Brain & Five Senses



Think about what you can hear, smell, feel, taste and touch.

In this book, you have learned how your body is designed to interact with what goes on inside and outside you. You have learned about the connections between your brain and your five senses of sight, hearing, smell, taste and touch. You have learned how your physical body is designed to communicate with living and non-living things in your environment, find the necessary nutrition for survival, and keep you safe.

Read the paragraph below and think about the sensations of being on the beach on a warm summer day. Think about what you can hear, smell, feel, taste and touch.

It is a warm summer day. You are at the beach. As you gaze out at the flickering light dancing on the water, bubbly waves crash on the shore. Seagulls squawk overhead. The salty breeze brushes against your face as your toes sink into the warm, soft sand.

As you stand on the shore, you are at peace. Yet amazingly, you are not aware of the noise of stimuli bombarding your senses. Your brain combines the stimuli from your five senses into one conscious thought: 'It feels peaceful here'. Like gathering the pieces of a puzzle, it combines the input from your five senses in a process called multisensory integration. In this final chapter, we will explore the concept of multisensory integration. But first, let us take a step back to recall how our senses work.

THE SENSORY SYSTEMImage: Sense System Syst

FUN SCIENCE: SOUND



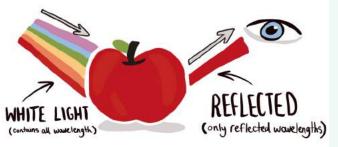
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Being able to see may possibly be the most important way to find out about the world around us. Our eyes work along with our brain to determine what we see.

Moreover, without light, we would not be able to see. This is because the act of seeing requires the use of light rays. When we look at something, light rays are reflected from the object into our eyes onto a thin, nerve-made membrane called the retina. Signals pass from the retina from the back of our eyes to the optic nerve and onto the brain. Our brain then processes electrical signals as an image and as a result, we can understand what we are looking at.

The interconnectivity of the eyes, brain, sunlight, and reflective objects reveal that their Creator is one.



The iris, which is the colored circle in the center of our eyes, contains muscles that are designed to make the pupil (the dark hole in the center of the iris), narrower or wider depending on the amount of light in the surroundings. In the dark, the iris muscles contract, and the pupil becomes wider, allowing more light to enter. In bright sunlight, the iris muscles relax, and the pupil becomes smaller, thus preventing large amounts of light from entering. That is our eyes have been equipped with these fine structures to protect them from damage and maximize their efficiency.



What makes it possible for the iris, the pupil, and the optic nerve to perform their roles with such precision? The eye is dependent on the light and on the brain in order to perform its function of 'seeing'. The brain too is dependent on the eyes to translate the light rays into electrical signals. We are dependent on our brains to translate the electrical signals into images that we can understand and label. Without the presence of light, we would be unable to see the objects in our environment. Without functioning eyes, we would be unable to receive the light rays reflected from the objects in our environment. Without a healthy functioning brain, we would be unable to understand the messages from the objects in our environment

Let's offer our appreciation for five senses five times a day, not one day in a year.



hat is in order to see, we need light, as well as functioning eyes and brain. We also need to keep in mind, that our eyes, brain, and indeed all our organs can function only as long as we are alive. That is they do not exist in the void but in a living body. What is more, our life is dependent on the whole world around us, including air, water, sunlight, food, and many more. We understand from this situation, that the brain, the eyes, and indeed our whole body is connected to the presence of light and the rest of our surroundings.

Therefore, we conclude that the Maker of the eyes, can only be the Maker of our whole body, and the whole world. Likewise, since everything is interconnected, whoever gives sight and makes us see, can only be the one who gives us life and who creates light and makes all the things that we see.

hus, we learned that our eyes are actually connected to the world around us and to the entire universe. We also learned that none of the parts, both large and small, that are needed to produce a functioning eye own the power to create the eyes. The many components that make up our eyes, and the way in which they interact with another, are merely apparent 'causes'. In actual fact, our sight is granted to us directly by our Maker, who is the Maker of not only our eyes and brain, and the light, but also the Maker of the whole universe. Our All-Seeing Maker who possess Infinite Power give us sight through a process of so-called 'cause and effect' that takes place in our interconnected universe. Just as we see through eyeglasses, but not from the eyeglasses, we receive our sense of sight from the All-Seeing through the eyes and brain that are themselves created

Indeed, our Eyes are connected to Sunlight.

The Sun is connected to the Solar System.

The solar system is connected to the Milky Way Galaxy.

The Milky Way is connected to all the other Galaxies.



e can differentiate between the sound of a thunderbolt and a barking dog using the connection between sound waves, our ears and our brain.

For example, when your friend is speaking to you, the air around the sound coming from his mouth vibrates. The vibrations then travel through the air and enter your ear as sound waves. When the sound waves bump into your ear drum, your ear drum also vibrates, as a result, the eardrum then bumps into three small bones. The last of these bones moves into a snail shaped, liquid filled structure called the cochlea. When the liquid in the cochlea moves, tiny hair cells lining the cochlea move as well.



