# Science and the Limits of Knowledge

# SCIENCE AND THE LIMITS OF KNOWLEDGE

An Excerpt from "Dialogue with a Nonbeliever (About Science and the Limits of Knowledge, the Big Bang and Evolution, Ancient Christianity and Modern Heterodoxy)," second edition

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second edition

December, 2016

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#### **Foreword**

Is there a God? People come to know the fact that there is a God in multiple ways.

Some, during wartime, clearly hear a voice telling them to move away from the place where they had found shelter and, a few moments after they leave, a bomb destroys that shelter. Such a story we hear from a person known for his efforts to find Noah's Ark.

Others first come to believe that there is a devil, and only after that do they understand that there must also be a God. There were cases of people who got involved in the paranormal, trying to communicate with the "dead" and with other "well meaning" spirits. Later, some of these people realized they were actually talking with the devil.

Others say that the best proof that there is a God is that He hears us when we cry out to Him. A Romanian Orthodox Christian believer gave this answer to a fellow countryman who was asking what proof we have that there is a God.

Others notice that every time they say or do something bad—something that their conscience tells them is bad—something bad immediately happens to them, too. After many such "coincidences," they come to admit the fact that there is "Someone" up there Who is watching every step of their lives.

But the most common and most obvious way to know that there is a God is to look around us, at everything surrounding us, and realize that there has to be a Creator who created us, the animals, the plants, this planet and the entire universe. To counter this obvious reasoning, modern science has come up with the theories of the Big Bang and evolution. The Big Bang theory claims that the universe began to exist about 14 billion years ago, following a big explosion that led to the formation of stars and planets, all with no divine intervention. Then, the evolution theory claims that inanimate matter, somehow, again with no divine intervention, organized itself into the first living organism. This organism, the evolutionists say, started to reproduce and to evolve, and, during billions of years, and also without any divine intervention, eventually turned into the living organisms we see today: people, animals and plants.

We read in the Bible that Thomas did not believe that Christ had risen from the dead until he saw Him with his own eyes. And then Christ told him:

«Thomas, because you have seen Me, you have believed. Blessed are those who have not seen and yet have believed.»¹

I understand that these words could also mean blessed are those who believed in God without seeing many arguments, or blessed are those who obey all the rules of the Church without trying to find out their purpose, or blessed are those who are fully confident that God had very good reasons for all the rules He has left for us in His Church, even though we don't know those reasons.

Dear reader, if you want to be one of those blessed ones, then you can put this book aside and forget it was ever written. I was not one of those blessed ones; my faith was weak and it needed arguments, it needed answers. And God helped me find those arguments and answers. I am neither a theologian nor a priest, so I have no authority to teach other people. Therefore, in this book I try not to be a teacher for anyone, but only to offer other people, too, the arguments and the answers that God helped me find, with the hope that they will also be useful to them as they were useful to me.

This book is the result of more than ten years of researching the arguments for and against the theories of the Big Bang and

<sup>&</sup>lt;sup>1</sup> John 20:29.

evolution, a study that also implied the search for the right religion and the true Church of Christ. And because that research required countless contradictory discussions with evolutionists, this book is structured as a dialogue, too. The characters Daniel, Michael and John are fictitious. None of them are meant to be an exact replica of the author or of one of the evolutionists mentioned before. Most stories related in the book are based on true events, but the true identities of those involved remain hidden.

This edition is not a real translation. I wrote the original in both Romanian and English, so this edition is actually an original, too. To express this in other words, it was translated by the author himself.

The reader is warned that some of the footnotes refer to articles and books written by evolutionist or atheist scientists. Those references are only listed for those who want to know in detail science's account of the origin of life and the universe. Most of the footnotes with creationist references refer to articles and books written by Protestant scientists, and some of those works contain, in addition to the scientific arguments, theological opinions, too. The reader is warned that many of those theological opinions are considered to be wrong, heretical, by the Eastern Orthodox Church. Therefore, those works can only be useful for their scientific contribution to the refuting of the theories of evolution and the Big Bang, and in no way for the theological opinions that can be found in some of them.

The author February 18th, 2016

#### 1. The Fools and the Wise Ones

On Sunday morning, Daniel woke up late, like he used to do every Sunday. He got out of bed, washed himself, skipped breakfast and, just before noon, he left home to meet his friend, John.

Daniel and John were both the same age: 27. They had been to college together, had graduated in the same year and had both found well-paying jobs, though in different companies. Neither of them was married, but John was planning to get married in a few months. Daniel had broken up with his girlfriend a few weeks ago, so for now, marriage was, for him, an event way too distant in time. Sometimes the two men saw each other on Sundays, to have lunch together.

On his way to the restaurant, Daniel took a shortcut because he was a little bit late. He passed by a church and slowed down for a second. The service had just finished and the people were going home. Most of them seemed to be in their 50s, but among them Daniel also saw a few young ones, here and there.

'Losers,' he said to himself. 'I can't understand why they are wasting their time like this... It's Sunday, you can sleep longer or do a lot of other useful things. Why would you waste your time in church?'

John had arrived and was waiting for Daniel near the entrance of the restaurant. They sat down at a table and started to browse through the menu. They had seen each other last week, so they didn't have too many new issues to discuss. After enumerating the latest movies and songs recently released, there followed a short debate about the newest computer technologies.

Then a short silence set in, during which the waiter brought their food.

After thinking for a few seconds, Daniel mentioned the people he had seen at the church:

"On my way here, I passed by a church, and I saw some people who had stayed there a few hours. When I passed by, I think the service had just finished and they were going home."

"OK, so?"

"And I don't understand why those people are wasting their time there... Some of them, very few, were young, about our age."

"I think I understand what you want to say. To you, it seems foolish to spend two or three hours in church on Sunday mornings. To you, those people seem to be idiots."

"Exactly."

"It's obvious," John said, "that if indeed there is no God, those people are the greatest losers on the face of the earth, because they're wasting their lives for nothing. You know, besides two or three hours Sunday morning, there are a lot of other things that their religion is asking of them, and which affect their lives profoundly."

"Yes, that's true."

"But it is equally obvious that, however, if there is a God, then maybe the greatest losers are us and the other people like us, who never go to church."

"Maybe... But how do you know that there is a God?" asked Daniel.

"I don't know."

"Then why go to church? Besides, there is more than one religion. And every one of them claims to be the true one..."

"Because you just mentioned that there are multiple religions, here's an extreme example. Do you remember the attacks of September 11, 2001?"

"Of course, everybody remembers."

"Well," John said, "I don't know whether there is a God or not, but even two nonbelievers like me and like you have to admit, although it may be very hard for them, that if the religious beliefs of those terrorists are true, in the afterlife they will be in heaven accompanied by 70 virgins each, and we are going to be in hell."

"You're joking."

"Not at all, I'm very serious. But there are three *ifs. If* there is a God. *If* Islam is the true religion. And *if* their interpretation of the Quran is the correct one. You have to admit that *if* these three conditions are met, the 19 terrorists were some of the wisest men in the world, while the atheists and all those of other religions are just some losers."

"I really, really hope that it isn't so," Daniel said.

"I hope that, too."

"So we both hope. But for me, hope is not enough. I would like to know for sure. So how do we *know* whether it is or it isn't so?"

John didn't say anything. Daniel went on:

"You say you're a nonbeliever, but sometimes you seem to be on religion's side."

"I'm not a believer," answered John. "But I'm not a complete nonbeliever, either. I simply don't want to think about religion now; I have more important things to do. I'll think about God and religion when I'm old. So let's say I'm a temporary nonbeliever."

Daniel pondered for a few seconds, then said, smiling:

"You're not going to like this, but I have to tell it to you: Even a temporary nonbeliever like you has to admit, although it may be very hard for him, that if he dies before getting old, he won't have time to think about God and religion anymore and, if there is an afterlife, he will be counted with the nonbelievers."

"Yes, I have to think about this possibility, too, but not right now," John said, also smiling.

"And now let's get back to my problem. You want to wait till old age to figure out whether there is a God or not. But I don't want to wait that long. Maybe there is no God, but I want to know for sure, so I can live my life without worrying that after death I'll be asked why I didn't go to church, to the mosque or to the synagogue. Or to the Buddhist temple."

John laughed.

"And how exactly did you think to proceed in order to find out for sure?"

"I thought," Daniel said, "about going to see a priest and ask him what exactly makes him think there is a God. Maybe this way I'll see that there are no serious arguments."

"I want to know what the priest will answer, too."

#### 2. Is There a God? I Want to Know!

Daniel postponed seeing the priest for a few weeks. He didn't know any priests, and he also had no religious friends. Besides, it seemed to him that his question was a little bit weird and he won't be taken seriously. Eventually, one Sunday around noon, he stopped in front of the church he had noticed before. This time it was a little bit later in the day and almost everyone was gone. He got closer to the door, trying to see whether anyone was still inside. He noticed a young man, maybe a few years older than him, who was also getting ready to leave.

"Hi," Daniel said.

"Hi," the young man replied.

"I'm looking for the priest."

"He just left, actually everybody has left. I'm locking the church and I'm leaving, too. Can I help you with anything? I have the priest's phone number if you want to talk to him."

"No, no, I wanted to ask him something face to face."

"Then, if you have a personal question for him, you'll have to wait till next Sunday. But if it's a question related to the church or to the religious services schedule, you can ask me. I'm Michael and I take care of the church when the priest is not here. Do you want to schedule a religious service, a marriage or a baptism?"

"My name is Daniel. I have a problem and I was wondering if he could help me. I wanted to ask him... I wanted to ask him a rather unusual question... I wanted to ask him how does he know that there is a God?"

A short silence followed.

"It's a really important problem for me," Daniel added quickly, thinking that he was not being taken seriously.

Michael looked at him for a few seconds. Daniel was silent.

"How does the priest *know* that there is a God?" Michael asked eventually.

"Yes, or how do you know? Or how does any believer know that there is a God?"

'What makes you guys dedicate so much of your lives to this God, how can you be so sure that He exists?' Daniel added to himself.

"Or how do I *know*... I'm afraid you're asking the wrong question. What kind of *know* do you have in mind? You want to know whether God exists the same way you know, for example, what your height is, what the speed of light is or what the distance to the moon is?"

"Exactly, how can you prove scientifically that God exists, what tangible, observable proof is there?" Daniel asked, already thinking that Michael had no solid arguments.

"Some time ago I asked myself a similar question," Michael said.

"And what answer did you find?"

"Look, I am neither a priest, nor a scientist. However, if you want to find out my opinion, if you want to know how it is possible to argue scientifically for the existence of God and if you have time to listen to me, let's sit down on this bench in front of the church and set some things straight. Like every modern man, you seem to put great trust in science."

"Of course, science has advanced so much during the past few decades. Science has offered us electronic devices, space travel, modern medicine, laser surgery and so many other things."

"Yes," Michael said, "science has advanced greatly during the past hundred years. And this advancement gives the modern man the illusion that he can do anything, that he can measure anything, that he can investigate anything and that he can find all the answers through science... Well, I have to disappoint you a little. If you have the time and the patience to listen to me, I'll try to prove to you that, despite all this scientific progress, our power of investigating the reality we live in is, however, very limited. I mean we're not, even by far, capable of determining, or measuring all the things we'd like to know. Actually, the most important things are completely beyond our capabilities of knowing and investigating scientifically. And I'll explain it to you step by step." "I'm listening," Daniel said.

### 3. Limits of Knowledge

"Some basic things first," Michael said. "To each one of us, it seems that he or she knows very many things, from very many areas. About our day to day life; about the apartment or house we live in; about our friends and acquaintances; about the city we live in; about our country; about the history of our country; about the history of the world; about the human body; about animals and plants; about the planet we live on; about our solar system; about our galaxy; about the universe; about religion. We add new knowledge almost every day. However, only a very small part of this knowledge we have was acquired by direct observation and experiment, that is, empirically. The vast majority of our knowledge was acquired from other sources, mainly from other persons, from books and from TV."

