**SCIENCE, REASON AND CONSCIENCE: A PHILOSOPHICAL JOURNEY FROM THE CHAIR TO THE CREATOR – 40**

**“The Dance of Uniqueness with SCIENCE: Secrets in Every Part of Humanity”**

The room was filled with the echoes of the previous conversation. The same question resonated in everyone's mind: in the light of science, was it possible to come one step closer to unraveling the secrets of existence? A silence, shaped by the subtle touch of anticipation, seemed to have stopped the flow of time. Words had faded; now it was time to heed the voice of truth.

A profound anticipation had begun with the Believer's final words. Questions had been posed, and the answers were now entrusted to the cold, yet clear, realities of science. The questions, "It is said that humans and beings are distinct, that even our fingerprints are unique. Is this truly the case?" and "What does this uniqueness signify, and what explanation does it offer for the continuity of creation?" swirled in their minds. Atheist’s curious gaze, Deist’s questioning posture, and Agnostic’s contemplative demeanor all awaited the outcome of this scientific confrontation.

This time, all eyes were on the figure of SCIENCE, the bearer of scientific truths awaiting elucidation. Adjusting their glasses, SCIENCE began to speak in a calm yet powerful voice:

**SCIENCE:** The question you've posed certainly touches upon a valid point. Yes, you humans are indeed unique, and we can scientifically prove this uniqueness. But first, if you will, let us begin with physical uniqueness.

Deist interjected, their tone slightly skeptical yet curious:

**Deist:** That's precisely where I have some reservations. Doesn't the claim that humans are entirely unique strike you as a bit of an exaggeration? How can absolute uniqueness be possible among billions of individuals?

SCIENCE nodded, a knowing expression acknowledging Deist's doubt, then offered a slight smile and replied in a reassuring voice:

**SCIENCE:** Actually, it's not an exaggeration. However, I understand your point. It's natural for it to seem like an 'exaggeration' because the scale is incredibly vast, and the concept itself is quite remarkable. However, scientific data indicates that this uniqueness is not an exaggeration at all; on the contrary, it is substantiated by concrete evidence. Here is some of the evidence science offers, akin to nature's own fingerprints:

Those in the room focused their attention more intently. The silence mingled with the quiet echoes of a curiosity deepened by thought. SCIENCE began to elaborate, speaking distinctly:

**SCIENCE:** You humans are truly unique in your physical and biological makeup. In every individual, there exists diverse scientific evidence that proves this uniqueness. Some of these include:

Atheist interjected with a faint, skeptical smile:

**Atheist:** What about genetics, then? Aren't even identical twins practically a perfect match?

SCIENCE offered a gentle shake of the head in disagreement:

**SCIENCE:** That's precisely where a small but critical detail lies. As revealed by the Human Genome Project,[1] even identical twins possess subtle yet distinct differences due to epigenetic factors. No individual's DNA sequence is entirely identical to another's. Defining characteristics, such as fingerprints, are formed even before birth and are unique to each person.

Atheist nodded thoughtfully at this. Their familiarity with genetic science was evident in their expression. Deist interjected eagerly:

**Deist:** We always hear that fingerprints are unique, but what truly is the scientific basis for this?

SCIENCE replied with a smile:

**SCIENCE:** According to research by scientists such as Jain, Prabhakar, and Hong, fingerprints are formed during fetal development through a combination of factors, including the fetus's movements, contact with the uterine wall, and the pressure of the amniotic fluid.[2] This is why each of you possesses unique fingerprints.

From a corner of the room, Agnostic chimed in, their curiosity piqued:

**Agnostic:** That's very impressive. But is this uniqueness confined only to fingerprints?

SCIENCE continued, nodding enthusiastically:

**SCIENCE:** Absolutely not! For instance, the structure of your eyes is also unique. Retinal and iris patterns are unique to each individual and are therefore widely used in biometric identification technologies. The work of Daugman has scientifically established the uniqueness of iris patterns.[3]

Deist listened with rapt attention. Their skeptical expression seemed to be gradually giving way to a sense of awe. Those in the room exchanged astonished glances. SCIENCE continued without missing a beat:

**SCIENCE:** Your facial structure is also unique. Features such as bone structure, muscle tone, skin texture, the distance between the eyes, and the shape of the nose distinguish each of you from one another. Studies by Wilkinson and Evans on facial recognition technologies have demonstrated this very clearly.[4]

Deist, now visibly excited, asked:

**Deist:** And what about our voices?

SCIENCE replied with an affirmative nod:

**SCIENCE:** Your voice, too, is unique to you. The length, shape, and tension of the vocal cords vary from individual to individual. Research by Titze indicates that these differences can be utilized in biometric identification systems.[5]

SCIENCE took a brief pause, then added:

**SCIENCE:** Furthermore, the structure of your tongue and teeth is also unique. The taste buds and the surface topography of the tongue differ in every individual.[6] Similarly, your teeth—in their size, shape, and arrangement—are unique to each person. The American Dental Association notes that teeth are used for identification purposes in forensic odontology.[7]

Deist and Agnostic, still processing this new information with astonishment, continued to listen intently to SCIENCE:

**SCIENCE:** Moreover, even your body odor and sweat characteristics are unique. According to research by Penn and Potts, your genetic makeup and the bacterial flora on your skin contribute to these differences.[8] Dogs possess an incredibly developed ability to distinguish these unique scents.