The hair cells then convert the mechanical signals into electrical signals which are sent to the brain via the auditory nerve. Finally, the received electrical signals are converted into identifiable sounds in the brain. This hearing process happens almost instantaneously so that you can understand the words being spoken by your friend as he is speaking.

We have learned to reflect on the wisdom behind the creation of our functioning ears and brain and their connection to the sounds around us. We learned that air is necessary for sounds to travel and without it, we would not be able to hear. We learned that the Creator of our ears can

only be the Creator of the air that carries the sound waves that reach our ears. We learned that our sense of hearing functions within the interconnected systems inside our body as well as outside in the world. We learned that our sense of hearing is actually connected to the entire universe.

In addition, we also learned that neither our ears as amazing organs, nor our body with its supporting external environment could possibly give us the sense of hearing. Our ears, like our eyes and visual system, are all created; they themselves need to be sustained. They are merely causes through which we receive the effect of hearing from our All-Hearing and All-Wise Maker/Creator.



mells are powerful. They can prompt strong feelings. The strong smell of a garbage dump is physically repulsive whereas an early morning walk through a dewy pine forest is a refreshing experience. If you walk into a bakery, you know there is freshly baked bread before you even see it. It's because you can smell the aroma the minute you step in into the bakery. And how do you know this? Because chemicals from the baking bread are released into the air and enter your nostrils. They are too small to see with your eyes but the olfactory receptor cells in your nose can detect them.



Then the olfactory receptor cells send a message to your brain through which you become aware of the presence of the bread being baked. The smell of baked bread may ignite the feeling of hunger, or it may evoke some memories of your mom baking bread at home for example.



le have reflected on why specialized cells in our nose are designed to differentiate between 1 trillion different scents. Why are we given the remarkable ability to smell? How can a human nose, made up of a specific combination of atoms and molecules, determine that a chemical entering it is foreign? In fact, that chemical is also made up of another specific combination of atoms and molecules. Why does our nose send a message to our brain about the presence of such a chemical? Does our nose have a mind of its own? Can it make decisions by itself? Is it conscious? Do we control our nose? Who can command our nose to send a message to our brain to find out what a smell is? Who designed our olfactory system in such a way that it serves us so efficiently? Who makes our nose as a tool that protects our physical bodies from harm in our environment that we would otherwise be unaware of?



onsider electricity and how it travels from power stations, through transmission lines, until it flows into the wires in our homes. Though we cannot have electrical power without using the well-connected distribution system, we do not believe that electricity comes from this system or its components. Yes, we do not enjoy the light of bulb if we do not use its switch to turn it on. However, we do not think the light comes from the bulb.

Similarly, we learned that our sense of smell is built upon the well-connected and complicated delivery systems inside our body as well as outside in the world. We learned that it is connected to the entire universe. Indeed, we receive our sense of smell through our nose in the same way that electricity is received through a series of cables and switches. Our nose along with the olfactory system and brain is necessary, but not sufficient to experience the sense of smell. They are apparent causes through which we receive the effect of smelling from the Most-Merciful and Most-Kind. ow think about how we continuously benefit from electricity. If we do want any interruption, we need to pay our utility bill to the owner of the power plant that generates electricity. Now compare how we receive our sense of smell though our nose to how we receive electricity. Don't we need to pay the price in the form of appreciation for smelling and for the other functions of our amazing nose to their Maker and Owner? Isn't our nose with all its amazing functions a great blessing? Can you imagine a life without a healthy functioning nose?

We could lose our ability to smell anytime, yet it is working flawlessly. Isn't this remarkable gift worth much gratitude? Isn't our Maker who makes us see, hear, and smell Most-Generous and Most-Kind? Just as we need to pay our utility bill to the owner of the power plant that generates electricity, we also need to pay the price in the form of appreciation to the Owner of the sense of smell. Indeed, the more we reflect on His amazing gifts to us, the more we are filled with gratitude, appreciation, and love for Him.

Isn't ou<mark>r Make</mark>r w<mark>ho</mark> makes us see, hear, and smell Most-Generous and Most-Kind?



How Do We Taste?

he sense of taste, like the sense of smell, is based on the detection of chemicals. The tongue can detect five primary tastes: sour, salty, sweet, bitter and umami. Some tastes such as chocolate and peppers are a combination of these tastes and "spicy" is not a flavor- it is a pain signal. We also differentiate between various types of the primary tastes. For instance, the human tongue has 25 different types of receptors to identify various chemicals that are bitter and one receptor type to unlocks the sense of sweetness. However, the sweet receptor "has many pockets' and each one of them responds to a different type of sweet molecule. For example, some respond to natural sugars. Others respond to artificial sweeteners.