"So far, I agree," Daniel said. Michael went on:

<sup>&</sup>lt;sup>1</sup> Empirical: capable of being verified or disproved by observation or experiment. (Merriam-Webster)

From a scientific point of view, empirical knowledge is knowledge acquired only through the senses and by experiments performed in a laboratory.

The principle of empirical verifiability is the principle that claims that only statements that are empirically verifiable or logically necessary are cognitively meaningful. Obviously, this is an error. The principle of empirical verifiability is not logically necessary, nor can it be empirically verified, therefore it is declared null by its own rules.

"A part of the knowledge we have is related only to ourselves, for example, we know the address we live at, we know our height, and so on. Another part is about the history of mankind, for example, we all know from history that Hannibal<sup>2</sup> crossed the Alps with a rather large army. A part of this information is important to us, for example, our monthly income. Another part is not that important, for example, unless you like history, I don't think you care too much about Hannibal's crossing of the Alps."

"I agree, usually Hannibal is the last thing on my mind," Daniel smiled.

"And now a very important observation: Anything we observe or experience ourselves, we accept it immediately as true, because we have seen it ourselves, with our own eyes. We don't need arguments to make us believe what we see in front of us. For example, you know for sure how many rooms there are in the apartment or house you live in, because you have seen them yourself, with your own eyes, countless times. You need no arguments for this: you've seen them yourself. Now you know for sure that there is a green bench in front of this church, because you're sitting on it right now. You need no arguments to come to believe that this bench exists."

"Obviously, I see it with my own eyes."

Michael thought for a few seconds, then went on:

"But any other information we receive, from any other source, is not immediately accepted as certainly true, because it is not something we have seen with our own eyes. There is *something* inside us that filters this information, and that *something* either accepts it or rejects it. Many times the information is supported by arguments. These arguments, too, are filtered by that inner *something* and are either accepted or rejected. In short, everything, absolutely everything that is not in front of our eyes goes through this filtration process."

<sup>&</sup>lt;sup>2</sup> Hannibal Barca (247 - 183 BC), Punic Carthaginian general, considered one of the greatest military commanders in history. He led a couple of campaigns against ancient Rome. The year of his death is uncertain (181 - 183 BC).

"Are you calling it 'something inside us' because you don't really know what that something is?" Daniel asked.

"I strongly believe that that *something* is the human soul or, more precisely, the predisposition of the human soul to believe or not to believe something, or even the desire to believe or not to believe something. I also believe that man's soul, depending on its free will, is either helped by the grace of God, or influenced by the lies of the devil. But because now you might not believe in the existence of the soul, because now you might believe that that *something* is the psyche or our brain, I'll keep calling it that *something*. It is also called subjectivity, bias or even prejudice, and it has a reputation for being a bad thing. Have you ever been told that you were being subjective?"

"Countless times," Daniel admitted.

"However, I'm going to show to you that that *something* can be both good and bad, and that it is present everywhere, in all aspects of our lives."

"How about some examples?"

"Soon. One more observation and we'll move on to examples. I was telling you that the inner something filters every piece of information, every argument that is offered to us. But it doesn't do this randomly, it has some reasons, some internal causes; and depending on those inner reasons, it accepts or rejects the information and the arguments that it encounters. I will give you many examples in which you'll clearly see that something working differently for different people. You'll see situations in which the same information and the same arguments are offered to several people, and each one of them accepts or rejects them in a different way. It is very important that we stop at this, that is, at noticing the filtration process and its result, and in no case should we try to guess the reasons for which someone accepts or rejects a certain piece of information or argument. In no case should we label those who filter the information differently than us as being stupid, idiots, retarded, mean or otherwise. Later, I'll explain to you why. And now let's move on to examples, so you'll understand what I was trying to say."

"I can't wait," Daniel said, "you have made me curious. But does this have anything to do with the arguments for the existence of God?"

"Of course. But before analyzing those arguments, we have to briefly analyze our capacity of knowing the world we're living in. I mean, we have to realize which are the limits of knowledge."

#### 3.1. Limits in Knowing the Present

#### 3.1.1. Objects and Phenomena in Front of Us

Michael went into the church and returned a few moments later with a book.

"Let's start with the present," he said, "because here we have the greatest capabilities to investigate scientifically the world we're living in. In this present we can determine and measure very many things. Look, for example, at the building in front of us: If we want to know how wide it is, we can very easily measure it with a measuring tape. I don't think you'll ever hear people arguing about the size of that building, because it can be measured right away. In the same way, we can measure the distance to the moon, the speed of sound, the speed of light, the chemical properties of various substances, and so on. And we can do this because we have them at our disposal all the time, in front of our eyes. The building, the light, the sound, the chemical substances, and all the rest are immediately accessible to anyone who wants to study them. You won't hear anyone arguing over these subjects, because they can be measured anytime by anyone who has the necessary devices."

"Of course," Daniel said, "this is called scientific research."

# 3.1.2. Objects and Phenomena that We Ourselves Don't Have Access to

Michael went on:

"But let us look at something else now. In our city there is a big bank in whose vault the citizens can keep valuable objects. Can you measure how thick the vault's door is?"

"No, I can't," Daniel said. "But if I worked at that bank, I could."

"Aha! Here we have to make an important observation: Although the thickness of the vault's door can be measured very easily, it cannot be measured by me or by you, but only by very few of the bank's employees. If the bank publishes an ad in a local newspaper and claims that the vault's door is 30 centimeters<sup>3</sup> thick, then we have our first example of information acquired empirically by others, and which is offered to us in order to believe it. We can see the ad in the newspaper and, if it seems interesting to us and we memorize it, the thickness of the vault's door will be added to the multitude of information we already have. But, unlike the width of the building mentioned before, this time we have no possibility to verify with our own eyes whether the information is true or not."

"I understand," Daniel said, "some things we simply don't have access to ourselves, but other persons do have access, and we hope that those persons will tell us the truth."

#### 3.1.3. Shape of the Earth

"Exactly. Now we move on to something a little bit more difficult," Michael went on. "Can you see with your eyes the shape of the earth?"

"Not really... Only if you're an astronaut."

"That's true. For someone on the ground, observing the shape of the planet is not something as simple and obvious like

 $<sup>^{3}</sup>$  30 centimeters (cm) = 11.81 inches (11' 13/16").

measuring the width of a building or the thickness of a door. However, even if you're not an astronaut, you can still see certain things. First, if you're on the seashore with a set of binoculars and you're looking at a ship that's moving away from the shore, you'll see that the ship seems to sink below the horizon line. The bottom part, although larger, disappears before the top part. And second, during a lunar eclipse, you can see that the shadow of the earth on the surface of the moon is always round."

"Yes," Daniel said, "this is how people realized for the first time that the earth was round."

"And now we will see, also for the first time, that inner *something* I told you about in action, leading different people to different conclusions. The shape of the planet cannot be seen from the ground in the same way that you can see, for example, the shape of an apple you're holding in your hand. In other words, the earth is not entirely in front of our own eyes. What can be seen from the seashore is not the shape of the planet, only a ship that seems to be sinking. The conclusion that the earth is round is only a deduction, an interpretation of the observation that the ship seems to be sinking. Although this reasoning seems very obvious to us, *something* inside some people, however, simply rejects it. Those people still believe that the earth is flat. There are extremely few of them, granted, but they exist. They claim that the ship that seems to be sinking is just an optical phenomenon."

"How is something like this possible? What about the shadow of the earth during lunar eclipses?"

"They say the shadow could look round because the moon is also round, and because the earth is shaped like a disk."

"This is absurd," Daniel said... "I've never met such a person."

"I've only met one. You see, it's possible that I was wrong just before, when I spoke about 'those' who believe the earth is round, maybe I should have spoken in the singular, maybe that person is the only one in the world who still believes something like that."

"And how do they, or how does he, explain the thousands of photographs and movie clips from space, in which it can be seen clearly that the planet looks like a sphere?"

"They're all fake, obviously. Can you imagine how many thousands or maybe tens of thousands of people, of different nationalities and religions, would have to be involved in such a conspiracy, to hide from the rest of the world the fact that the earth is flat?"

"Yes, exactly."

"I tried to explain to him that he was wrong, but I couldn't convince him. His inner predisposition was way too strong for my arguments."

"You know," Daniel said, "I think the problem could be solved rather easily. If there are more such persons, they could collect money and build a small rocket, with a camera and a transmitter attached to it, and they could launch it into space. The rocket would send them photos of the earth from an altitude of a few thousand kilometers<sup>4</sup> and the problem would be clarified for them, too."

"I'm afraid you're underestimating the power of one's predisposition to reject even a very solid argument, when his or her inner *something* is very well motivated. You see, if there is a global conspiracy that fakes the photos sent by astronauts from space, then certainly those conspirators could also intercept the photos sent back by their rocket, and could replace them with some fake ones, in which the earth looks like a sphere."

"This is downright ridiculous! Why would anyone believe something like that? Does the shape of the earth have any religious significance? Is this a matter of faith?"

"As far as I understand, the shape of the earth has no religious significance, as Saint Basil the Great also says. 5 Some would go even further and say that turning an insignificant matter into a matter of faith is a heresy, a rather serious sin. However, I believe that God looks at the heart of the man, at his inner motives

 $<sup>^4</sup>$  1,000 km = 622.28 miles.

<sup>&</sup>lt;sup>5</sup> St. Basil the Great, Hexaemeron, Homily IX.

that make him believe or not believe something, as it is written in the Bible:"

«But the Lord said to Samuel, "Have no regard for his outward appearance, nor for the maturity of his stature, because I have refused him. For man does not see as God sees; for man looks at the outward appearance, but the Lord sees into the heart." »<sup>6</sup>

#### Michael went on:

"Therefore, my opinion is that if one has a strong and simple faith, and he doesn't understand the scientific arguments, and he believes that the earth is flat, then this can do much good to his soul, and it can get him closer to God, even though his belief is wrong and has no religious significance. And at the same time I believe that if one is being motivated by hatred, by self-love, by the desire to always be right or by other bad motives, then such a belief would do harm to his soul even if the earth were indeed flat. But only God knows the inner motives of each one of us; that's why we have to refrain from judging anyone. Instead, we are more than encouraged to judge ourselves and our own inner motives."

"You said hatred could be a reason. Hatred against whom?"

"Hatred against the modern world, against modern science, against the scientists, and so on. Hatred is a very dangerous feeling, no matter against whom it is directed. When you hate someone you tend to not believe anything he has to say, or, even worse, to believe exactly the opposite, which can be very dangerous, even if that someone were the devil himself. Imagine that someone tells you nine truths, in order to gain your trust, and then a lie, to deceive you. But you think you know what he's up to, and you suppose, incorrectly, that he's telling you lies and only lies, and so you take the nine truths as lies as well."

"I understand," Daniel said. "This is dangerous, indeed."

<sup>&</sup>lt;sup>6</sup>1 Kingdoms 16:7 (NKJV: 1 Samuel 16:7).

"The desire to always be right may also be dangerous, even if we are truly right, as we are warned by Saint John of the Ladder, a Christian monk who lived in the 6th and 7th centuries:"

He whose will and desire in conversation is to establish his own opinion, even though what he says is true, should recognize that he is sick with the devil's disease.<sup>8</sup>

"Interesting idea, so as you understand it, from a religious point of view, what matters the most are the inner motives, which are known to God alone. OK, it was interesting to see where hatred can lead. We can move on now."

