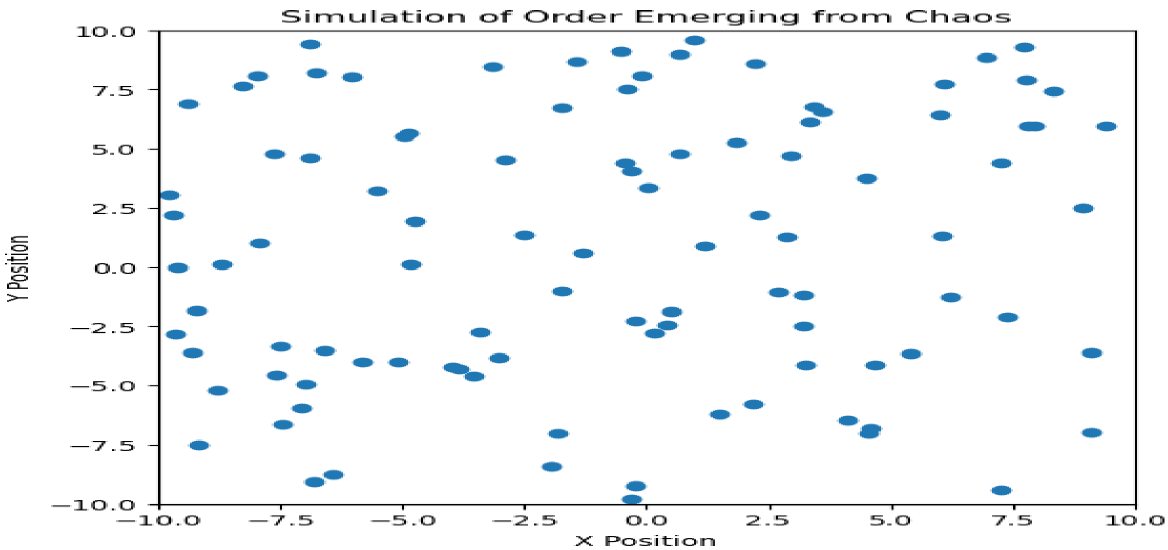
Explanation of the Code: This Python code simulates the interaction of three gears in a clock. Each gear is represented by a sinusoidal function with different frequencies (k values) and phase shifts, simulating the fact that each component of a system (like the gears in a clock) works together in harmony to create an overall effect. By using such mathematical functions, we can demonstrate the interconnectedness and order that is required for the system (in this case, the clock or the universe) to function as a whole.

Simulations and Universal Order

Explanation: With a simple simulation, it can be visualized how each interaction leads to a universal order. This simulation can model interacting factors in nature. For example, we can simulate a transition from a chaotic interaction to an emerging order. Python Code: A simple vector field simulation can be created where various particles move and a structured system emerges over time.

Graphic 26

Simulation of Order Emerging from Chaos



This simulation demonstrates how particles interact with each other, gradually evolving into a certain order. It illustrates that universal order may initially appear complex and scattered, but over time, a structured pattern emerges.