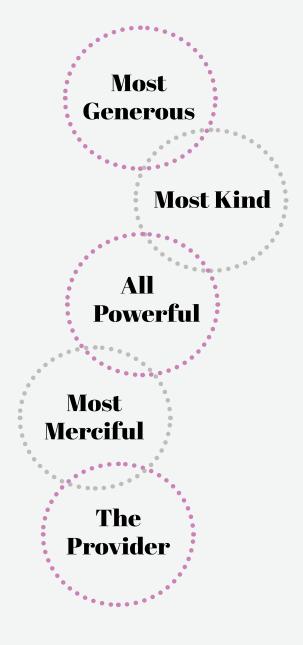
Ithough, according to the old taste map of the tongue, the back of the tongue tastes bitterness, the middle of the back part of the tongue tastes sourness, the middle of the front part of the tongue tastes saltiness and the tip tastes sweetness. However, in 1974 scientists discovered that any taste can be detected anywhere on the tongue. When you take a bite into a green apple for example, different chemicals from the apple mix with the saliva in your mouth and stimulate the taste receptors on your tongue. The receptor cells then send signals to the brain where they are processed into identifiable tastes.

The senses of taste and smell are connected. Odors from the food that you eat move into your nose and stimulate olfactory receptors. Since your sense of smell is more powerful than your sense of taste, a given amount of food can stimulate the olfactory receptors in your nose much more than the taste receptors in your mouth. When you have a cold, you often cannot taste your food. This is because your sense of smell has been affected and not your sense of taste.



fter studying how our tongue, our food and brain are interconnected and interdependent, we now have an idea of the complex mechanism behind the sense of taste. The individual components that are designed to help us experience taste are related to the food and liquids we ingest. Moreover, they are embedded within the human body that is connected to the world around us. Without the human body, we would be unable to experience taste. Without the bountiful world around us, we would not have foods to taste and nutrition to remain alive. From all this, we can conclude that our Maker who sustains our bodies within the world that we live in, is also the Maker of the nutrition needed to sustain it.

He is also the Maker of the tongue and brain without which we would be unable to experience the sense of taste. In short, our sense of taste cannot be the product of unconscious, deaf and blind material causes that are themselves being made and sustained. Our sense of taste is clearly a gift of the Provider, the Most-Generous, the Most-Kind, who creates and sustains all causes, and all beings, and the whole universe. The delicious tastes that we experience come neither from the food we eat nor from our brain. They proceed from the Infinite Mercy of the All-Merciful and All-Powerful who makes us experience delicious tastes through our food, tongue, and brain.





he sense of touch is regulated by the largest organ in our body- our skin. The skin functions like a protector, a temperature regulator, an excreter, an absorber and a blood reserve.

Disorders of the skin can be life-threatening. If the skin were not equipped with a self-healing mechanism, you would bleed out from the smallest scratch or puncture wound. If bacteria or viruses could penetrate the skin into our bodies, we would be extremely vulnerable to disease.



Moreover, our skin is designed to beautify and protect us. Human skin color is determined by the amount of melanin pigment present in it; it ranges from the richest brown to the palest hues. Melanin also serves to protect the body from harmful Ultra-Violet radiation. Individuals born without or with reduced amounts of melanin in their skin have a condition known as albinism. People with albinism have a greater risk of skin cancer and have issues with vision.

What prevents the skin from allowing the fluid in our bodies from seeping out of it? What prevents us from becoming dehydrated? How does the skin to recognize foreign bacteria as harmful, and beneficial bacteria as harmless? If the skin were to lose its waterproof property, or its self-healing abilities, we would die.

Our skin has been designed to cover our internal organs and protect us from external harm. Consequently, it is clear that the Maker of the skin can only be the Maker of the body it covers as well as the Maker of the world in which it is sustained. Furthermore, we learned that the amazing tasks that are associated with the skin could not be attributed to the skin itself as they require comprehensive power and knowledge that encompass the whole universe. That is, they are the creative acts of a Maker with Infinite Knowledge and Power. The skin, with its elegant cellular structure and well-connected systems, is thus a platform through which the Infinite Knowing, Powerful and Merciful protects our body and provides us with the incredible sense of touch.

The Five Senses as One Sense: Multisensory Integration

ome scientists believe that the five senses are in fact just one sense. By this, they mean that all the senses are parts of a single system. For example, they argue that it is senseless to talk about the taste of food, since what you sense in your mouth is connected simultaneously to your experiences of smell, sight, hearing and touch.

The same can be said about the overall sensation you feel when you are on the beach for instance, as it has been noted in the introduction. When your senses are overloaded with the various stimuli near the sea such as the glare of the sun, the sound of the

As we study our senses and the universe, we will see the unity behind, multiplicity. We will understand the interconnectivity behind diversity.



crashing waves, the texture of the grainy sand, the salty aroma of the sea and the taste of salt on your lips, your brain is busy processing all the incoming signals that culminate into one overall sensation. This is known as multisensory integration.

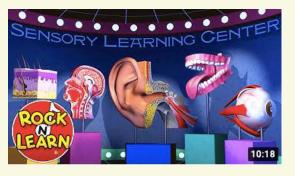
What does multisensory integration mean? Multi-sensory integration refers to how the five senses work together to achieve a certain function or outcome. This means that the various body systems such as vision, hearing, smell, taste and touch are interconnected like pieces in a puzzle. It is only when the puzzle is complete and the brain receives data from all the senses that we can see the whole picture. This concept is first developed by an eleventh century physician and philosopher known in Islamic civilization as Ibn Sina (d. 1036) and in the West as Avicenna.