#### 3.1.4. Rotation of the Earth

"Now let's look at something even more difficult to determine, namely the rotation of the earth. Unlike the shape of the earth, which can, however, be observed with our own eyes if we get into space, there is no way to observe the rotation of the earth; it can only be deduced. It cannot be observed because there is no absolute reference system at rest, against which we can relate. From the surface of the earth it seems that we are at rest and the entire universe is rotating around us. From the surface of the moon it seems the same, that the moon is at rest and the universe is rotating around it."

"Yes," Daniel said, "I know the problem from physics; we don't have an absolute reference system."

"Exactly. Because of this, the rotation of the planet can only be deduced, not observed, like you observe the rotation of a car's wheel. And the experiments are rather simple, namely Foucault's

<sup>&</sup>lt;sup>7</sup> He is named "of the Ladder" because of his book titled *The Ladder of Divine Ascent* (also known as *The Ladder of Paradise*, or briefly *The Ladder*). He is also known as St. John Scholasticus, St. John Sinaites or St. John Climacus.

<sup>&</sup>lt;sup>8</sup> St. John Climacus (of the Ladder), *The Ladder of Divine Ascent*, translated by Archimandrite Lazarus Moore, Harper & Brothers, 1959, Step 4:48.

pendulum and the gyroscope. Everybody can set up something like that at home and can observe that the pendulum's plane of swing is not fixed, it rotates with an angular velocity that depends on the geographical latitude."<sup>9</sup>

"I remember this experiment from physics," Daniel said, "it was the first serious proof that the earth was rotating."

"A more difficult experiment can be done with the gyroscope. If you hold a gyroscope in your hand, you notice that no matter how you move and rotate the handle, the direction of the disk's rotation axis remains unchanged as long as the disk keeps spinning. And if you try to change the direction of that axis, you notice immediately that it resists. However, if the rotation axis is turned toward the sun or some stars, it rotates very slowly, following the star that it points to."

"Obviously. Actually, that axis is fixed, it is the earth that is rotating."

"OK, and now we'll see again that inner *something* in action. Although to us, the two experiments I just described look very convincing, some people, called geocentrists, continue to believe that the earth is fixed and that the rest of the universe is rotating around it. There are very few of them, granted, but still a few more than those who believe that the earth is flat."

"I'm very curious to know," Daniel said, "how do they explain the very precise rotations of the pendulum and the gyroscope? How can a mindless object like the gyroscope know which way and at what speed the sun is moving?"

"They say there is a universal force that rotates the universe around the earth, and it is that force that also rotates the pendulum and the gyroscope."

"To me this seems absurd," Daniel said. "Why isn't it rotating other objects, too? For example, if I hang a sheet of paper on the ceiling lamp, why isn't that universal force rotating it? If you spent a few thousand euros on a powerful telescope, you could

 $<sup>^9</sup>$  The angular velocity of the pendulum's plane is given by the formula  $360^\circ$  x sin(latitude) / day. At  $45^\circ$  latitude, the velocity is  $254.56^\circ$  / day.

see with your eyes the geostationary satellites as light dots that stay motionless in the sky. All stars move from East to West, but they remain all night in their fixed position. Why aren't they falling down, if the earth is fixed? Or why aren't they moved by that force that is rotating the universe?"

"This proves how powerful that inner *something* is," Michael said; "it can annihilate almost any argument."

"Yes, maybe..."

"Although I don't know for sure, I still want to tell you that it is possible that the earth was once fixed and the universe was rotating around it. If it has ever been so, it was only in the primordial world, before the sin of Adam and Eve, which resulted in the corruption of the entire creation and the change of the laws of the material world. We'll talk about this later, if you want to listen. Nowadays, it would only be possible for the universe to rotate around the earth if the laws of physics outside our planet were completely different. But in this case, the engineers who are launching satellites and other space vehicles and are tracking their trajectories for many years would have certainly noticed this by now."

"Maybe there's a conspiracy in there, too," Daniel said smiling ironically.

"And if there were a conspiracy, I wonder how many thousands or tens of thousands of people, from so many countries and so many religions, would have to be involved in that conspiracy? Another alternative for geocentrism would be for the laws of physics to be the same all over the universe, but for God to continuously perform miracles in order to keep the celestial bodies on unnatural orbits around the earth. This is not impossible; God is all-powerful and He can do anything, but I don't really believe that He's doing this. Although I'm a believer and I believe in miracles, I don't believe this scenario because I see that usually matter behaves according to some natural laws pre-established by God, the law of gravity being one of them. God intervenes and performs a miracle only in some situations, and with a certain purpose. For example, when an apple's stem dries up, the apple

falls to the ground because of the law of gravity. There is no need for God to send an angel to take the apple and put it down."

"Does the motion or the non-motion of the earth have any religious significance?" Daniel asked.

"I don't think it has any religious significance. As for those who believe that it has such significance, I have the same opinion as about those who believe the earth is flat. If their inner motives are good, such a belief, kept despite the fact that the entire world makes fun of them, can do much good to their souls, even though it is wrong. But if their inner motives are bad, such a belief would do harm to their souls even if the earth were indeed standing still. Of course, we must not and we cannot judge other people's motives, but it is everyone's duty to analyze his own motives and to get rid of the bad ones."

"I understand," Daniel said. "So you think that, from a religious point of view, in such cases it doesn't matter how correct the opinion is, but the inner motives that determine that inner *something* to incline one way or another."

"Yes, this is my opinion. This is how I understand it, that God looks at the heart of the man, not at what we see on the outside."

After a few moments of silence, Michael went on:

"Some time ago I met someone, a very religious person, who was totally against the system."

"The 'system' being who?" Daniel asked.

"By the 'system' he meant modern government, modern science and some secret societies that are suspected by some people to be ruling the world from behind the scenes. Well, yes, from a religious standpoint, this system is indeed diabolical: It makes abortion legal and presents it as something normal; it teaches the theories of Big Bang and evolution in schools and on TV as they were the only possible explanations, and so on. If you watch TV on almost any channel, usually in less than half an hour you'll see that intimate relations between unmarried persons, a mortal sin from a religious point of view, are accepted as if they were something perfectly normal. This is why I say that the 'system' is indeed diabolical. But that person had come to say that maybe

smoking is good, otherwise the system wouldn't be trying to persuade us to give it up."

"Is that so?" Daniel asked, astonished. "Even smokers know that smoking is bad for their health."

"Yes, he really said this. I think it is very dangerous to totally and indiscriminately oppose a theory, a person, a system or even the devil himself. Yes, even if the system were the devil himself, Christian tradition teaches us to ignore anything coming from him. We should not believe what he's saying, but also we should not come to believe the opposite either. We should simply ignore him completely. Although in such a case we might be tempted to say that the man is motivated by hatred against the system, I think that we should refrain from guessing what his reasons are. Let's try not to judge his inner state, the Lord has told us to judge no one:"

«Judge not, that you be not judged. For with what judgment you judge, you will be judged; and with the measure you use, it will be measured back to you.»<sup>10</sup>

"And we certainly cannot make a right judgment anyway," Michael concluded.

"This is a useful lesson," Daniel said. "When I was a teenager, sometimes I acted exactly contrary to how my parents were advising me, because I was being rebellious. I was not doing the things that I wished to do, but exactly the opposite of the advice I was getting from them. I was even doing things I didn't like, just because they were contrary to my parents' advice."

"I think now you realize that it was just your inner *something* in action."

"Yes, probably."

#### 3.1.5. Vaccines

"OK, let's move on now to something even more controversial, namely vaccines."

<sup>&</sup>lt;sup>10</sup> Matthew 7:1-2.

"Yes," Daniel said, "here we'll probably find even more people who dispute the generally accepted idea that vaccines are good and useful. I too know a few persons who are against vaccination."

"Yes, I told you that we are going to take it step by step. Here we see another kind of a limit of knowledge. Although the human body and the chemical substances are permanently in front of us, it is impossible to determine or to exactly measure a vaccine's effect on a human being. And this is not only because of the complexity of the human body, but also because the research is limited by ethical reasons: it is usually wrong and immoral to perform experiments on people. Modern medicine assures us that vaccines are safe, that they are effective, and urges us to get vaccinated. But the number of people who don't accept this is significantly larger than the number of people who believe that the earth is flat or that the universe is rotating around us."

"What complicates things is that there also are some doctors and scientists who claim that vaccines are not good."

"The effects of a vaccine on the human body cannot be measured as easily as you measure, for example, the width of a building. It is by far not as easy and obvious as some claim, since some side effects can only be detected after a couple of days or even months. Because of this, each person uses, sometimes unconsciously, his inner something in order to accept or to reject the arguments of modern medicine. If you study the problem, you will notice that this is actually a battle between arguments. The advocates of vaccines enumerate their benefits, especially preventing and eradicating diseases. Usually, advocates don't seem to know cases of children who suffered serious side effects following vaccination. And when such cases are brought to their attention, they say that it's not the vaccine to blame, that the parents of those children are medically illiterate and they're talking nonsense. The opponents of vaccines enumerate the adverse effects and the fact that in some countries, cases of certain diseases decreased without vaccination about as much as they did in the countries where the population was vaccinated. Usually, opponents don't seem to know cases of children who got sick with some serious diseases because they hadn't been vaccinated. And when such cases are brought to their attention, some of them say that these are lies, that the parents of those children are 'people of the system,' paid to lie, and so on. Sometimes the vaccine opponents talk like the diseases that these vaccines are trying to prevent didn't even exist."

"And yet, most of us are vaccinated, and we're still alive and rather healthy. So where does the idea that they're so harmful come from?"

"Read for example the leaflet of the Hepatitis B vaccine. You'll see there listed a lot of contraindications<sup>11</sup> and possible side effects, some of them very serious. In our country<sup>12</sup>, this vaccine is administered to babies in their first day of life. The obvious question is this: Does anyone test the baby to see whether he is vulnerable to any of the conditions listed in the vaccine's leaflet? Usually the answer is no."

"I'm trying to figure out whose side you are on," Daniel said.

"I'm not on either side; I'm only saying that this is an issue that is very difficult to clarify, a limit of knowledge. For example, one of the main accusations against vaccines is that they cause allergies. The pro-vaccine side keeps saying that there is no clear scientific proof that vaccines cause allergies. The anti-vaccine side claims that there is also no clear scientific proof that vaccines have nothing to do with allergies. Both sides should admit that, if there is indeed no proof, then this only means we don't know. That's all, we simply don't know. Lack of proof for a statement doesn't mean that the statement is false, it only means that we don't know whether it is true or false. In November 2001, in the US city of Seattle, scientists debated the hypothesis according to which vaccines cause disorders of the immune system, especially

<sup>&</sup>lt;sup>11</sup> Contraindication: something (such as a symptom or condition) that is a medical reason for not doing or using something (such as a treatment, procedure, or activity). (Merriam-Webster)

<sup>12</sup> Romania.

allergies and autoimmune diseases.<sup>13</sup> The conclusion was that there is no clear proof for or against this accusation.<sup>14</sup> In other words, we cannot know for sure."

"This is the 21st century, how is it possible that we can't know for sure? Haven't so many studies been conducted about this subject?"

"Yes, there have, but the results are not clear, and sometimes they are even contradictory. For example, a certain group of children from Sweden who received fewer vaccines also were found to have fewer allergies. For the moment, it seems there is a connection between vaccines and allergies. But if we look further, we see that those children were also administered fewer antibiotics and that they consumed a larger percentage of organic food. Therefore, the connection is not that clear anymore. It is possible that that group had fewer allergies because of the other two reasons, too, not necessarily because of the lack of vaccines. Science simply cannot determine the true cause or causes. It is beyond science's capabilities and it should admit it."

"Indeed," Daniel said, "when you have two or three possible known causes, there is no way to know which one is the real culprit. Then you think that there could also be other causes, which are unknown at this moment..."