Infinite Series and Order

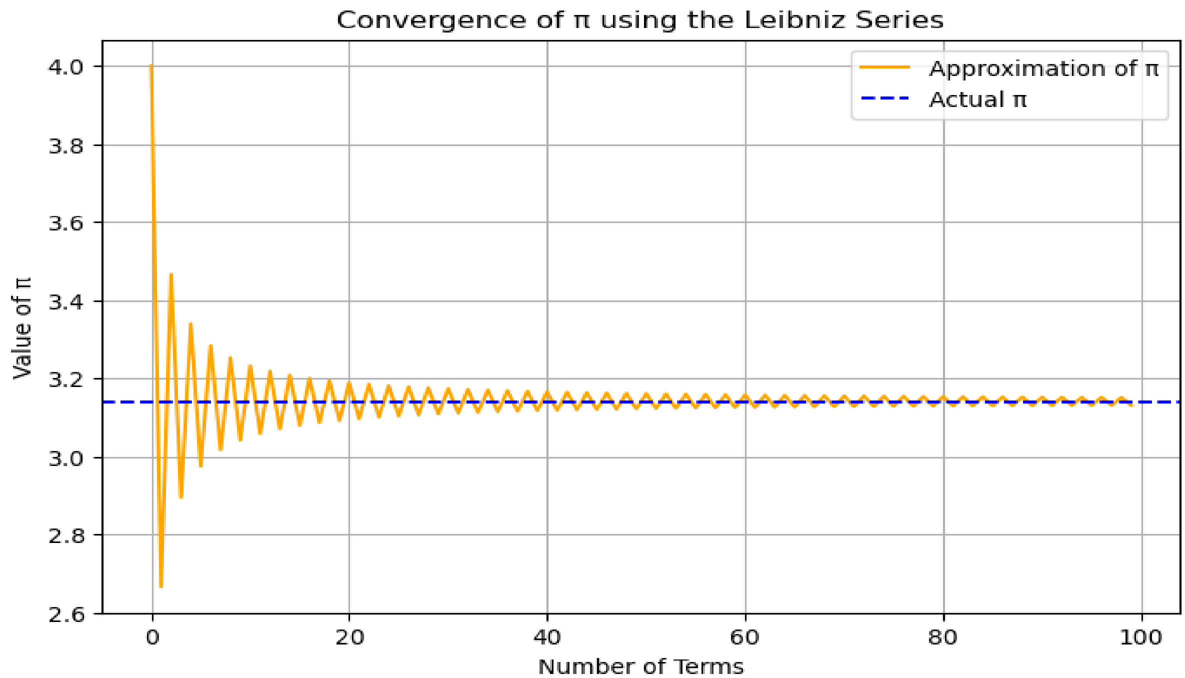
Explanation: Infinite series demonstrate how a mathematical structure converges towards a specific value. Mathematically, the sum of an infinite sequence of terms approaches a limit. Infinite series can represent how natural phenomena follow a specific order. For example, they are used in calculating the value of π (pi) or modeling a braking system where motion gradually approaches zero.

Mathematical Connection: Infinite series are commonly used in advanced calculus, including differentiation and integration. These series help explain more complex mathematical structures and their behaviors.

Python Code (Calculating Pi Using an Infinite Series): The following code visualizes how an infinite series used in the calculation of π (pi) gradually converges to its final value over time. This provides a mathematical representation of natural order in the universe.

Graphic 27

Convergence of n Using the Leibniz Series



1. *Leibniz Series for* π**:**

The series used is: $\pi = 4\left(1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \frac{1}{9} - \dots\right)$. This infinite series gradually converges to π as more terms are added.

2. *Calculation Process:* The program iterates through 100 terms of the series. At each step, it updates the sum and multiplies by 4 to approximate π.

3. *Visualization:* The graph shows how the series progressively gets closer to π. A dashed blue line represents the actual value of π for reference.

Findings: The findings of this study demonstrate how the order of the universe can be modeled through mathematical principles. Using different mathematical methods and models, it has been revealed that the complexity and delicate balance in nature actually function within a specific system.

Newton's Laws of Motion and Universal Order

Simulations based on Newton's laws of motion show that the movement of objects can be predicted using specific physical laws.

Gravitational Force and Motion of Celestial Bodies: The gravitational force between the Earth and the Moon was calculated, and it was observed that these movements occur within the framework of specific mathematical equations, not randomly. The laws of mass and gravity govern the movements of planets and stars, showing that the order in the universe can be explained by a physical law.

Analyses using differential equations demonstrated that the movements in nature, despite instantaneous changes, adhere to specific rules.

Fractal Geometry and Self-Similarity in Nature

Analyses of fractal structures reveal that many aspects of nature exhibit repeating, regular patterns.

Sierpinski Triangle and Natural Fractals:

Tree branching structure

Snowflake formation

The spread of blood vessels

Riverbeds and coastlines

These structures demonstrate that shapes which may seem random actually follow specific mathematical rules, and even chaotic systems form organized structures.