Ha argued that we have an internal sense called "common sense" (al-hiss al-mushtarak) which combines all the data received from individual external five senses. Therefore, for Ibn Sina multisensory integration is achieved by the common sense. Then, this combined data is sent to the mind where they undergo the process of thinking.

e are not born with the complete ability to integrate our senses. In fact, our brain gradually develops the ability to combine the various input from our multiple senses over time. In chapter 2, we learned that the brain is made of many cells called neurons. These neurons establish pathways in the brain which are designed to carry one type of information. For example, when you smell a particular odor, information about the chemicals in that odor are sent to the part of the brain where smells are processed.

Similarly, when you look at the source of the smell, the visual cortex is used. In life, there is no scent, or sound, or image isolated from each other and from the rest of the world. They all coexist simultaneously, and we need the information from all our senses in order to have a representation of our surroundings. In fact, we are constantly exposed to a large amount of multisensory information that is turned into signals when it reaches our brain. But how are these varieties of signals distinguished and then how are the related



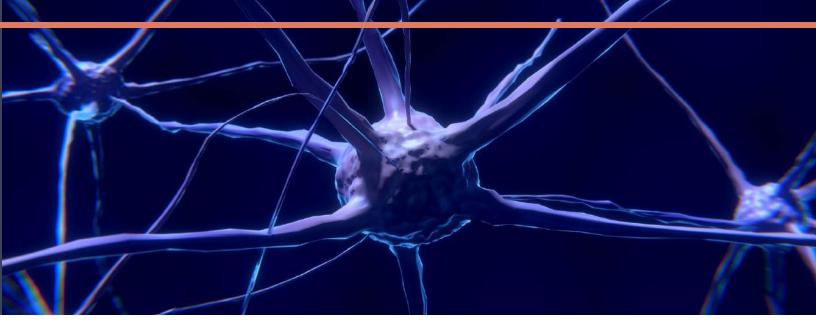


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signals integrated? In other words, how do we know which signals belong together and therefore need to be combined? For example, if you watch firework, you hear an explosion followed by cracking sounds and flashing lights. Instantly, you understand that those sounds, and lights belong together. This amazing phenomenon of processing information from multiple senses is called multisensory integration.

However, scientists still don't know how we can decide whether specific sounds and lights correspond to a common event or not. Let's keep in mind that even though visual and auditory [sound] information originate from the same physical event, they are processed in different parts of the brain with largely independent neural pathways. Yet, in a miraculous way, we can instantly and effortlessly distinguish which sounds is related to which event. So how are correlations detected across the senses? Researchers are still trying to understand the complex mechanisms underlying multisensory integration and correlation.



Ultisensory integration happens in multiple regions in the brain called convergence regions. An example of such a region is the superior colliculus whose role is to facilitate the finding of objects. Let us say for example that you are walking down a street and hear someone call your name. When you look to see who is calling, your superior colliculus is working. It is combining the stimuli of sound and vision to facilitate the localization of the object, which in this case is the 'caller'.

There are also brain areas that have conceptual roles- meaning they play a role in making sense of how objects relate to each other. These areas are important to make links between things like a wooden pencil coming from a tree for example. If you were to have a disorder in the region concerned with conceptual understanding, you would not be able to link the wood and the fact that it came from a tree. However, all of these interconnected systems are not sufficient to explain the source of the five senses. You perceive reality using the combination of all the sensory inputs. Since the world is constantly changing, you need a constant flow of inputs to continue your conscious experience. If you are unconscious, then you do not perceive what is happening in your surroundings. In contrast, being conscious is being able to put together the information that you receive through

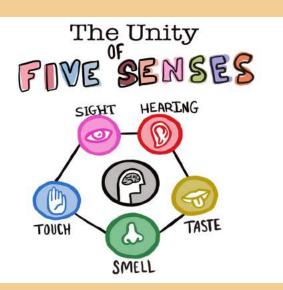
SENSORY INTEGRATION



your body in order to make decisions or think a certain way. But what is consciousness and where does it come from? Scientists are still struggling to find a meaningful answer. Though materialist scientists believe consciousness is nothing but the emerging quality of neural interaction, others disagree. For instance, Max Planck, considered to be the founder of quantum mechanics, places consciousness above matter: "I regard consciousness as fundamental. I regard matter as derivative from consciousness. We cannot get behind consciousness. Everything that we talk about, everything that we regard as existing, postulates consciousness."

He also confesses that "As a man who has devoted his whole life to the most clear headed science, to the study of matter, I can tell you as a result of my research about atoms this much: There is no matter as such. All matter originates and exists only by virtue of a force, which brings the particle of an atom to vibration and holds this most minute solar system of the atom together. We must assume behind this force the existence of a conscious and intelligent mind. This mind is the matrix of all matter." Likewise, Nobel quantum physicist Erwin Schrödinger believes that "consciousness cannot be accounted for in physical terms. For consciousness is absolutely fundamental. It cannot be accounted for in terms of anything else."

n short, the five senses are like a complicated puzzle. We cannot see the complete picture through studying various bodily systems, multisensory integration, or consciousness. We need to connect them to the Infinite Power and Knowledge to understand their ultimate reality. We should first recognize the interconnectivity between the five senses and the brain, then become conscious of how they are connected to the entire universe. The puzzle will only be complete when we make the connection between the interconnectivity of the senses, brain and universe with the Infinite Power and Wisdom of the Maker who they indicate so clearly.