"Here's another study, mentioned very often by the advocates of vaccination. In East Germany, before reunification, vaccination was mandatory. However, allergies were rather rare. After the 1990 reunification, the vaccine advocates say that vaccination rates went down a little, but the number of allergies started to climb. Obviously, as in the case of the Swedish children, all the details need to be clarified: Have new substances been introduced

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<sup>&</sup>lt;sup>13</sup> Autoimmune disease: disorder of the immune system in which it attacks the host organism, because the immune system mistakes the organism for external pathogens. An example of an autoimmune disease is psoriasis.

<sup>14</sup> http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=10306

in the vaccines after 1990? Have the procedures for diagnosing and recording allergies changed after 1990? And so on."

"Yes, I begin to understand now why it is so hard to find the truth."

"Recently a new theory emerged, according to which the main culprit for the increase in the number of allergies is excessive hygiene. In other words, too much hygiene is harmful to the immune system, and causes it to start to behave abnormally. Dobviously, this theory has not been clearly proven, either. I'm not trying to jump to the defense of one side or the other, I'm only trying to show you that science has reached some limits that are very hard for it to overcome, although it doesn't usually admit this."

"But are vaccines effective in preventing diseases, or not?"

"I think it is clear enough that they are indeed effective, that they prevent the infection in most cases. But it is equally clear that there are also countless adverse effects, some very serious, some less serious. The truth is that their effects vary from person to person, and we should humbly admit that we simply cannot know exactly all the details related to this subject. I know cases of children who were left partially paralyzed following the administration of a vaccine. What is truly sad is that in such cases, the doctors treat the parents like they are idiots, tell them that they don't understand medicine and that actually, the child was left paralyzed for other reasons. What a coincidence, exactly when the vaccine was injected! But I also know the case of a family that, following the advice of the vaccine opponents, did not vaccinate their child against tuberculosis, and the child got sick with this disease at the age of a couple of months and this brought him to the brink of death. Also, very sad, when I tell this story to the anti-vaccine people sometimes I get back replies like 'Are you sure it is so? Maybe they are paid to lie."

"This really is outrageous," Daniel complained.

"You see, that's why I'm not on either side. I'm disappointed by both sides. But let's get back to what we are analyzing, that is,

<sup>15</sup> https://en.wikipedia.org/wiki/Hygiene\_hypothesis

the inner *something* and the impossibility of knowing some things with certainty. During the talk about vaccines I gave you several examples of that *something* in action. I think you were able to detect them, too."

"Yes, I think so," Daniel said. Although I'm not a doctor, I, too, know that vaccines are a little bit controversial. If everything were clear and safe, why would there be an official website financed by the American government for monitoring the negative effects of vaccines?<sup>16</sup> I, too, know that each human body is unique and it reacts differently to different substances. Some may end up with a gastric hemorrhage because of a common aspirin; others can get into anaphylactic shock<sup>17</sup> because of a dose of penicillin. So it is obvious that the substances in the vaccines will cause different reactions in different people, reactions that are impossible to anticipate before the administration of the vaccine. So, I observe that vaccine advocates don't accept the accounts of those who complain of serious secondary reactions after vaccination, although there's no way for them to prove that the vaccine is not the culprit. Something inside them makes them believe that other causes are to blame. Similarly, the vaccine opponents blame vaccines without being able to prove in any way that indeed they are the culprit. Something inside them assures them that the vaccines are to blame. Here I agree with you: When you have a serious medical situation a few hours or days after vaccination, it is impossible to argue scientifically, clearly and unequivocally, that the vaccine is or is not guilty. It is simply beyond the capabilities of modern medicine. Some will believe that the vaccine is the cause, and others that it isn't, as their inner something tells them."

<sup>16</sup> https://vaers.hhs.gov/

VAERS: Vaccine Adverse Event Reporting System, a program of two US governmental agencies, CDC (Centers for Disease Control and Prevention) and FDA (Food and Drug Administration).

<sup>&</sup>lt;sup>17</sup> Anaphylactic shock (or anaphylaxis): an often severe and sometimes fatal systemic reaction in a susceptible individual upon exposure to a specific antigen (as wasp venom or penicillin) after previous sensitization that is characterized especially by respiratory symptoms, fainting, itching, and hives. (Merriam-Webster)

Michael looked gladly at Daniel and said:

"I'm glad that you've come to this conclusion."

"And I think I've also detected something about you, too," Daniel said.

"What exactly?" Michael asked.

"Well, you seemed pretty indignant that some vaccine opponents treated with distrust the parents whose unvaccinated child got sick, suggesting that maybe they are paid to lie. But how well do you know that family? Do you know for sure that they had not been paid to lie? Is it not that *something* inside you that makes you believe they are honest, even though you have no concrete evidence about this?"

"You're making progress," Michael smiled. "Yes, obviously, I have no concrete evidence, but indeed, *something* inside me makes me almost sure that they are honest. You see, as I was telling you, that *something* is present in almost all aspects of our lives. I'm glad you're starting to see it, too."

"Yes, and I hope that eventually I'll also see what this discussion has to do with the evidence about the existence of God. You know, this is actually what I'm interested in the most."

"We're getting there, soon. For now I want to add just two things, one for each belligerent side. First, it is possible that some vaccine advocates are aware of the side effects, but they treat everything like some mere numbers."

"What do you mean?"

"For example, they have to vaccinate 1,000,000 people. Of these, 1,880 show serious side effects after vaccination, and 20 more die. For them this is a success rate of 99.8%, which they may consider to be good. The second problem is that some of the scientists who oppose vaccinations may be doing this for evolutionary reasons. I mean, some of them may be of the opinion that humans who don't have the strength to naturally defeat the disease should be left to die, otherwise we're not letting natural selection do its job right."

"Although I'm still not a believer, it seems very wrong to me to see things that way. However, from an evolutionary standpoint, they are right, only the strongest and most resilient people should survive and reproduce..."

"This is just one of the reasons why I don't believe in the theory of evolution, but we're getting there, soon."

"How is the problem of vaccines seen from a religious point of view?"

"From a religious point of view, nothing ever happens by chance alone. Everything that happens in this world, no matter how insignificant it seems to us, happens either because God directly causes it, or because God allows it to happen:"

«Are not two sparrows sold for a copper coin? And not one of them falls to the ground apart from your Father's will. But the very hairs of your head are all numbered. Do not fear therefore; you are of more value than many sparrows.»<sup>18</sup>

"However," Michael went on, "people have to do their part in order to prevent bad things from happening. For example, when I get behind the wheel, I have to pay attention to the road and the traffic, and not close my eyes and say that God will turn the steering wheel for me. But there is no clear delimitation between our part and God's part; each person sees his part differently, as his inner something dictates to him. Therefore, in my opinion, from a religious point of view there are two approaches for the problem of vaccines. First: One can refuse the vaccines and pray to God to protect him from diseases. Second: One can accept the vaccines and pray to God to protect him from the side effects. So this is up to each person's faith and to how convinced he is that vaccines are harmful or not. Some people say that it is our duty to do everything possible to avoid the disease, and therefore we have to get vaccinated. As they see it, if you don't get vaccinated, it is like you yourself are causing your disease, and maybe even your death. Others say exactly the opposite. Opinions are divided."

<sup>&</sup>lt;sup>18</sup> Matthew 10:29-31.

"So there is no safe choice that can certainly keep you from any negative consequences. From a religious point of view, you say, you have to trust that God will protect you from either the disease, or the side effects."

"Maybe some people understand it this way. But I think that putting your trust in God doesn't mean to believe that you won't get sick or that you won't suffer any side effects, but to believe that God takes care primarily of your soul and, even if you do get sick or suffer a side effect, the disease or the side effect is allowed by God for the salvation of the soul."

"You mean to accept the disease or the side effect as something sent by God?"

"Exactly. Bottom line, I think this is about each person's faith. Some people see the vaccine as an insurance policy, and the risk of a side effect like the premium paid for that policy. I remember, however, that Saint Paisios of Mount Athos, a 20th century Greek monk, was telling someone that there is no greater insurance than the trust in God.<sup>19</sup> I don't think he was talking about vaccines, but the idea is the same. And I perfectly agree with him; if I had his faith, I wouldn't insure my car and my home, and I would probably never get vaccinated. But because my faith is way weaker than Saint Paisios' faith, I have optional insurance for both my car and my home. And if in my city very many cases of a serious infectious disease were reported, and the vaccine didn't have a bad reputation, I probably would get vaccinated and I would pray to be kept from side effects. Otherwise, I would probably refuse the vaccine and I would pray to not get sick. Anyway, this is just my opinion and I don't advise anyone to do as I do. Everyone decides for himself. Someone with a stronger faith than mine probably will proceed otherwise, will never get optional insurance policies and will reject the vaccine regardless of the risk."

"They say that soon vaccination will be mandatory."

<sup>&</sup>lt;sup>19</sup> Elder Paisios of Mount Athos, *Spiritual Counsels*, vol. 2 (*Spiritual Awakening*), Holy Monastery "Evangelist John the Theologian," Souroti, Thessaloniki, Greece, 2008, p. 304.

"I really don't agree with this. Although I'm trying to be neutral and I don't advise anyone to either accept or reject the vaccines, I am, however, against making them mandatory. You can't force someone to get a vaccine; it is each person's choice. The government doesn't own our bodies."

#### 3.1.6. Christmas Bonuses

Michael kept quiet for a moment, looked at his watch, then went on:

"Now let us analyze a hypothetical example. Let's say that every year before Christmas, all the employees of the company you work for are expecting a bonus, the Christmas bonus. But in a certain year, the management of the company said that the company had little revenue, so there will be no bonus."

"I've heard of such cases from friends working in other companies."

"What do you think?" Michael asked. "Did everybody react the same way? I mean, did they all believe the official explanation, or did they all refuse to believe it?"

"No, of course not. Some believed that indeed that year there hadn't been enough profit. Others believed that the bosses were lying. Some were very indignant. Others were resigned and tranquil."

"But, save the top management, how many of them really knew what the financial situation of the company was? Did any of them have access to the real numbers, to the proceeds and expenses?"

"Probably not," Daniel said.

"So none of them knew exactly what the truth was," Michael said.

"I see what you're trying to say," Daniel said, "although all of them were in the same boat, that is, they were having only a very vague idea about how the company they were working for was doing, they arrived at very different conclusions. Yes, it is clear, *something* inside them made them either accept or reject the

story offered by the management. Or partially accept it. Or partially reject it."

"Although I presented the problem to you in a simplified manner, you understood that actually the situation is not either white or black, but that there could also be many shades of gray. Our inner predisposition can make us accept something, reject something, partially accept something, enthusiastically accept something, partially reject something, categorically reject something, be undecided and try to clarify things, or even decide that we're not at all interested in that subject and that we can forget about it."

## 3.1.7. Everyday Life

Daniel nodded and Michael went on:

"As I was telling you, that *something* is to be found in almost all aspects of our lives, because it is very often that we have to accept or to reject an argument, or to interpret something and draw a conclusion. Look, for example, at your workplace there is a small argument between two coworkers, let's say between Andrew and George, an argument witnessed by all the others. Do you think everybody will interpret the incident the same way? Some will take Andrew's side, others will take George's side, while still others will reproach both of them that they're noisy and are not letting the others work. And some will say that they're both right, that they're expressing differently the same thing, and that there's nothing to argue about."

"Yes, I've seen situations like this."

"Well, this is another example in which that inner *something* of ours reacts differently even when several persons have seen and have heard exactly the same thing, with their own eyes and with their own ears. Now let's try to find some real examples from your life."

"How exactly?" Daniel asked.

"Try to remember, have you ever been wrongly accused? Have you ever been reproached for doing something that you actually didn't do?"

