The Human Nose

Let us take a journey into the amazing insight of the sense smelling along with its deep meaning and moral lessons.

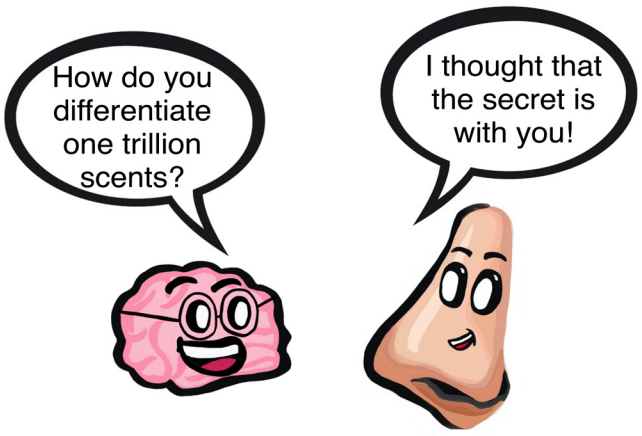
"Stop and smell the roses," is a familiar invitation. It is a call to slow down and enjoy life in the present moment. Scientific research shows that this is indeed sound advice for finding satisfaction. Staying present is good for the body, mind, memory and soul.

Of course, pleasant odors are not limited to roses. Just think about the sweet aroma of freshly baked cookies. Think about inhaling the crisp air of a pine forest or the smell of your favorite food. There are countless smells that enrich your daily life. In the past, scientists estimated the number of smells to be 10,000, but a recent study provided a dramatic correction by estimating the number to be closer to 1 trillion smells! You detect smells by inhaling air that contains odor molecules. Although it takes only seconds for you to identify a certain smell, in reality, the olfactory system is a very complex biological process. Let us now explore the olfactory system so that we may discover the connections between the incredible sense of smell and the deep moral meanings concealed within.

First Dimension : Analytical Thinking

SCIENTIFIC UNDERSTANDING OF THE HUMAN NOSE

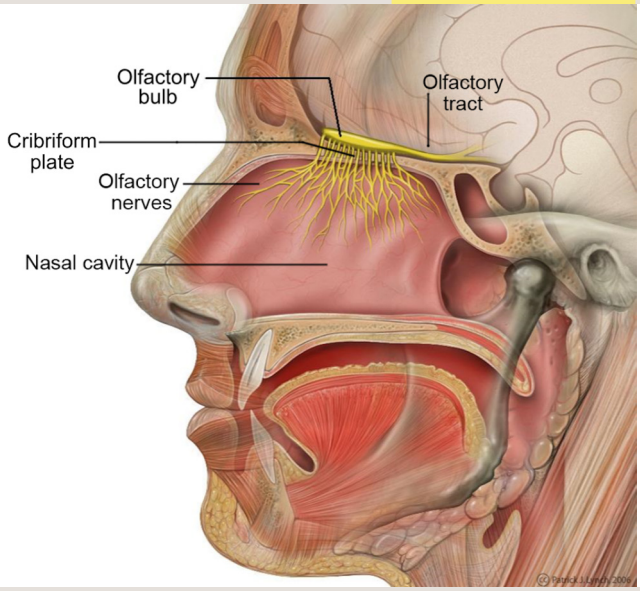
Your nose has numerous functions. The first of these is olfaction, which is the scientific term given to the sense of smell. Olfaction has two main purposes: safety and pleasure.



Before understanding the purposes of olfaction, consider the question below (the answer may surprise you).

Is your nose sufficient for smelling?
Do you know what is involved in the act of smelling?
Just like with seeing, and hearing, smelling is also connected to the brain.

In your nose, you have olfactory receptor neuron cells that are designed to capture smell signals and send them to the brain, which then processes these signals and identifies the smell. Each olfactory neuron has one odor receptor, which is stimulated by smell signals. Smell signals are microscopic molecules released by substances around us, such as freshly baked cookies or pine trees in a forest. When the neurons detect these molecules, they send signals to your brain. Then miraculously, the signal is processed in the brain and it is identified as a smell that we can feel. Note, how some physical matter is transformed into electrical signals, then into feelings! All this in is going on within us.