"The Five Senses are like a complicated puzzle."

The Importance of Our Brain

hat is the importance of our brain? Designed as the control center of our body, our brain is vital for our physical survival. We have learned that there is so much more to our brain than meets the eye.

When human beings share ideas and thoughts with one another, they become part of each other's lives- they influence each other, shape each other's lives and establish connections. The interdependency of our species is essential for our survival here on earth. What about other species? Are we connected to them as well? How do human beings sustain themselves? Think about the many species of plants and animals here on earth without which we could not survive. Through our brain, we remain connected to our environment, to our internal selves and- most importantly- to our Maker.

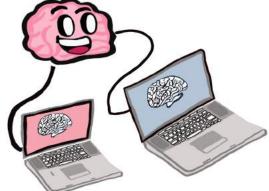
The Brain and the Multi-Sensory Integration

n reality, even though the brain is very important for our survival, it is not true control center of our body. Let us think about a kitchen and a cook. Just because all kinds of sophisticated dishes/meals are prepared in the kitchen, it cannot be assumed that the kitchen is the cook. Likewise, the brain is not an operator. Rather, it is an operation room through which the Infinite Power operates. Indeed, we might compare our brain to an extremely complex computer network that processes informationsignals it receives from the senses and body, and sends messages back to them.

Just as we need conscious operators to operate such a network, we need Infinite

Consciousness to run our brain so that we can receive incoming information from all our senses, correlate this information with stored data, make decisions and act. Indeed, when a decision is taken in our brain, it appears as if the brain knows how to behave in harmony with everything in the universe.

Our brain resembles an extremely complex computer network that processes information/ signals it receives from the senses and body.



Who is the Maker of Multisensory Integration

fter learning about our brain and five sense organs and reflecting on their importance, we inevitably ask ourselves the critical question, who is their Maker? Let us, again, consider all the possibilities.

Could our brain and sense organs have come together on their own even if they had free will? We know that the human brain and sense organs are made up of atoms and molecules. Do the atoms and molecules have intelligence of their own? Does the brain have intelligence of its own? Do they 'instinctively' know how to arrange themselves in such a way as to produce a human brain or any of our other organs for that matter? Could the random blowing of the wind,





which incidentally is also made up of atoms and molecules, have caused the atoms and molecules that make up the human brain and the five sense organs to come together? Could their existence have occurred randomly?

We have learned that man-made inventions such as computer processors, automatic street light systems, microphones, digital cameras, smoke detectors and artificial skin were all the products of various teams of experts who designed them after long years of arduous research while relying on the collective knowledge gathered by humanity over thousands of years. We learned that in order to build intelligent, man-made devices, we need teams of experts with knowledge, intelligence, will and power and we also need to possess the raw materials required to make them.



ow think of our amazing brain and the related remarkable five senses. They are embedded within the living human body wherein they all work in perfect harmony with all organs. Moreover, they are linked to the air that we breathe, the water that we drink, the nutrients that nourish us and the other multicellular and unicellular organisms that inhabit our magnificent planet. Clearly, the brain and the five senses (that are far more complex and functional than any man made device) can only be the creation of God, the Maker of the body as well as the whole universe it lives within; they are valuable and vital gifts from God, Most Merciful, Most Generous, All-Powerful, and All-Knowing.

Despite their exceptional composition, our sense organs individually and collectively could not produce their associated senses. They are themselves being made and in need of being sustained. Consider our physical eyes for instance; they are made of blind cells, molecules, and atoms. Moreover, human eyes can only function in a living body with a living healthy brain. That is, we see through our eyes, but neither our eyes, not our brain can be the source of our seeing. Only the Maker of the human body and the world it lives in, can sustain it in life and gift us with sight.

Indeed, our Maker has provided us with countless blessings, ranging from huge varieties of food to taste, pleasant scents to smell, incredible beauty to feast our eyes on, and a variety of nature's music for our ears. In fact, our merciful Maker is gifting us with His countless blessings here and now, and always. What is remarkable as well, is that our breathing is sustained right here and now and that is how we remain alive and enjoy His precious blessings, such as our five senses.. Everything belongs to Him, and to Him we will eventually return.





"Human Beings seek meaningful connections and friendships with other people because of the urge to share compassion and empathy."

mportantly, human beings have an innate need for meaning. We have been created with the desire to fulfil our needs. That is why we seek food to satisfy our hunger, and water to satisfy our thirst. We also seek meaningful connections and friendships with other people because we need to share compassion and empathy with fellow human beings. When our needs are not fulfilled, we feel a sense of lack and deficiency, but did you know that even this negative feeling has a beneficial purpose?