"Certainly, it has happened many times. Obviously, there was no way for those who accused me to know the truth with certainty, but *something* inside them preferred to believe that I was guilty."

"Let's also look for a positive example. I mean an example in which you did something bad on purpose, but somebody else preferred to believe that you didn't actually do it on purpose."

"Something like this doesn't happen too often, but yes, I remember such an occurrence, too. Once I lied to a friend, and the truth was soon discovered. But my friend did not accuse me of lying to him. He simply thought that I told him things I sincerely believed to be true, although they actually weren't. *Something* inside him preferred to believe that I didn't lie to him on purpose. I remember I felt very guilty..."

"I'm glad you also found an example in which somebody preferred a positive explanation," Michael said.

"Such things happen all the time. For example, you set your phone to silent mode and you forget about it, you miss a few calls, you notice it in the evening, when it is too late to call them back, and some of those who called you draw the conclusion that you did not want to talk to them. Yes, some people are very suspicious; they immediately draw the conclusion that they were lied to. *Something* inside them has a predisposition to this, has something against other people."

"It's possible," Michael said, "but let's not judge people's inner reasons; we'll never know them for sure."

"Meanwhile, some people are very naive, I mean they believe you even when you tell them a lie. I understand what you're trying to say. Neither the naive ones, nor the suspicious ones know the truth, but *something* inside them makes them incline one way or another. And both of them can be wrong; the naive one may believe a lie, and the suspicious one may reject the truth."

"If we look carefully, we'll see that we're confronted very often with situations like this, therefore we have to pay attention to ourselves, to the way we're filtering the information and the arguments that we encounter in day to day life. If in front of this parking lot there were a hundred people and each one of them were asked how many cars are in it, all without exception would answer immediately that there are four cars. And that's because the cars in the parking lot are accessible, right in front of their own eyes, and counting them is extremely easy, and the result of the counting is in no way filtered by anything inside them. But any other more complex thing passes through this filtration process, and the results, as you can see, differ from person to person. And sometimes they differ a lot."

"Yes," Daniel admitted, "I agree."

"God told us not to judge anyone, but instead we have to judge ourselves, we have to pay a lot of attention to that inner something of ours and to its inclinations. Let's think about a person we like and trust, and we'll notice that if we hear something good about him, we might be somewhat predisposed to believe that thing without much proof, and if we hear something bad, we might be somewhat predisposed to not believe that thing, even though we're offered some arguments, or it may seem an insignificant thing to us. Then, though it is a sin to hate someone, let's suppose for a moment that there is a person we don't like and whom we don't trust. Let's think about that hypothetical person, and we'll notice that if we hear something good about him, we might be somewhat predisposed to not believe that thing, even though we're offered some arguments, or it may seem an insignificant thing to us, and if we hear something bad, we might be somewhat predisposed to believe that thing without much proof. And, obviously, we can be wrong in all four cases mentioned just before. Therefore, I believe that we have to always be reserved and leave any judgment to God."

"I imagine that an ill-intentioned person can take advantage of these inner predispositions of ours. For example, he can spread negative false rumors about someone."

"He can do something even worse; for example, he can spread positive false rumors. I mean he can say that a certain person, public or not, did a certain good thing, a thing which that person didn't actually do. Maybe this person did other good things, but not that one. But his sympathizers might believe and even spread those rumors, and when they prove to be false, their

trust in that person might be seriously affected, because they might think the other good things they have heard about him are false, too. And also the other way around, one might spread negative false rumors about himself, and then he will also clearly prove them to be untrue. Thus, his critics might believe that other negative things they have heard about him are false, too."

"Those would really be some very bad deeds," Daniel said. "Real cases of psychological manipulation."

"Yes, that's true. However, I told you these things not in order to discourage you and to make you not trust anybody or anything anymore, but instead for you to be aware of our limitations. I'll give you two more real life examples told by Saint Paisios of Mount Athos, whom I told you about before. Once he was visited by a child who didn't know him. I want to see Father Paisios,' the child said, not knowing that he was talking to him. 'He went to buy cigarettes,' Father Paisios joked. 'It looks like he must have gone to help someone,'20 the child replied."<sup>21</sup>

"So nice of him; he didn't even think that Father Paisios was the one who needed the cigarettes."

"Obviously, Saint Paisios didn't smoke. And here is the second example. Saint Paisios had just convinced someone to quit smoking, and that person had left the pack of cigarettes in the church, where the discussion had taken place. And the next person who went in saw the pack and drew the conclusion that Saint Paisios used to smoke inside the church."<sup>22</sup>

"Yes, a typical example of a wrong conclusion."

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<sup>&</sup>lt;sup>20</sup> In the Romanian translation: "It looks like he went to buy them for someone."

<sup>&</sup>lt;sup>21</sup> Elder Paisios of Mount Athos, *Spiritual Counsels*, vol. 3 (*Spiritual Struggle*), Holy Monastery "Evangelist John the Theologian," Souroti, Thessaloniki, Greece, 2010, pp. 29-31.

<sup>&</sup>lt;sup>22</sup> Ibid., pp. 70-73.

#### 3.1.8. Complex Systems

"Now I'll give you another example of things whose knowledge is sometimes uncertain for us, despite the fact that they are things that we ourselves are making. And here I'm talking about the complex mechanical and electronic systems. Although they are created by humans, the very people who made them cannot fully understand the way they function. I'll mention only two examples, namely large airplanes and computer software. Both are extremely complex, are tested by hundreds or even thousands of people before being put on the market, and still, many times, design defects are discovered in them even years after being put to use. Their complexity makes certain defects become visible only in certain conditions. I've seen cases of passenger planes with design or manufacturing defects that caused them to crash several years after being put to use. Here's an example that includes both categories of products: in 2007, six F22 fighter jets, recently put to use, experienced total failure of their onboard computers when they crossed the International Date Line, you know, that imaginary line that runs from North to South through the middle of the Pacific Ocean, the crossing of which implies changing the date.<sup>23</sup> The problem was so serious that the pilots were unable to restart the computers; without computers, electronic navigation was no longer possible, and all six jets had to return to their base following the refueling aircraft that were accompanying them."

"How did such a thing happen to all six of them?" Daniel asked.

"The engineers who had written the program for those computers had not considered all possible scenarios. And when the

<sup>&</sup>lt;sup>23</sup> Crossing that line implies adjusting the calendar date by one day forward for those traveling from East to West, and by one day backward for those traveling from West to East.

http://www.defenseindustrydaily.com/f22-squadron-shot-down-by-the-international-date-line-03087/

http://www.dailytech.com/Lockheeds+F22+Raptor+Gets+Zapped+by+International+Date+Line/article6225.htm

planes crossed that line, all of them encountered the same problems because the same program was running on all six onboard computers. The planes could have flown for decades without anyone ever noticing this problem, if they hadn't needed to cross the International Date Line."

"I understand very well what you're trying to say," Daniel confirmed, "I work with computers, too, and I'm perfectly aware of these problems. This is most frustrating when a program doesn't work well on my computer, but it works fine on other computers. In such cases it is very difficult to find and fix the real cause."

"That's true," Michael confirmed. "You probably know that most, or maybe all, computer software licenses clearly state that the companies that produced them assume no responsibility if those products malfunction and cause losses of any kind. And this is so because no matter how well they are tested, nobody, absolutely nobody, can guarantee that the software contains no more errors or security holes that have not yet been discovered. This is due to the unimaginable complexity of these products. In other words, it is another limit of knowledge. I'm not going to give you examples about how our inner something reacts when confronted by the uncertainties caused by these complex systems, because you'll probably only encounter them if you work for a company that produces computer software or if you are part of a team that investigates the crash of an airplane. I mentioned them only for us to see how limited is our capability of comprehending even things that are in front of our eyes and which are the products of our work. For comparison, think about the game of chess and the game of tic-tac-toe. The tic-tac-toe game is predictable; if both players are careful, it will always end in a draw. But the game of chess seems to us extremely complex, with billions of billions of ways in which it can unfold, far from being predictable. But it seems to be so only because our minds are incapable of comprehending all possible variants, otherwise chess would be as predictable as the tic-tac-toe game."

"Obviously, and this is why in recent years engineers have built computers capable of defeating famous chess players. Those computers can simply consider more variants than their human opponent. The computer is not smarter than the man, it just can calculate a lot more."

## 3.2. Limits in Knowing the Future

"OK," Michael said, "so we've seen how difficult it is sometimes to know the present and how often we use, usually without even realizing it, that *something* inside us that filters so much of the information that we receive. Let us move on now and talk briefly about the limits in knowing the future. I say 'briefly,' because there isn't too much to say here. The future is incredibly difficult to predict, almost impossible. Just think about the weather forecast: how many times does it prove to be incorrect? Why do most contracts signed by people, institutions or companies include a cause named *force majeure*<sup>24</sup>, which frees them from contractual obligations in the case of uncommon events? Because in the course of history, people have noticed that their plans for the future can be thwarted by totally unpredictable events."

"However," Daniel said, "certain things can be predicted, for example I can accurately predict the time the sun will rise tomorrow."

Michael smiled and replied:

"And I can predict the time the sun will set tomorrow. We can do this because the sunrise and the sunset are events that repeat daily at exact times. But let's see something else, can you predict whether the global economy will completely collapse in the near future, or not?"

"Hmm..." Daniel said. "This is a little harder. Especially because I don't know much about the global economy."

"Let me give you a few details. There is a category of people, not too many, who claim that the world economy will collapse

<sup>&</sup>lt;sup>24</sup> https://en.wikipedia.org/wiki/Force\_majeure

soon, totally and irremediably. If you listen to their arguments, everything seems to make sense: People are irresponsibly consuming the resources of the planet, especially oil and underground fresh water, and these resources are going to be exhausted soon, causing a global crisis that will only end with the death, by starvation probably, of the majority of the population of the world."

"What an apocalyptical scenario," Daniel said. "But I think I've heard such predictions before. Are they real?"

"It is obvious to anyone that if you have a bag of potatoes, and you keep taking one or two at a time from it, and you never put others back, eventually the bag will become empty. So it is as clear as it can be that, if things keep going on this way, eventually the world economy will completely collapse. Those resources are already showing signs of depletion in many places in the world."

"Aha, so those are not really exaggerations. Do you think there will be such an economic collapse? And if so, when?"

"Even if it will indeed happen this way, to me it seems impossible to predict when exactly this collapse will take place. It is possible to happen even this year, but it is also possible it will happen only after another 30 years. The mechanisms of an economic collapse are way too complex to be predicted. Another possible scenario is that humankind will cease to consume so many resources, either willingly, or forced by circumstances. Or maybe it will succeed to replace in time the oil with alternative energies, for example with solar and wind energy. In these cases, maybe there will be no major economic collapses during the next 500 years."

"Yes, solar and wind energy are the future," Daniel said. Michael went on:

"There is also a camp opposed to these apocalyptic guys, a camp that claims there will be no economic collapse and that everything will get increasingly better. Both camps that debate this subject are starting from the same information. The amount of oil produced and consumed annually, the amount of oil estimated

to be left underground, the amount of fresh water extracted annually from the natural underground reservoirs<sup>25</sup>, the amount of water added annually by rain and rivers to those reservoirs, the exponential growth of sovereign public debts, all this is public information, accessible to everyone. Both camps have access to it and use it as a starting point for their reasoning. And yet they arrive at completely different conclusions."

"Something inside them sees things in totally different ways," Daniel noticed.

"Yes, and in both camps there are people extremely well motivated interiorly. Some of them are firmly convinced that the economy will crash this year. Others are firmly convinced that it will not crash during their lifetime. But we must not judge their reasons."