Interestingly, there are far more smells out there than we have receptors. So how can we distinguish between the great varieties of smells? Well, each molecule stimulates a unique combination of receptors that results in a unique signal representation in the brain. Then, each representation is registered in your brain and kept in your memory. This is how you can recognize smells when you encounter them again.

Safety and Identification

Your nose is also designed to help you keep safe from many harmful substances in your environment. For instance, spoiled food smells bad and you can smell it and stay away from it. Would you eat a meal that had an offending odour? Another example of a harmful substance is smoke. Your sense of smell helps you detect smoke before you even see a fire. The smell of smoke is a warning to keep you away. Would you willingly walk into a smoke-filled room? Your nose is designed to protect you from substances that are harmful to your body.

Did you know that some substances that the human nose cannot detect are potentially fatal? An example of this is carbon monoxide, an odorless, colourless gas that can cause headaches, dizziness and nausea followed by death if present in large amounts. From this example, we can realize how beneficial it is for us to be able to identify smells and distinguish them.

Pleasure

In addition to helping you stay safe, your sense of smell can also provide you pleasure. Microscopic molecules released by substances around us (like freshly cut grass for example) stimulate the receptor cells in our nose. So, your nose is also designed to detect smells that are pleasurable. Think about the smell of fresh strawberries and oranges from the kitchen or the flowery scent of freshly washed sheets. A crying newborn baby's sense of smell is so well developed when she is born that she immediately calms down when placed in the arms of her mother. A baby recognizes her mother from her particular smell.

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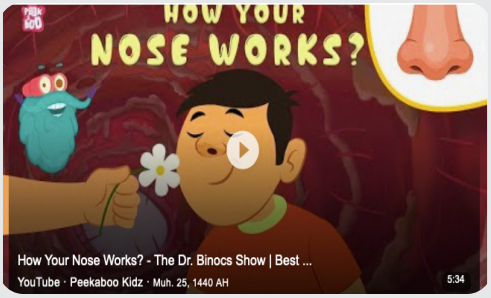

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Amazing Scientific Facts

-The Human Nose-

1.

Do you know that during sneezing, irritants are expelled at speeds up to 160 km per hour?

2.

Do you know that each individual human being has a unique scent (smell print)?

3.

Do you know that the best air filter in this world is the human nose, which blocks germs and dust?

4.

Do you know that mucus produced by the nose contains white blood cells and enzymes responsible for fighting infections?

How do we Smell?

The nose moisturizes and humdifies the air we breathe in so that our lungs and throat are not hurt with dry air.

How Do we Smell?

What's your favorite food? Did you know that without our noses we wouldn't be able to enjoy our food? When we chew our food, air flows from our mouth to the back of our throat, and then to the nose. As the nose detects the smell, signals are sent to the brain and we feel it as 'taste.' In other words, we taste not only with the mouth but also with the nose.

In fact, we smell through two pathways. The first pathway is through our nostrils. When we inhale air, it enters through our nostrils into our nose. The second pathway is through a canal that connects to the internal part of the nose, which is above the roof of the mouth. When we chew food, microscopic molecules are released. Then, through the second canal, they reach the olfactory receptors, which are specialized cells found in the mucus membrane of our nose, and which act like a scent expert in analyzing the particles released. Then, the outcome of this analysis is sent to the brain via the **olfactory nerve**. It is through the olfactory sensory receptors that we distinguish familiar flavors such as chocolate, cookies or strawberries. If we couldn't smell, we wouldn't be able to enjoy the various flavors. Food would taste rather bland. For example, when we have a cold and we have a congested nose, the canal is blocked and therefore odors cannot reach the olfactory receptors. In that case, we can't smell the food well and so we are unable to taste and enjoy flavor well. Yes, as you may have already experienced, your senses of smell and taste are closely connected.

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In addition to its role in olfaction, the nose is also designed to be:

A Passageway

Ever notice how uncomfortable you feel whenever you have a cold? This is because your nose is the main pathway for breathing. The air you breathe is first processed through your nose.

An Air Purifier

Your nose is a miraculous filter lined with tiny hair-like structures called cilia. These tiny hairs or cilia have many functions. One of them is to clean the air you breathe because it contains many pollutants that are potentially harmful to your lungs and to your body in general. In order to filter the air and purify it, the cilia in your nose produce mucus, in which dust, viruses, bacteria and other pollutants found in the air are trapped. The mucus then passes through the throat and then to the stomach, which is designed to be much better at dealing with pollutants than the lungs.