Infinite Series and Convergence

Infinite series represent mathematical sequences that converge to a specific point. By analyzing the Leibniz series used for Pi calculation and other mathematical series, it has been shown that the complexity of nature can be explained through specific mathematical formulas. Leibniz Series for

Pi Calculations show that certain constants in nature can be derived through defined mathematical processes. The principle of convergence shows that even infinitesimal changes proceed in a structured manner, and natural processes occur within a defined system, not randomly.

Probability Theory and the Fine-Tuning Argument

The extremely low probability of the physical constants of the universe being determined randomly indicates that the spontaneous random creation of the universe is highly improbable. *Physical Constants and Probability Calculations:*

Gravitational constant (G)

Electron charge (e)

Planck constant (h)

Speed of light (c)

Had the values of these constants undergone even tiny changes, the universe would not have reached its current state. Statistical analyses show that the precision of the universe's balance is so fine-tuned that it is highly improbable to have occurred randomly. This finding mathematically supports the idea discussed in *Treatise on Nature* that "cause-effect relationships only gain meaning within a specific order."

Conclusion

In this research, the concept of the necessity of order in the universe, as discussed in Treatise on Nature, has been analyzed using mathematical methods. Tools such as Newtonian mechanics, fractals, infinite series, and probability theory have demonstrated that nature operates according to specific rules, rather than being random.

Newton's Laws of Motion show that the movements in nature occur under certain physical laws. Fractal Geometry has demonstrated that beneath the complexity of natural structures, there is a repeating underlying order. Infinite Series proves that even infinite processes converge to specific results within an orderly system. Probability Calculations show that the physical laws and constants in the universe are not randomly set but are consciously adjusted.

Mathematical analyses demonstrate that the order in nature is not random; Rather, it operates according to specific physical and mathematical laws. Newtonian mechanics proves that physical motions occur within a defined set of rules. Fractals and chaos theory reveal that even beneath complexity, there is a mathematical order. Probability theory indicates that the likelihood of the universe forming randomly is negligible. These findings mathematically support the idea presented in Treatise on Nature, that the order in the universe requires a conscious design.

This is a deeper exploration of the concept of order through quantum mechanics. Also, it is a detailed modeling of natural motions using chaos theory and differential equations. This study investigates the effects of fractal order in nature through advanced simulations. The results support the idea that Newtonian mechanics prove physical motions occur under specific laws, fractal structures show that even within chaos there is a mathematical order, infinite series demonstrate that even seemingly complex processes advance according to rules, and probability calculations demonstrate that the likelihood of the universe being a random occurrence is extremely low. This mathematical evidence reinforces the notion that the universe's order is far from random and that a purposeful design is behind it.

A general evaluation of the findings shows that the order in the universe can be explained through physical laws, fractal geometry, probability theory, and differential equations. Newtonian Mechanics proves that motion progresses within a specific system. Fractal Geometry demonstrates that natural structures are composed of repeating mathematical forms. Infinite Series and Integral Calculations show that mathematical processes can model many natural phenomena. Probability Theory and Statistical Calculations reveal that the likelihood of physical constants in the universe occurring randomly is extremely low. These results support the idea proposed in Treatise on Nature, that "the order in nature does not occur randomly, but within a defined system."

Discussion

The mathematical methods employed in this study have demonstrated that the order in the universe operates not randomly but within a deterministic and systematic framework.

This study explored the order in the universe within the framework of certain mathematical methods, but it has some limitations:

Quantum Mechanics and the Concept of Order: This study primarily focused on Newtonian mechanics. However, quantum mechanics possesses a different order at the microscopic level. Future research should also explore the order at the quantum scale and its relationship to the macro-world.

Chaos Theory and Modeling Nature with Differential Equations: Although many systems in the universe are deterministic, some processes contain chaotic behavior. Chaos theory and nonlinear dynamics might help explain the order behind systems that appear disordered. Future studies could focus on how chaotic systems fit into the overall framework of universal order. Artificial Intelligence and Mathematical Modeling for a Deeper Understanding of Universal Order: In the future, artificial intelligence algorithms could assist in the modeling of the natural order according to specific laws. AI could be employed to simulate and predict how natural systems behave within a mathematical framework, potentially offering new insights into the mathematical structure of the universe. By addressing these points, future research could expand our understanding of the complex and fascinating nature of the universe's order.