Let us consider a simple example. Think about a time when you really wanted to buy a special gadget, toy or video game. Let us say for example, that there was a special, limited-edition bike you really wanted. Your parents promised that if you work hard at school, get an A in Algebra, and finish your chores, they would buy you the bike at the end of the month. Excited, and all geared up for your special prize, you worked extra hard, achieved an excellent grade, and completed all your chores. Your parents were pleased with your performance and purchased the bike for you. You were so happy and excited, and you immediately took it out for a ride. The first week, you were very excited, and took the bike out for a ride every day, for hours at a time. The second week, your excitement began to wane off. By the third week, you took your bike out for a ride maybe two or three times. In reality, the joy of receiving your special gift trickles down, day after day until your bike gathers dust, and maybe even ends up rusting in your garage.

"Did you know that even a negative feeling has a beneficial purpose?"



ou can apply this example to every material object you ever desired in this life. Material desires serve the limited purpose of temporary satisfaction and comfort-after all, they are short-lived, just as this world of ours. A delicious meal, after serving its initial purpose of satisfying our hunger, ceases to provide pleasure for our taste buds after a few bites. That is, as far as our physical needs are concerned, food's main role is to nourish and sustain us. However, we often overeat our favorite foods because we expect joy from them. However, that joy and pleasure doesn't last very long, and we're left feeling unsatisfied and unfulfilled. The briefness of beautiful things saddens us. We experience a deep sense of lack and deficiency that leads us to ask deeper questions and seek answers.

We realize that we desire something which lasts forever. Upon reflection, we realize that the great variety of foods, their tastes and flavors, aromas, textures and colors cannot be merely for the sake of satisfying our physical needs. Indeed, before we even eat the food, we enjoy its appearance and aroma. This means that such a great variety of foods are not created merely to satisfy the body. They are created for us to understand the endless generosity and mercy of our Maker and Sustainer.

Indeed, our Maker, being the Most-Kind, made food flavorful so that we realize that He is our merciful Host in this world and forever. In this way, we may be saddened at the briefness of beautiful things, but rejoice at the constant renewal of the blessings. Thus, impermanence become meaningful as it indicates the permanent source of all goodness and blessings. If we don't acknowledge the Eternal Merciful Creator, then transience will transform meaningful things into purposelessness and meaninglessness.

" Food is c<mark>reated for us to</mark> understand the endless generosity and mercy of our Maker and Sustainer."

What is Our Purpose?

1. Remembrance is realizing that there is a Merciful and Generous Creator of the brain and five senses.

2. Reflection is contemplating our priceless, miraculous brain and five senses and appreciating them as gifts of our Creator's mercy.

3. Gratitude is being thankful to the Creator for bestowing upon us a brain that serves us so well through the process of integrating all the information gathered by the five senses.

his brings us to thinking about our purpose. If material things do not satisfy our desires on this Earth, then why are we here on Earth? Why were we created? We know that our Maker has designed our bodies with wisdom, knowledge, and power for a purpose. What is that purpose?

What does the Maker of our brain and five senses want from us? We think that the True Bestower of Bounties wants, in return for his countless gifts, three things. The first is remembrance, the second is reflection and the third is gratitude.

As human beings, we are completely powerless and dependent on our Maker to provide us with sustenance for our bodies and soul. It is a good thing for us to recognize our powerlessness and complete dependence on our Maker. It is evidence that He is our Merciful Sustainer and Generous Provider and that we are not alone like orphans in this vast world. Moreover, our powerlessness makes us truly appreciate our Maker and sincerely express our gratitude to Him.

How can we actively express our immense gratitude to our Maker? We can express gratitude by using our brain and five senses to serve our purpose. We can also remember that our bodies are a gift and treat them as such and use them in beneficial ways. We can improve our character, be grateful and offer thanks at the same time. e must now understand that as far as our physical existence is concerned, we are weak, needy and mortal living beings. We come to this world, then we depart. We get attached to our family, our friends, and even to our house and other material objects. But they too are impermanent and their passing breaks our heart. Everything in this world passes away. So how can we possibly find peace, joy, and meaning in this world of impermanence unless we find its permanent, eternal creator and Sustainer?

It is only through the light of belief that we may begin to see the beautiful attributes of our Maker beyond the material world. Through belief, we will recognize the signs of His loving mercy in His creation as well as the radiance of Divine love. We become enlightened with regards to humanity through servitude to God. Our world will be filled with Divine light. We will then acknowledge, : "My Compassionate Sustainer has made the world a house for me, the sun and moon lamps for



it, and the spring, a bunch of flowers for me, and summer, a table of bounties, and the animals, He has made my servants. And He has made plants the decorated furnishings of my house. He is the One who gave me this body with its extraordinary systems to utilize in the betterment of humanity and to improve myself morally."

Let us then ponder for a moment: What do you do when someone gives you a thoughtful gift? Do you toss it aside and neglect it? Or do you thank the giver of the gift and show your appreciation by treating the gift with care? The physical bodies that house our brain and five senses are very thoughtful and precious gifts from the Most-Generous and Most-Kind. In fact, every inch of our bodies has been designed with utmost care and thoughtfulness- with the purpose of sustaining us here on Earth in a way that we enjoy the experience. We have also been infused with the miracle of consciousness so that we may appreciate and wonder with awe at the beauty around us, so that we may connect to other beings with love, compassion and kindness, and so that we may contribute towards human advancement.