The nose essentially works like a vacuum cleaner, that traps dirt in its brush-lined vents and sends it along a long tube to an enclosed sac. Every day the cilia within your nose filter the air from billions of particles, stopping them from entering your delicate lungs. In the lungs, the oxygen is pumped into your bloodstream and circulated through your body. Finally, when you breathe out (exhale) through you nose and mouth, air leaves your body together with toxic waste products such as carbon dioxide. You can see now how this function of filtering the air is very important since we need clean oxygen-rich air to remain alive and healthy.

A Temperature Regulator

The nose is also designed to regulate the temperature of the air we breathe. As air passes through the nose, it is warmed up or cooled down – depending on the temperature outside- so that it reaches body temperature before it enters the lungs. As a result, the throat and lungs tissues can tolerate the air better. Did you ever notice how you sometimes get a runny nose when you walk into a cold room? This effect is related to additional mucus being released in the nose when it is exposed to cold air. The mucus that is produced warms and moisturises the incoming cold air so that it does not damage your nasal passages and lungs.

A Humidifier

The nose moisturizes and humidifies the air we breathe in so that our lungs and throat are not hurt with dry air. Have you ever felt your throat dry when you breathe through your mouth for a long time? That's because the air you inhaled didn't pass through the nose and therefore it didn't get humidified.

In short, your nose behaves like a multi-skilled worker by detecting smells and distinguishing between, regulating the temperature of the inhaled air as well as purifying and moisturizing it. These multiple tasks help you maintain a healthy quality of life.

Second Dimension : Analogical Thinking

HUMAN NOSE VS. E-NOSE

Let us compare our nose to a man-made smoke detector.

Due to its physical complexity and multiple functions, it is difficult to find a single man-made device that completely mimics the human nose. That being said, the closest modern imitation of a human nose is a chemical detector that works by identifying specific odors and flavors. The successful imitation of the human sense of smell began with the invention of smoke detectors in the early 20th Century followed by chemical detectors and electronic sensors.

Smoke alarms are designed to be very loud when they go off so as to warn people to exit the vicinity of a fire and leave to a safer place. When was the last time you heard a smoke alarm? Have you ever wondered how it works? Smoke is made of small particles that attach themselves to surfaces. This is why if you happen to be in a room where someone is smoking, the smell 'sticks' to your clothes. This property of smoke to stick to surfaces is the same mechanism most smoke detectors are based on. Smoke detectors are designed with small lights that activate an alarm when blocked by smoke particles.

What about chemical detectors? How do they work?

Remember what you learned about carbon monoxide? It can be fatal, i.e. it can kill if present in large amounts. Yet, carbon monoxide (CO) is both odourless and colourless so we cannot detect it through smell. That is why researchers decided to design a detector to alert us to CO. This detector can activate an alarm in the presence of certain levels of his toxic gas. An example of a carbon monoxide detector is a Metal Oxide Semiconductor (or MOS). An MOS has a sensitive film made of tin or tungsten oxide, which reacts with CO in its environment. When the sensitive film reacts with a predetermined amount of this toxic gas, it triggers an alarm.

Let us now compare the working of our nose and that of smoke detectors and chemical detectors.

What about the electronic nose?

The electronic nose cannot completely replace your nose. It simply works like a nose by detecting specific odors and flavors.

An electronic nose (e-nose) consists of three parts: a sampling delivery system, a chemical detection (sensing) system, and a computing system (data analyzing system). The sampling system captures samples of molecules of a given substance. Then, similar to neural receptors in the human nose, the chemical detectors react to the captured molecules and produce signals. After that, the signals from those sensors are sent to a microprocessor (or computer) to be recorded and analyzed. The electronic sensors mimic the olfactory limbic system while the computer acts like the brain.