References

Aktaş, M. (2015). Pedagojik Yaklaşımlar ve Matematiksel Modeller. *Eğitim Bilimleri Dergisi,* 6(3), 230-245.

Er, Ü., Yücel, D., Aysel, M., Akdag, M. M. & Gül, S. (2025). Matematiksel Görselleştirme ve Pyhton Analizi ile Bediüzzaman'ın Sekizinci Söz Eserinin Kavramlarının İncelenmesi. *Journal of Criminology Sociology and Law,* 6(11), 58-104. DOI:10.52096/jcsl.06.11.04

Er, Ü., Yücel, D., Aysel, M., Akdag, M. M. & Gül, S. (2025b). Matematiksel Modellemeler ve Pyton Analizi İle Bediüzzaman'ın Beşinci Söz Eserinin Görselleştirilmesi ve İncelenmesi. *IJSSAR International Journal of Social Sciences and Academic Research,* 2(3), 10-56. DOI:10.52096/issar.02.03.02 ISSN: 2510-9782

Er, Ü., Yücel, D., Aysel, M., Akdag, M. M. & Gül, S. (2025c). Matematiksel Modellemeler Yoluyla Bediüzzaman'ın Altıncı Söz Risalesinin Kavram İlişkilerinin Görselleştirilmesi ve Analizi. *International Journal of Social Sciences,* 9(37), 160-219. DOI 10.52096/usbd.9.37.09

Er, Ü., Yücel, D., Aysel, M., Akdag, M. M. (2025a). Matematiksel modellemelerle Bediüzzaman'ın dördüncü söz eserindeki kavram ilişkilerinin görselleştirilmesi ve incelenmesi. *Journal of Criminology Sociology and Law,* 5(10), 20-62.

Er, Ü., Yücel, D., Aysel, M., Akdag, M. M. (2025b). Bediüzzaman'ın Üçüncü Söz Eserinde Geçen Kavramlar ve İlişkilerine Matematiksel Modelleme Yaklaşımları . IJSSAR *International Journal of Social Sciences and Academic Research,* 1(2), 33-75. DOI:10.52096/issar.01.02.03

Er, Ü., Yücel, D., Aysel, M., Akdag, M. M. (2025c). Bediüzzman'ın İkinci Söz Eserindeki Kavramların Matematiksel Modelleme Yoluyla Bağıntılarının Analizi. *Journal of Quranic Studies and Modern Science,* 5(10), 39-89. DOI 10.52096/jqsms.5.10.04

Er, Ü., Yücel, D., Gül, S., Uygur, E. O., Yavaş, İ., Aysel, M., Salık, Ş., Aydın, B. ve Akdağ, M. (2022). Tevekkül Kavramına Metodolojik bir Çerçeve Denemesi – I. Journal of Quranic Studies and Modern Science, 2(3), 28-60.

Er, Ü., Yücel, D., Gül, S., Uygur, E. O., Yavaş, İ., Aysel, M., Salık, Ş., Aydın, B. ve Akdağ, M. (2022). Tevekkül Kavramına Metodolojik bir Çerçeve Denemesi – II. *Journal of Quranic Studies and Modern Science,* 2(4), 1-31.

Er, Ü., Yücel, D., Uygur, E. O., Gül, S., Aysel, M. & Aydın, B. (2022). Asr Suresine Matematiksel Bir Yaklaşım. *Journal of Quranic Studies and Modern Science,* 3(5), 1-9.

Gül, S., Yücel, D., Er, Ü., Uygur, E. O., Yavaş, İ., Aysel, M., Salık, Ş., Aydın, B. ve Akdağ, M. (2022). Yaratılmışların Yaradan ve Yaratılanlara Karşı Tevazu Tavırları. *Journal of Criminology Sociology and Law,* 2(3), 30-68. DOI: 10.52096/JCSL.2.3.1

Kalkan, M. (2018). Eğitimde Duygusal Gelişim ve Matematiksel Modelleme. *Eğitim Araştırmaları Dergisi,* 12(4), 102-120.

Nursi, S. B. (2007). *Lem'alar.* Şahdamar Yayınları.