Isn't it astonishing that our five senses work in harmony with our brain, in such a miraculous way, to keep us informed of everything around us? Yet it is so easy to take them for granted when we do not the time to reflect and understand their reality. It is only when we understand and acknowledge the miraculous nature of our brain and five senses that we can truly appreciate their Maker and express our heartfelt gratitude to the Most-Magnificent, the Most-Merciful and the Most-Kind.

CONCLUDING LESSONS

Let us try to understand this excellent statement by the German philosopher Immanuel Kant (1724-1804):

"Two things fill our mind with ever new and increasing admiration and awe, the more often and steadily we reflect upon them: the starry heavens above me and the moral law within me. I do not seek or conjecture either of them as if they were veiled obscurities or extravagances beyond the horizon of my vision; I see them before me and connect them immediately with the consciousness of my existence."



hat Kant points to in this statement is expressed by another great scholar/thinker from the Muslim world, Abu Hamid al-Ghazali (1058-1111), as the "external horizon" (âfâq) and "internal universe" which is our inner world (anfus)- two great worlds to reflect upon and ponder in order to solve the puzzle of existence. One is the vast universe filled with innumerable beings; and the other is our body with all its mental and emotional states reflecting the same inexhaustible mind-boggling systems and operations mirroring the universe outside.

In this book, we have tried to reflect on both the inner and outer universes. We have examined the structure of our incredible brain, our nervous system and five sense organs along with all their associated functions. We have reached some important conclusions. What are they? What have we learned to acknowledge?

First, the amazing composition of five sense organs;

Second, the incredible work they appear to perform;

Third, by studying and reflecting on the way these organs are made and the works they perform, we understood that they are acting at the command and

under the control of the One who has infinite knowledge, wisdom, and power. How did we reach this conclusion? By realizing how the work performed requires tremendous knowledge and power, whereas our organs have none of these qualities and are themselves in need of being made and sustained in existence. Therefore, it is clear that they are the work of an infinitely knowing and powerful Maker who employs them in these wondrous ways to maintain our amazing brain and our five senses.



Fourth, we have understood how like all other beings, we are also completely dependent on our Creator for sustaining us in life, here and now. When we realize our powerlessness coupled with our endless needs, we appreciate the generosity and kindness of our Maker. We acknowledge his infinite power and knowledge and are grateful that we can ask him for help. This realization transforms into love for the Merciful, the Compassionate. It becomes clear that we have been blessed with such amazing faculties in order to know our Maker through testifying how all beings reflect his beautiful attributes and glorify him and bear witness to his infinite power, knowledge, wisdom, and mercy.

The more we know our Maker with his attributes, the more we love Him, and offer Him thanks and praise, and worship Him and ask Him for help. Then our powerlessness in fulfilling even our worldly needs, our helplessness in sustaining our breathing, or sight or hearing, let alone our longing for eternal joy will not cause us fear and anxiety anymore; because we have found the source of life, and hearing and sight, the eternal maker and Sustainer of all beings. Only then will our hearts find peace and rest.

Fifth, in order to perform our essential duties of knowing our Maker, thanking him and worshiping him, we need to first learn the language of the universe in order to understand the encoded messages from its Maker. Indeed, everything is created with many benefits and purposes. When we wonder about the meanings of their existence, we realize that they carry meaningful messages from their Maker in their language. The question is, 'how do we decipher those messages from beyond?' In other words, how do we decode this cosmic language?

o do so, we need to first understand the alphabet for this language, which happens to be connected to our own self. Sounds mysterious, doesn't it? This how it works: As we realize our total helplessness and neediness along with our infinite needs and desires, we will know that it is the Infinite Power and Mercy that is sustaining our life from moment to moment. Even though we seem to sustain our life through certain actions such as eating and drinking, in reality, we are completely dependent on our All-Powerful Maker since we do not even understand one out of millions of tasks involved in feeding our body. For instance, we just put food in our mouth, and then the food is swallowed and digested, then turned into vital nutrients and energy etc. We have no control on the process of feeding ourselves.





n fact, if we think deeply, we will realize that even our actions are created by our All-Powerful Maker. However, when we don't pay attention, it seems to us that we are the ones who are creating our actions. If we reflect on the nature of our actions, we can appreciate (from experience) what it takes to achieve work. For instance, we are acutely aware that it is only possible to cook a meal through our (limited) power and knowledge; we can certainly grasp that cooking a delicious meal requires a certain amount of intelligence, knowledge, wisdom and power. Using this experiential knowledge, we can then relate this to the fact that the ripening process of fruits is somehow similar to the cooking process in that it requires knowledge, wisdom and power. Except that in this case, the fruits are 'cooked' in a giant 'clay pot' such as an orchard using simple ingredients (nutrients), rainwater and the heat of the giant 'stove' that is the sun.



ust as our meals are cooked in the kitchen and not by the pot, our fruits are 'cooked' in nature, but not by nature. Moreover the cook of the fruits can only the one who controls the sun, the rain, the air, the soil, i.e. He can only be the Owner of the whole universe. This is how we testify with certainty, that the Creator of fruits, is also our Creator; he is also the Creator and Owner of the whole universe. This is what it means that the 'self' is the key to deciphering the cosmic language of all beings. We use our own experience to deduce the meanings of the amazing activities going on within our body such as our brain and five senses and those of the unceasing activities occurring in the world such as the growth of our food etc.