"But I don't understand why the issue is so complicated and unclear, that they arrive at diametrically opposed conclusions. Those numbers, the amounts of oil, for example, aren't they clear enough? To me it looks like a simple mathematical calculation."

"It's not quite like that. The problem is not necessarily that the oil will run out, because it will not run out completely. The problem is that the oil becomes more and more expensive to extract, because the cheap oil has already been extracted long ago.

"But they say there are still enormous underground oil reserves," Daniel said.

"This statement is both true and misleading at the same time. The amount of oil left in the ground is irrelevant. What actually matters is the speed and price at which it can be extracted. Here's a comparison: There's gold in the water of seas and oceans, lots of gold. Enormous amounts of gold. Actually, according to the most recent estimates, the amount of gold in the seawater is 120 times greater than the entire amount of gold extracted during the entire history of humanity. Yet still, that gold is so expensive to

<sup>&</sup>lt;sup>25</sup> Also known as aquifers.

<sup>&</sup>lt;sup>26</sup> http://oceanservice.noaa.gov/facts/gold.html http://www.numbersleuth.org/worlds-gold/ http://www.bbc.com/news/magazine-21969100

extract, that at this moment no company extracts it on a large scale."

"I think I'm beginning to understand the problem..."

"Yes, the same thing goes for oil, and for any other resource, finite or renewable. Shale oil, for example, is significantly more expensive than oil extracted in Saudi Arabia. And oil produced from kerogen<sup>27</sup> is even more expensive. There are statistics that show that during the last ten years, the oil industry has spent almost three times more money than during the preceding ten years, and this for extracting about the same amount of oil. This is, I think, a clear proof that cheap oil is almost gone. Other studies say that for extracting a barrel of oil today, we're spending five times more than we were spending 15 years ago. Another clear proof that we're running out of cheap oil."<sup>28</sup>

"But the price of oil has gone down in recent months."

"Prices can also go down due to destruction of demand<sup>29</sup>, not only because of an increase in supply. It may seem paradoxical, but a decrease in supply, which initially causes an increase in prices, can cause in the long term the destruction of demand and, inevitably, a fall in prices."

"What about fresh water?"

"We're having water problems, too. In many places in the world, the huge natural underground reservoirs are in decline.

The amount of gold extracted so far is not known with certainty, but it is estimated at 150 - 170 thousand metric tons (116 - 133 times less than the gold in oceans). The largest estimates put it at 2.4 million metric tons, but even this way, the amount of gold in the oceans (20 million metric tons) would still be eight times greater.

<sup>&</sup>lt;sup>27</sup> Also known as oil shale (not to be confused with shale oil).

<sup>&</sup>lt;sup>28</sup> http://energypolicy.columbia.edu/events-calendar/global-oil-market-forecasting-main-approaches-key-drivers

http://energypolicy.columbia.edu/sites/default/files/energy/Kopits%20-%20Oil%20and%20Economic%20Growth%20%28SIPA%2C%202014%29%20-%20Presentation%20Version%5B1%5D.pdf

<sup>&</sup>lt;sup>29</sup> https://en.wikipedia.org/wiki/Demand\_destruction

From one of the largest reservoirs in North America, Ogallala<sup>30</sup>, the amount of water extracted annually is, in many places, six times larger than the amount added back by rain and rivers. You don't have to be a mathematician to realize that that reservoir will eventually run dry. And at such an extraction rate, it takes, for example, 60 years for the rain and rivers to undo ten years of consumption. The situation of other reservoirs is even worse, because water from rain and rivers doesn't make its way to them, and if these reservoirs run dry, they remain that way. In the American state of California, there are several regions where ground level is sinking a few centimeters<sup>31</sup> or even dozens of centimeters each year, because underground water is being extracted for irrigation. Then, these reservoirs are not uniform. I mean when they run dry, they don't run dry everywhere at the same time. There are places where the water is already gone. The town of Happy in the American state of Texas is a well-known example. It used to be a thriving agricultural community, fueled by the Ogallala reservoir. But the underground water was exhausted a few years ago, and the area around the town of Happy is turning back into an arid, semi-desert one."

"I understand," Daniel said, "this is not a simple mathematic calculation; you can't just divide two numbers and figure out exactly the date the oil will run out or the date the water table will be gone."

"Apart from that, the population of the world is starting to become aware that it is not good to consume so many resources. Meanwhile, solar and wind energy are gaining ground, although there still is a long way till it will be possible to completely replace oil. And even if oil is replaced, this would only fix half of the problem, because only about half of the oil is used to produce

<sup>&</sup>lt;sup>30</sup> Having an area of about 450,000 km<sup>2</sup> (174,000 square miles), Ogallala is almost twice the size of Romania.

https://en.wikipedia.org/wiki/Ogallala\_Aquifer

<sup>&</sup>lt;sup>31</sup> 1 centimeter (1 cm)  $\approx 3/8$  inches.

 $<sup>1 \</sup>text{ inch} = 2.54 \text{ cm}.$ 

fuels; the other half is used to make plastics and many other substances that the modern society is using."

"It seems there are good arguments on both sides and, indeed, it is hard to predict whether the economy will soon collapse or not."

"Another example," Michael said, "of cases in which different people filter the same arguments in totally different ways. I think it is clear now that predicting the future is almost impossible for us. An obvious limit of knowledge, in my opinion. Again, I'm not on either side, I only tried to show to you how difficult it is to predict the future."

"Yes," Daniel approved. "How is this problem seen from a religious point of view?"

"The future is in the hands of God, Who is all-powerful and Who can do anything. If we, the people, sinned less, and if it was beneficial for our souls, then maybe God would give us enough rain so that all our water problems would be solved."

"What about the oil, or the alternatives to oil?"

"Mankind has lived for thousands of years without oil."

# 3.3. Limits in Knowing the Past

### 3.3.1. Cars in the Parking Lot

Michael pondered for a few moments, then said:

"Now let's move on and let's talk about knowing the past, something almost as difficult as knowing the future. You see, if I were to ask you how many cars are there in this parking lot, you would immediately reply that there are four of them. But what if I asked you how many cars were there yesterday, at the same time?"

"I see the problem," Daniel said, "I wonder how could one answer this question?"

"The only way you could try to find the answer would be to look around and see whether there are any video surveillance cameras."

"Aha," Daniel mumbled, upset that he hadn't thought of this solution.

"But even if you do find some cameras, and even if their administrators give you access to the recording from this time yesterday, I wonder how could you know whether the recording is authentic or not?"

"Usually these recordings show the date and time in a corner."

"And you think that one cannot make a false recording, that shows a different date or time than the real one? You said you're working with computers. Look, I have a digital camera that can place in the corner of the picture the date and time. But the camera doesn't know what the real date and time are, so if I tell it the year is 2011, the pictures it takes will show the year 2011, despite the fact that the real year is 2015."

"Yes, indeed, it is very easy to make a recording today that shows yesterday's date, or tomorrow's date. But why would someone do something like this?"

"Usually nobody has reasons to forge video recordings from a parking lot. But what if, at some point, detectives are investigating a serious crime and they want to see whether on a certain day, at a certain time, a certain car was in the parking lot or not? For someone, this could be a very serious reason to fake the recording, if he or she has access to it."

"I begin to understand what you're trying to say; it is extremely hard to know for sure how certain events from the past unfolded."

"Yes," Michael said, "and even more, the information we have about the past is not verifiable. The predictions about the future are verifiable: If someone predicts an economic crisis in two years, well, in two years we'll see with our own eyes whether he was right or not. But if someone makes a statement about the past, regardless of how many good arguments he offers, it is impossible for us to go back in time and see with our own eyes

whether it was indeed so or not. So even if you do get a video recording of the parking lot showing in a corner yesterday's date, you cannot go back in time and see with your own eyes whether the recording is authentic or not. *Something* inside you will have to either believe, or disbelieve the words of the person or persons or the institution that administers the surveillance camera."

"Yes," Daniel approved, "in the end you still have to trust someone, to take someone's word for it."

"And here's also a logical problem related to the investigation of the past. Let's say tens of thousands of people, equipped as ancient soldiers were equipped, with antique weapons, horses and elephants, successfully cross the Alps dozens of times, back and forth. Is this scientific proof of the fact that Hannibal and his army did the same 2,200 years ago? Obviously not; this is only a proof that they *could have* done the same, not that they actually did it. Of course, nobody doubts the crossing of the Alps by the Carthaginian army, all I want to say is that events from the past cannot be proven scientifically, they can only be believed, or not, based on the accounts of those who lived in those times."

### 3.3.2. The Trip to the Moon

After a short silence, Michael said:

"Daniel, are you ready now to analyze together a very famous and controversial example?"

"Which one?"

"The moon landing."

"Oh, yes, this one certainly is a controversial issue. I myself know many people who think that everything was a setup."

"Many things have been said about this. Documentary films were produced that try to prove everything was a farce. Other documentary films were also produced that try to prove everything was real. Arguments were presented that those pictures and shootings are not real. Other arguments were also presented that those pictures and shootings are real. It was also said that the foot-tracks and the traces left behind by the astronauts on the

moon were photographed several times by various satellites and drones, belonging to several countries. And so on."

"Although I'm not sure, I'm inclined to believe the official account," Daniel said.

"I'm inclined to believe the official account, too. However, now I'm not trying to take either side, but only to point out to you that it is impossible for us to truly know what happened then. This is the truth: With the exception of a few dozen people directly involved, nobody knows absolutely for sure, because nobody else was there to see with their own eyes. The rest of us have no other choice but to believe. And *something* inside us will make us believe either that NASA<sup>32</sup> is telling the truth, or that NASA is lying. In my case, *something* inside me is also telling me that I have to admit, although my pride may oppose this, that I simply cannot know the truth for certain and that I have to resign myself to this. Anyway, this is not an issue as important as the existence of God, or the true religion, so I don't think it's worth it to find the truth at all costs."

"I was once attracted by this debate, and I'm thinking, wouldn't it be possible to find a way to definitively prove which account is the true one?"

"Well, let's think about a few scenarios. If indeed there was no trip to the moon, and one of those directly involved decides to publicly admit this, but NASA keeps lying, contradicting his testimony, whom are we going to believe? Or, if the trip to the moon did indeed take place, what if one of those directly involved now gets into a difficult financial situation and he decides to 'admit' that everything was a lie? This way he becomes famous and earns a lot of money. Obviously, NASA will deny his 'confession.' Whom are you going to believe this time? How will you differentiate the first scenario from the second one?"

"Indeed, in the end I still have to appeal to *something* inside me to tell me whom to believe."

 $<sup>^{32}\,\</sup>mathrm{NASA}$ : National Aeronautics and Space Administration, the American governmental agency that runs the civilian space program.

"Further: If you get to the moon yourself and see with your own eyes the flag, the foot-tracks and the remains of the modules, will you believe that NASA told the truth? How will you know that the remains have not been placed there much later, say a year or two before you got there? But what if you get to the moon and you find no tracks there, but NASA keeps claiming that it told the truth and that astronauts from another country have erased its tracks, in order to discredit them? It would be difficult to erase those tracks, but not impossible. So in this case, whom would you believe?"

"My head aches," Daniel complained, "is there really no way to know for sure?"

"Only if NASA is indeed lying, and at some point all those involved decide to publicly admit this. I don't see any other way. You have to admit it: Truth or lie, it happened in the past and you were not there to see it with your own eyes. So there's no way for you to know for certain; you can only believe those involved or those who contradict them. Our abilities to 'see' the past are extremely limited."

### 3.3.3. Forensic Investigations

"I think I'm beginning to see where you're taking me. Religion is based on past events, too."

"You're seeing well, and we're getting closer to that. Let's take a look now at other issues from the past that some people are confronted with very often, namely the forensic investigations. Such an investigation almost always involves the deciphering of some past events, events that usually took place only a few days or a few weeks ago."