Agnostic asked, still amazed:

**Agnostic:** And what about our hands and feet?

SCIENCE affirmed with a smile and a nod:

**SCIENCE:** The lines on your hands and feet are also entirely unique to you. The work of Ashbaugh clearly demonstrates that these lines are used in individual identification.[9]

The room had now transformed into a hub of excited discussion and discovery. Agnostic, taking a step closer, asked:

**Agnostic:** So, is it only our physical attributes that make us unique? Don't we possess other forms of uniqueness?

SCIENCE replied, their expression growing more profound:

**SCIENCE:** Most certainly! Take, for instance, your brain... The folds and convolutions in the structure of your brain differ in every individual. The work of Nobel laureate neuroscientist Eric Kandel clearly demonstrates that these structures are unique, forming the basis for your individual differences in perception and thought.[10]

The Believer gently touched a book resting on the table and began to speak in a calm voice:

Believer: Are not these unique qualities you speak of, in fact, a scientific indication that creation IS AN ONGOING PROCESS, CONSTANTLY RENEWING ITSELF?

SCIENCE, after a brief silence, replied with a knowing smile:

**SCIENCE:** Precisely. Each new human, each new entity, points towards a continuously active and conscious intervention. Science is a tool for understanding this uniqueness; however, comprehending the power that brings this uniqueness into existence opens the door to philosophical and theological inquiries.

A meaningful silence enveloped the room after this statement. Everyone was trying to absorb what they had heard. This was not merely a scientific discovery, but also a journey that questioned the profound meanings of life and existence. The discussion was far from over; on the contrary, a door had been opened to even deeper explorations.

When SCIENCE concluded its presentation, an impressive silence settled in the room. The detailed and multi-layered tableau of uniqueness presented by SCIENCE had profoundly impacted everyone. The realization that each of the billions of humans was, on so many levels, an unrepeatable miracle had altered the atmosphere in the room. Agnostic had been taking notes for some time. They slowly placed their pen on the table and asked with keen interest:

**Agnostic:** These physical proofs are truly striking and awe-inspiring. You've presented compelling data regarding humanity's biological singularity. But what lies beyond physical characteristics? Can we speak of a similar uniqueness in terms of spiritual, mental, or character traits? What does science say on this matter?

This question seemed poised to take the discussion into a new dimension. All eyes turned once more to SCIENCE, but this time, the answer to the question would likely be sought not solely in biology, but perhaps at the crossroads of psychology, neuroscience, and even philosophy. This journey we have embarked upon in the light of science is now progressing towards discovering human uniqueness not only on a physical level, but perhaps in much deeper layers as well...

**Until we meet in the next chapter, God willing...**

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**BİLİMSEL KAYNAKLAR:**


[1] National Human Genome Research Institute. (2024). The human genome project. https://www.genome.gov/human-genome-project
The Human Genome Project was an international research project aimed at mapping human DNA. This project demonstrated that variations in human DNA form the basis for differences between individuals. Even in identical twins, minor differences in DNA sequence and epigenetic changes have been found.
[2] Jain, A. K., Prabhakar, S., & Hong, L. (2004). *Handbook of fingerprint recognition*. Springer.
[3] Daugman, J. (2004). How iris recognition works. *IEEE Transactions on Circuits and Systems for Video Technology, 14*(1), 21-30.
[4] Wilkinson, C., & Evans, D. (2001). *Facial recognition: A literature review*. Home Office Research, Development and Statistics Directorate.
[5] Titze, I. R. (2000). *Principles of voice production*. National Center for Voice and Speech.
[6] **Tongue and Taste Buds:**

- **Number and distribution of taste buds:** Humans have an average of 2,000 to 10,000 taste buds on their tongue. This number varies depending on factors such as genetics, age, gender, and health status. The distribution of taste buds on the tongue also differs from person to person.
    - Source: Chandrashekar, J., Hoon, M. A., Ryba, N. J., & Zuker, C. S. (2006). The receptors and cells for mammalian taste. *Nature, 444*(7117), 288-294.
- **Tongue surface:** The surface of the tongue is covered with small protrusions called papillae. The shape, size, and distribution of these papillae also vary from person to person.
    - Source: Spielman, A. I. (2000). Taste and smell. In E. R. Kandel, J. H. Schwartz, & T. M. Jessell (Eds.), *Principles of neural science* (4th ed., pp. 625-645). McGraw-Hill.

**Tongue Uniqueness and Identification:**

- **Tongue print:** Some research suggests that the surface characteristics of the tongue (distribution, shape, and size of papillae) differ from person to person, forming a structure that could be called a "tongue print." However, research in this area is still limited, and it is not yet clear whether the tongue print can be used as a reliable biometric identification method like fingerprints.
    - Source: Liu, H., Huang, X., & Sun, Z. (2013). Tongue image analysis for human identification. *Pattern Recognition, 46*(11), 2978-2990.
- **Tongue in forensic science:** The tongue can be used for identification in some forensic cases, such as bite mark analysis. However, the tongue itself is rarely used as a standalone identification tool.
    - Source: Avon, S. L. (2004). Forensic odontology: An overview. *Journal of the Canadian Dental Association, 70*(7), 455-458.

[7] American Dental Association. (2024). Dental health topics.

[8] Penn, D., & Potts, W. K. (1998). Chemical signals and parasite-mediated sexual selection. *Trends in Ecology & Evolution, 13*(10), 391-396.

[9] Ashbaugh, D. R. (1999). *Quantitative-qualitative friction ridge analysis: An introduction to basic and advanced ridgeology*. CRC Press.

[10] Kandel, E. R., Schwartz, J. H., Jessell, T. M., Siegelbaum, S. A., & Hudspeth, A. J. (2013). *Principles of neural science* (5th ed.). McGraw-Hill.