The signals are interpreted as odors using special pattern recognition software. Of course, like the human brain, if the odor is already defined to the system, it can be identified. However, unlike the human sense of smell, it does not come with any emotion, pleasure or pain. The odor is identified using pattern detection, not by recognition (as would occur in a human body). For example, when we smell a rose, odor molecules stimulate numerous receptors in the nose. This will ignite limbic olfactory neurons

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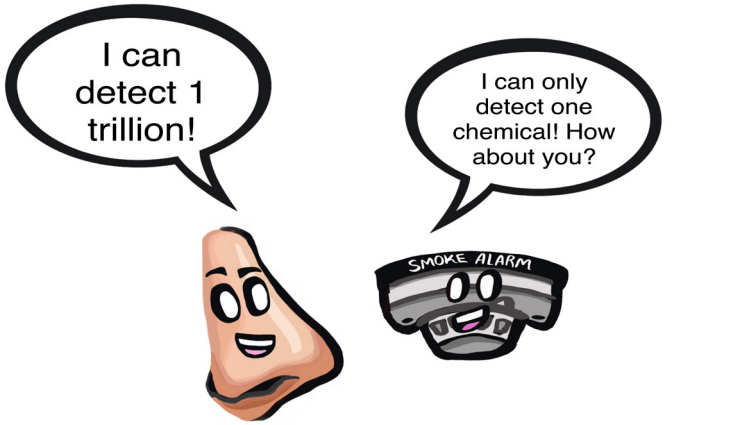

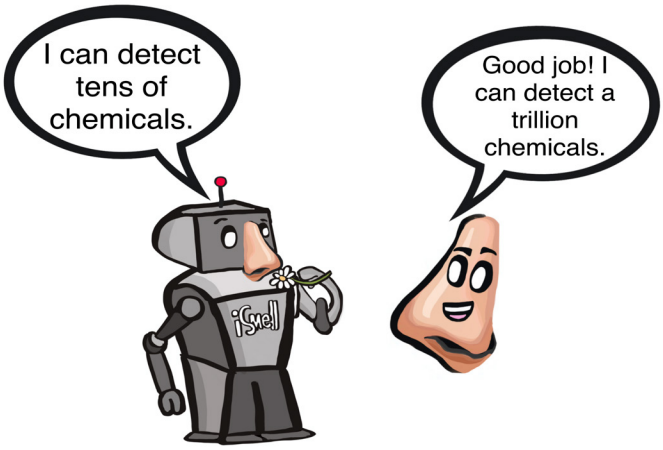

to send electrical signals to the brain. Those signals are then processed in a certain part of the brain as scents which are then associated with certain emotions. If we never smelled a rose before, we would not recognize it. We would first need to add its unique scent to our repertoire. Then, when we smell it again, we can remember it. Similarly, odors have to be defined to the e-nose software in order identify their source properly.

Unlike our noses, whose olfactory receptors are designed to detect a wide variety of smells in varying amounts (up to 1,000,000,000,000 different smells!), an e-nose or chemical detector is specific to only one type of chemical at a time. Although some modern versions of chemical detectors have been designed to detect more than one type of chemical, the scope of chemicals they can detect is still very limited. Again, the e-nose is not a substitute for the human nose. It is not made to help those who lost the sense of smell. Rather, it is used for various purposes such as food safety, emergency response, military services, and environmental monitoring. For instance, e-noses are currently being used to detect the freshness of food including vegetables, fish, and meat.

Despite the collective work of many researchers over the last few decades, the e-nose is still far from competing with the human nose. For instance, unlike chemical detectors or the e-nose, the human nose's sense of smell is linked to a higher functioning organ that can process and link smells to time or place through the brain. Thus, if you smell something burning in the kitchen, your brain is designed to process the smell so that you can recognize it as a burnt smell. Once you receive this information, you usually take action accordingly if you think there is potential danger.

Ever noticed how a particular scent can remind you of a certain time in your life, or even a physical location? Does the smell of homemade cake remind you of your mom, or of other special days, like birthdays? A whiff of lavender for example might remind you of your grandmother, whereas the scent of a particular brand of sunscreen might elicit memories of a family vacation you took as a child. No man-made device can possibly compete with the sophistication of your olfactory system that is elaborately linked to both time and place.

In conclusion, the sense of smell is a highly complex, biological process. Our sense of smell is so sophisticated that it is impossible to comprehend, let alone duplicate.