"I always liked detective movies and books," Daniel said.

"Success rates for these investigations vary a lot, from country to country and from one kind of crime to another. Any cop can tell you that the solving rate for cases of scratched cars is almost zero, while the solving rate for murders is rather high. But the cases that police and the prosecution consider solved are not

necessarily so. I think we've all heard of people who were sentenced, who spent a few years in prison, and then they were found to be not guilty. But what nobody knows is how many innocent people are still in prisons. Will their innocence ever be discovered?"

"So forensic science and the justice system are getting it wrong sometimes," Daniel noticed.

"The law says that the suspect is considered innocent until proven guilty. Thus, very many suspects, some of them probably guilty, are acquitted for lack of evidence. However, sometimes it happens the other way around; I mean, innocent people are sometimes found guilty. In America there is a national organization called The Innocence Project that investigates cases of jailed people who claim that they are not guilty. Hundreds of such cases have been uncovered so far, and those people have been released."

"I'm wondering," Daniel said, "couldn't mistakes have also been made in the process of discovering the wrongly convicted inmates? Haven't some truly guilty people also been released this way?"

"This is also very possible," Michael said, "what is impossible is to know for certain."

"Why does the justice system get it wrong? Why does it convict innocent people?"

"Because the events being investigated took place in the past, and the judge and the jurors weren't there to witness them. At first sight it would seem that, if there are eyewitnesses or if the suspect admits to committing the crime, the case is solved. But things are not always that simple. There were many cases in which the suspect was identified by an eyewitness, or even by more than one eyewitness, was convicted, spent many years in jail, and then

<sup>33</sup> http://www.innocenceproject.org/

it was proven that he was not guilty—the eyewitness or eyewitnesses had been wrong.<sup>34</sup> The Innocence Project claims that eyewitness misidentification is the main cause for mistaken convictions, playing a role in over 70% of uncovered cases."

"This is truly shocking," Daniel said, "I didn't know that eyewitnesses can be wrong so often."

"And even when the suspect admits guilt, you still cannot be sure that he is indeed guilty. In most countries, a suspect who confesses gets a significantly reduced sentence, and he can also be conditionally released sooner. In some of the cases mentioned before, the suspects did not admit to the accusations, and because of this, the true culprit was eventually caught. But maybe many other people, in their place, seeing themselves identified by several eyewitnesses, would have thought that they had no chance of being acquitted and would have 'admitted' that they were guilty, although they weren't, in order to get a reduced sentence."

"To me," Daniel said, "the most difficult cases seem to be those where it is someone's word against someone else's word, and there are very few other clues. They seem almost impossible to be solved correctly; in the end, the judge or the jury will simply have to believe one of them. And sometimes it happens that even those few clues are not clear and are subject to interpretation. I know what you're about to say, the decision is taken by that inner *something*."

"Yes, that's correct. Here's an example: A few years ago, in Italy a murder was committed that made headlines around the world. The victim was a student from the United Kingdom, and two of the main suspects were a student from America and one from Italy. Well, the two suspects were put on trial several times, were sentenced, were put on trial again, were released for lack of evidence, and then the case was opened again. Modern science simply cannot determine who the real culprit is. The murder took place in the past, the judges were not there to see it with their

<sup>&</sup>lt;sup>34</sup> See, for example, the cases of Herman Arkins, Ray Krone, Ronald Cotton and Alan Crotzer, the latter having been "recognized" by five victims.

own eyes, the suspects deny the accusations, and so nobody can know what really happened there. It is possible that the two of them are totally innocent, victims of the judicial system. But it is also possible that the two of them are cold-blooded killers, who premeditatedly murdered the British student. Is there any way for us to find out the truth? I don't think so, modern science is powerless in this regard."

"I thought that nowadays DNA can help solve this kind of problems."

"If a trace of somebody's DNA, say person X, is found on the handle of a knife, what exactly does it prove? It only proves that person X held that knife in his hand at some point. But what if later person Y came along, with gloves, and used that knife to kill person Z? I wonder, has all of person X's DNA been removed from the knife? What if person X and person Z were enemies and hated each other, will the judge or the jury consider that person X had a reason to kill person Z? Will person X be convicted of murder? If he is sure that he will be convicted, will person X 'admit' to the guilt in order to get a reduced sentence? Did I say that a trace of DNA could prove that person X once held the knife in his hand? But what if person W wanted to frame person X and somehow obtained a sample of his DNA, say from another object that person X has indeed touched, or from some of person X's clothes, and placed that DNA on the murder weapon? Does it seem impossible to you? All that is needed is a drop of sweat, which contains enough DNA to make a connection between a man and a weapon."

"I am scared by these cases," Daniel said. "To me it seems absurd, in the 21st century, to be convicted of something that you haven't done."

"I have told you all this about the judicial errors in order for you to better understand what we're up against when we try to decipher the past with the help of science. And now a final example: In 2005, the famous American singer Michael Jackson had problems with the justice system again, being accused of indecent behavior toward minors. While the trial was unfolding, a poll was conducted to see whether ordinary people considered him guilty

or not. Something that immediately stood out in the poll results was that 70% of the white population thought he was guilty, compared to only 30% of the African-American population."<sup>35</sup>

"A very large margin," Daniel noticed.

"Both whites and blacks had access to the same information about him, mainly from the TV. Neither group had been present for those events to see with their own eyes what Michael Jackson had done."

"Yes," Daniel said. "But *something* inside them was inclined to either consider him guilty, or to consider him not guilty. But the justice system found him not guilty. If the jury was right, then 70% of the whites and 30% of the blacks were wrong. I understand the problem. It is wrong to consider someone guilty just because of his color. But it is equally wrong to consider him not guilty also just because of his color."

## 3.3.4. Ancient History

Michael thought for a few seconds, looked at his watch again, then went on:

"If investigation of the recent past can sometimes be so problematic, how are we going to decipher the distant past, the events that took place hundreds or thousands of years ago? All we have at our disposal for scientific investigation are the ruins of the old civilizations, the objects left from them and many, very many manuscripts. All these help us form an image, more or less detailed, about what the distant past was like. But we cannot go back in time and see with our own eyes whether the image we're forming is true or not. Of course, in this process, too, our inner *something* filters and interprets all these sources of information about the past. For example, many researchers reject from the beginning any written source, any manuscript that tells of supernatural events or events that look inconceivable to them. Did they

<sup>&</sup>lt;sup>35</sup> http://www.prnewswire.com/news-releases/differing-perceptions-of-the-guilt-or-innocence-of-michael-jackson-kobe-bryant-and-martha-stewart-according-to-harris-interactive-survey-58977412.html

witness those events? No, but *something* inside them makes them consider them fairy tales."

"Little by little you're getting closer to religion," Daniel noticed.

"Yes, and here's an example: The Bible talks about an ancient empire called Assyria. But until the 19th century, with the exception of the Bible, there were no other important historical sources that mentioned it, so some unbelievers doubted that it had ever existed. But around the middle of the 19th century, archaeologists unearthed the ruins of the city of Nineveh, the capital of this empire. Bible critics were forced to admit that they were wrong."

"So far, the main character of your story was the inner *something*," Daniel noticed.

"Yes," Michael replied, "I had to begin with this before discussing the arguments for religion and the arguments against the theory of evolution. I think I've shown you clearly enough how limited are our abilities to investigate the present, the future and the past. I think it is now obvious that each one of us has that inner *something*, which is present in all aspects of our lives and it affects the way we perceive everything that is going on around us, the way we see our friends, the way we see the present, the way we imagine the future and the past."

"OK, I agree," Daniel said, showing some signs of impatience. "Let's now get back to my initial question, what makes you think that there is a God?"

"Take a look at this car that is now passing by in front of us. It was designed by engineers and built by workers inside a factory, right? But what if I were to tell you that actually it was not built by humans, but by the rain, the wind and other elements of nature, which assembled, by chance, the components and the result was a car? You would say that I'm not in my right mind, wouldn't you? Well, what about a living being, thousands or millions of times more complex than a car? Doesn't it also need an Engineer to design it? But look, modern science comes and says something else. It says that actually there is no need for a Creator and that everything happened by itself, during billions of years of time."

"The Big Bang and evolution."

"Well," Michael said, "let's now take these arguments of science and analyze them one by one."

"Finally."

## 3.3.5. An Extremely Absurd Theory

"However, before analyzing the arguments about the age of the universe, I want to briefly mention an absurd theory. It was proposed by evolutionists as a joke, as a way of making fun of believers, but it can very well be used against them, too."

"Which theory?" Daniel asked curiously.

"Get ready to hear the most absurd scenario you have ever heard: The universe is just a few hours old. It was created this morning, and so were we."

"I remember pretty well what I did yesterday," Daniel said, smiling.

"Let's say that all our lifetime memories were created this morning and implanted in our minds. This whole process lasted a few hundredths of a second. God is all-powerful and He could do this, too, if He wanted to. This theory was first proposed, as a joke and in a slightly different form, by Bertrand Russell, an atheist philosopher. Then it was developed by others under the name 'Last Thursdayism,' because the final phrasing says that 'the world was created last Thursday."

Daniel laughed.

"OK... If you yourself are saying that it is an absurd theory, why do you mention it?"

"Because I want you to truly understand how limited are the abilities of science to investigate the past. I wonder, how could science ever prove that this theory is false? Or if it were true, how could science ever determine this? If all scientists and all laboratories in the world would concentrate only on this problem, could they ever come up with the slightest scientific argument, either for or against?"

"OK, and what kind of arguments do you have against it?" Daniel asked.

"I have no scientific arguments," Michael replied, "because it is not possible to argue that way. I'm only telling you that *something* inside me is absolutely sure that this theory is false."

"I can't believe that there are really no arguments against it. For example, if the theory were true, your God would be a liar, because He has implanted in your mind false information."

"This is a very good argument, but it is not a scientific one. This is a theological or moral argument. Besides, even if God did give us false information, I don't see a serious problem here. Sometimes we also give false information to our little children, when they are not the necessary age to understand the truth. For example, we tell them that babies are brought by the stork." <sup>36</sup>

"OK, but this theory is extremely improbable."

"Improbable?" Michael asked. "And how exactly did you calculate the probability? What mathematical formula did you use? When you cast the die you know that the probability of getting any side is 1/6, because you have the die in front of your eyes and you can see that it is symmetrical and balanced. But tell me, please, how do you calculate the probability that God created the universe this morning? Do you know the mind of God, so you can deduce how likely or unlikely it is for Him to do something like that? Isn't it that *something* inside you that *feels* that the probability is zero?"

"Yes, maybe..."

"Here we have a funny and interesting paradox. Although we cannot argue logically and scientifically that the universe was not created this morning, we can, however, deduce logically and scientifically the fact that we cannot argue logically and scientifically against this absurd theory."

"Yes... Maybe it is indeed so. But if you start to reason this way, you can't be sure of anything anymore."

<sup>&</sup>lt;sup>36</sup> In Romania, when little children ask where babies are coming from, (sometimes) they are told that it is the stork that brings them.

"That's true, from a scientific point of view you cannot be absolutely sure of anything. And if we reject this reasoning, all we do is lie to ourselves that science could offer us absolutely certain answers. No, science cannot determine such things. Think carefully about this absurd theory and you'll have a revelation. You'll discover how powerless science is, and more exactly, how weak, how non-existent is man's capability of knowing things only by his own means. Man cannot even *know* that there was a yesterday, man can only *believe* and nothing more. And at the same time, you'll discover how powerful is man's capability to believe: Although there is absolutely no logical or scientific argument against this theory, we're all absolutely certain that it is wrong. *Something* inside us is absolutely sure of that, without having any tangible proof."