Sixth, once we learn the cosmic language, we will begin to see everything in the cosmos as meaningful signs and messages from the All-Powerful. The universe will become like an eloquent ever changing book of expressive speech. Indeed, everything is like a letter from the All-Powerful. However, those who do not know the cosmic language cannot read or understand the mighty book of the universe. For small children who do not know how to read, the most meaningful books have no meaning. Remember, as children, we were just interested in pictures because we could not read the text. As we learned how to read, we began enjoying the great stories and meaningful messages in our favorite books. All the seemingly fuzzy shapes and squiggles in those books transformed into meaningful expressions. Similarly, after we learn the cosmic language of beings, everything becomes a meaningful sign. We begin to understand that the Maker of the universe is speaking to us and making Himself known through His creative expressions.

Once we learn the cosmic language, we need to pay attention to recognize the meaning of everything. Think about the blurry words given to you when you try to fill out forms on the Internet. A security check tries to determine whether you are a human being or a robot. The website designers



know that it takes intelligence to read those indistinct scripts as meaningful signs. Similarly, events and apparent causes are like a blurry outer layer of the meaningful signs. We need to go deeper beyond this blurry layer to read the meaningful expressions. Just as the designers of websites want us to distinguish ourselves from robots by reading those fuzzy captcha texts, the Designer of the universe also wants us to read the meaningful messages in everything by removing the veil of causes, nature and chance. This is a simple test to prove that we are indeed true human beings.

Seventh, as we read the meaningful expressions in the universe, we will witness a unity in this great wealth of existence. We will see the unity behind multiplicity. We will understand the interconnectivity behind endless diversity. We will realize the interdependency among apparent self-sufficiency. Indeed, as we study the universe, we will learn that we are all connected to each other at micro and macro levels. For instance, at the micro level, an



atom is connected to its environment, its environment to the earth; and the earth to the solar system, the solar system to our galaxy, which is turn connected to its super galaxy system, which is connected to the whole universe. So even the smallest being cannot exist in isolation from the totality of things in the universe. They are all intricately connected with each other in such a harmonious and balanced way that a tiny disturbance can cause the collapse of the whole system. As a recent scientific experiment confirms, the Higgs field connects everything to each other. Similarly, our brain and five senses do not work in isolation. In the body, they are connected to other cells, tissues and organs. On Planet Earth, they are connected to many supporting interconnected systems. At the cosmic level, they are connected to the sun, stars, and entire galaxies. At the micro level, they are connected to every atom in the universe.

Eight, as we recognize the interconnectivity among everything in the universe, we will understand that nothing is simple or unimportant. Everything, and everyone will gain cosmic significance because they can become possible through the entire cosmos. You may think "I am nothing. What importance do I have that the universe should purposefully be made subject to me by All-Wise Creator?" However, although physically we are tiny beings in this vast universe, we have the potential to be the observant spectators of this majestic universe, and distinguishing readers of this ever-changing, miraculous book of the universe.



n short, this book is an attempt to derive five-dimensional knowledge from the observed phenomena by deciphering and reading the cosmic language of the brain and the five senses. In the first dimension, we gained pure scientific knowledge related to the topics. In the second dimension, we compared and contrasted our scientific knowledge with our experiential knowledge. In the third dimension, we engaged in critical thinking to question the appearance of causes, nature, and chance as the source of the observed phenomena and thus discover what lies beyond them. In the fourth dimension, we delved into the hidden reality and decoded the hidden messages in the observed phenomena. In the fifth dimension, we reflected on the value of the gifted senses and brain and understood how to respond to these gifts through appreciation and good utilization to nurture good character.

We hope that as we read the world around us through this multidimensional knowledge approach, we will realize the cosmic value of all things, including our existence and the countless blessings granted to us from moment to moment. Then, we will respond to the All-Merciful Maker with humility and gratitude. We will make use of scientific studies to discover the messages from our Merciful Creator and his guidance for us to live a more meaningful life and to become better human beings through building a better character. As we remove the blurry veil of causes, nature, and chance, we will discover the beautiful meanings in everything. Life will become a pleasant and exciting school. It is a school in which teaching is done through the use of the five senses. It is a school, where nothing that is taught is abstract. Everything is presented through actions. Indeed, the universe is such a school. We are learning everything through experience. We are given lessons through all life experiences. All lessons come from the All-Good One. Everything, other than our bad choices, is good- either directly or through its consequences. Therefore, we shall do our best to choose what is good for us and see goodness in what is chosen for us by the All-Good and All-Wise.