Daniel thought for a few moments. It was hard for him to accept that he simply could not find any rational, scientific argument against such an absurd theory. Eventually he said:

"I don't see why I should think about arguments against this absurd theory. According to the same atheist philosopher you mentioned, namely Bertrand Russell, if one makes statements that are impossible to investigate scientifically, then it is his obligation to offer proof for them. For example, Russell was saying, if he were to assert, without offering any proof, that between the earth and Mars there is a teapot that also orbits around the sun, he could not expect people to believe him just because his statement cannot be proven to be false."

"This problem has two sides," Michael answered, "and since you mentioned it, let's look at both of them. First, unlike Russell's teapot, for which there is no proof, for the existence of God and the divine creation, there are countless tangible arguments, as we'll see further on. Second, the fact that his statement about the teapot can be neither invalidated, nor confirmed scientifically, means neither that the teapot exists, nor that it doesn't exist. It only means that, from a scientific point of view, we don't know. And third, that hypothetical teapot has no importance for us; it affects in no way either this life of ours, or the eternal one. But the existence of God, of the soul and of the eternal life are of the

greatest importance for us. Russell probably wanted to say that we don't have to accept to believe in God solely because we cannot prove scientifically, tangibly, that He does not exist. But someone else might say, on the contrary, that we should not reject the belief in God solely because He cannot be analyzed scientifically in a lab as we use to analyze matter. As I was saying, the problem can be looked at from both sides."

"Yes, it seems so. But tell me, please, you've heard about Occam's razor, haven't you? It is a principle according to which, among multiple hypotheses, we should choose the simplest one, the one that implies the fewest assumptions."

"Of course I've heard about it. But you do realize that Occam's razor cannot be proven mathematically or scientifically in any way, it is only a principle adopted by some people."

"Yes, that's true," Daniel admitted.

"Well then, let's now apply Occam's razor to the theory that the universe was created this morning. Which explanation is the simplest one? Which explanation involves the fewest assumptions? Do you see the problem? There is no law of physics and no mathematical formula with which you could calculate how 'simple' such a hypothesis is. There is no law of physics and no mathematical formula with which you could evaluate the assumptions involved so that you could compare them to the assumptions involved by the other explanations as you compare, for example, two numbers."

"Yes, I understand what you mean."

"Is the number 1 greater than the number 2? No, obviously, this statement is clearly false. But is the hypothesis that the universe was created this morning 'simpler' than the hypothesis that it was created seven or eight thousand years ago? How do you express the 'simplicities' of these two hypotheses in digits, so that you can compare them as you compare the number 1 to the number 2? I think that the 'simplicity' of such a hypothesis is something *totally* subjective, and it cannot be measured or calculated in any way."

"Yes," Daniel admitted, "I give up. Indeed, *something* inside me *feels* which hypothesis is 'simpler' and accepts it. It is impossible to argue scientifically, one way or another. But what if I ask you now what the nature of that inner *something* is?"

"I believe that it is the soul, the spiritual component of the human being, which, depending on its free will, is either helped by the grace of God, or influenced by the lies of the devil. And a nonbeliever probably believes that it is just something in man's brain, some chemical reactions. I don't believe science can determine who is right. And if you try to use Occam's razor, you will encounter the same problem: How do you determine which option is 'simpler'?"

"The option that does not imply a soul...?"

"Are you sure? How did you calculate that? Why do people have brains? Aren't people without a brain 'simpler'? Why do cars need a steering wheel? Aren't cars with no steering wheel 'simpler'? Why do we have to eat in order to survive? Wouldn't it have been 'simpler' if we could live without eating? Do you understand the problem? A human body with no soul may be, indeed, 'simpler' than one with a soul, but that does not mean that it would also be functional. A body without a soul is just a corpse."

"Yes, you're right," Daniel admitted, "many times the simpler alternative is not functional. Besides, a brain capable of such things would not be at all simpler than a brain that is only an intermediary between soul and body, so religion's alternative would be simpler... But I think this problem has to be phrased differently: Imagine, for example, a brain as a nonbeliever sees it, that is, a brain capable of many things that believers attribute to the soul, like the capability to believe or not to believe something. Wouldn't such a brain be simpler than the soul that you're talking about?"

"Science cannot answer this question at all. Science can't even understand the brain well, let alone the soul, which it cannot analyze in any way. Therefore, *something* inside you will *feel* which alternative is 'simpler' and will choose that one."

"Therefore, the nature of that inner something..."

"Cannot be determined scientifically. However, that inner something can feel what its own nature is. I know, this is circular reasoning, but it is unavoidable in this situation."

# Placeholder for Missing Chapters

Next, Daniel and Michael held a long conversation about the Big Bang theory, the ages of the universe and the earth, about the theory of evolution, and about which religion is the true one. Their discussion covers topics such as:

The light of distant galaxies is shifted toward red.

Dark energy and dark matter have never been detected in a lab—their existence and their nature are only presumed by those who believe the universe and the earth are billions of years old.

The spiral shape of galaxies points to a much younger age than the supposed billions of years.

Comets, which are presumed to have been formed at the same time as the solar system, have a maximum lifespan of 10 to 15 thousand years. The so-called Oort cloud, the alleged comet warehouse, has never been observed, its existence is only presumed by those who believe in billions of years.

The problems of radiometric dating methods. Even the famous isochron method, which does not rely on knowing the initial amount of isotopes, yields wrong ages many times, and sometimes even negative ages (in the future).

The diffusion rate of helium in zircon crystals, as many other geologic clocks, points to a much younger age for our planet.

Living systems are incredibly complex. Even a unicellular organism, a bacterium, is like a real industrial platform. It is impossible for a "simple" living cell to have appeared just out of the blue, even if the entire universe were full to the brim with the so-called pre-biotic soup.

The evolution of genetic material is extremely improbable, even if the entire universe were full to the brim with cells that try to evolve.

The way living organisms work cannot be explained without the existence of a soul. For example, the folding of proteins.

There are no fossils to support the theory of evolution; that is, there are no transitional fossils. Even some evolutionists admit this.

All around the world we find countless legends similar to the biblical flood, which suggests that they have a common source, a real event, whose account was transmitted from generation to generation. The same is true for Joshua's long day (or long night on the American continents).

The true divine revelation, the Christian revelation, was accompanied by the greatest miracles.

Heaven and hell are very real, but they are, first and foremost, eternal states of the soul. In the afterlife, they exist as "physical," tangible places, too, but this is of secondary importance.

Sin is a disease of the soul. Sinners in hell suffer eternally because their souls are sick forever, not because a vengeful God tortures them, inflicting pain on them on purpose out of revenge. God wants to save all of us, but we have to want that, too.

The Eastern Orthodox Church is the only true Church of Christ. Although at first sight Roman Catholicism might seem similar to Orthodoxy, there are major differences. For example, the two religions see the meaning of Christ's Crucifixion in very different ways.

We honor the icons and the saints, we venerate them, but we do not worship them as we worship God. Both in the Greek and in the Latin languages have existed, since the beginning of Christianity, different verbs for these religious acts.

Aliens are demons who are trying to deceive us. Alien abductions are very similar to demon possessions.

These chapters, which are missing from this excerpt, can be found in the complete edition, titled *Dialogue with a Nonbeliever*, by the same author.

#### Chapters Missing from This Excerpt:

- 4. Billions of Years?
  - 4.1. Some Basic Things
    - 4.1.1. Can the Universe Be Eternal?
    - 4.1.2. Science's Account
  - 4.2. Age of the Universe
    - 4.2.1. The Laws of Physics
    - 4.2.2. Distance to the Stars
    - 4.2.3. Dark Energy
    - 4.2.4. Background Radiation
    - 4.2.5. Dark Matter
    - 4.2.6. Comets
    - 4.2.7. Starlight and Time
    - 4.2.8. Natural and Supernatural Explanations
    - 4.2.9. The Sub-Atomic Universe
  - 4.3. Age of the Earth
    - 4.3.1. Radiometric Dating
    - 4.3.2. Equilibrium of Radioactive Isotopes
    - 4.3.3. Helium in Zircon Crystals
    - 4.3.4. Sodium in Seas and Oceans

- 4.3.5. Recorded History
- 4.3.6. Dendrochronology
- 4.3.7. Ice Layers
- 5. Can Living Beings Evolve?
  - 5.1. Complexity of Life
    - 5.1.1. Complexity of Cell Machines
    - 5.1.2. Protein Folding
    - 5.1.3. The Soul Quickens the Body
    - 5.1.4. The Soul and the Heart Transplant
    - 5.1.5. The Right Explanation
  - 5.2. Origin of Life
    - 5.2.1. Spontaneous Generation?
    - 5.2.2. Maximum Number of Tries
    - 5.2.3. Chirality
    - 5.2.4. The Monkeys and the Typewriter
  - 5.3. Can Living Beings Evolve into Different Life Forms?
    - 5.3.1. Genetic Recombination
    - 5.3.2. Genetic Mutations
    - 5.3.3. Irreducible Complexity
    - 5.3.4. Are There Any Beneficial Mutations?
    - 5.3.5. The Problem of the Intermediate Stages
    - 5.3.6. Bacteria and the Citrates
    - 5.3.7. Changes Observed in Today's Life Forms
  - 5.4. Controlled Evolution?
- 6. Lack of Fossils
  - 6.1. The Fossil Record
  - 6.2. What Do the Evolutionists Say about the Fossils?
  - 6.3. Twenty Fossils
- 7. Other Arguments
  - 7.1. Vestigial Organs
  - 7.2. Ontogeny Recapitulates Phylogeny?
  - 7.3. Is Evolution a Scientific Theory?
  - 7.4. Ethical Arguments
  - 7.5. Joshua's Long Day

- 7.6. Noah's Flood
- 7.7. Dinosaurs
- 8. The True Religion
  - 8.1. Some Basic Beliefs
    - 8.1.1. Creation
    - 8.1.2. Revelation
    - 8.1.3. About Islam
  - 8.2. What Are Heaven and Hell?
  - 8.3. Hell in the Vision of the Orthodox Church
    - 8.3.1. Saint John of Damascus
    - 8.3.2. Saint Theophan the Recluse
    - 8.3.3. Saint Paisios of Mount Athos
    - 8.3.4. Saint Silouan the Athonite
    - 8.3.5. Saint John Maximovitch
    - 8.3.6. Saint Nephon
    - 8.3.7. Saint Paul the Apostle
    - 8.3.8. Saint Isaac the Syrian
    - 8.3.9. Saint Nicholas Cabasilas
    - 8.3.10. Saint Maximus the Confessor
    - 8.3.11. Saint Gregory the Great
    - 8.3.12. Egyptian Paterikon
    - 8.3.13. The Encyclopedia
    - 8.3.14. Dostoyevsky
    - 8.3.15. About Metaphors
    - 8.3.16. Conclusion about Hell
    - 8.3.17. Sartre's Hell
    - 8.3.18. A Sinner in Heaven
    - 8.3.19. Eternity
  - 8.4. Why Are There So Many Religions?
  - 8.5. Aliens
  - 8.6. The Eastern Orthodox Church
    - 8.6.1. About Humility
    - 8.6.2. About Icons
    - 8.6.3. Worship and Veneration
    - 8.6.4. Confession
    - 8.6.5. Communion

- 8.6.6. Holy Objects
- 8.6.7. About Sinful Believers
- 8.6.8. About Roman Catholics
- 8.6.9. Religious Exclusivism
- 8.6.10. Books
- 8.7. Other Questions
  - 8.7.1. The Movie Zeitgeist
  - 8.7.2. Old Testament Law
  - 8.7.3. Old Testament Worship
  - 8.7.4. Old Testament Wars
  - 8.7.5. Unknown Mistakes
  - 8.7.6. About Birth Control
  - 8.7.7. About Repentance
- 9. Epilogue

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