Third Dimension :
Critical Thinking

- *How can this well-integrated system develop by itself?*
- *Do you think it's possible that it can be made by someone without consciousness?*
- *How about someone with consciousness, but without knowledge?*
- *How about someone with knowledge, but without power?*
- *If you were born without a nose, would you be able to make one for yourself?*
- *How about scientists and engineers, could they make a nose for you?*

EXPLORING THE MAKER OF THE HUMAN NOSE

Let us first find out how the electronic nose was invented. This amazing device along with other chemical sensors did not emerge by accident. They did not evolve by into existence on their own.. As a matter of fact, the story began with the invention of a simple chemical detector, known as the smoke sensor in 1939. Relying on the accumulated knowledge of thousands of people and using analytical and critical thinking, Ernst Meili developed an ionization chamber device to detect combustible gases in mines. His main contribution was the invention of a cold-cathode tube designed to amplify a small electronic signal to a sufficient level to activate an alarm.

The detector he invented was composed of raw materials including an alarm horn, a circuit board, a sensing chamber and poly-styrene plastic. It took a few more decades to come up with an advanced chemical detector like the e-nose. The very first protypes emerged in the market in 1993. Since then, thousands of researchers have been working to enhance the device. Obviously, it would not have been possible to invent the e-nose without advancement in electronics and computer sciences. It

would be a great insult to the scientists who invented this device, if we claimed that raw materials came together through random forces and formed a detector such as the e-nose.

The detector could not create itself either because its material components - the atoms and molecules- and software -zeros and ones- do not have a mind with which they can decide to come together on their own. Based on our observations as well as experiential knowledge, it is clear that the formation of the e-nose requires substantial knowledge of the human nose, computer programing, raw materials, know-how of the device, and the power to arrange the raw materials and develop the software.

Now, let us reflect on your nose, which is capable of detecting one trillion smells. Think about how a nose can be made. First, whatever or whoever makes a nose must also know what

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an odor is in order to design an organ that detects odors. Remember- our nose and the odors in our environment are related to each other. How does our nose recognize the chemical molecules that cause smell? So, from a holistic perspective, it is reasonable to conclude that the One who creates human beings with a nose is the same One who creates the human brain and odors. He makes the nose work in connection with the brain and designs this nose to recognize the chemical molecules as smell. He knows and controls both the chemicals and the olfactory receptors that detect them so that they may work in unity.

This is the most reasonable conclusion. Other alternative explanations are illogical. They simply don't make sense. Surely, how else can this well-integrated system develop by itself? Do you think it's possible that it can be made by someone without consciousness? How about someone with

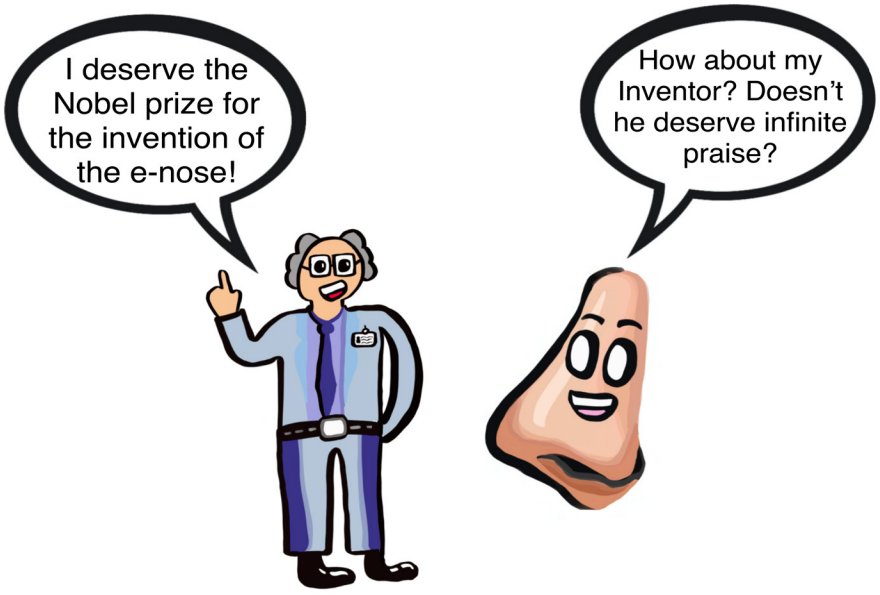
consciousness, but without knowledge? How about someone with knowledge, but without power? If you were born without a nose, would you be able to make one for yourself? What about scientists and engineers? Could they make one for you? Indeed, despite the accumulated knowledge of thousands of years, we are still far from coming up with a duplicate of the human nose. Although we have unveiled the apparent mechanism behind our sense of smell, we haven't yet understood its actual mechanism.

It seems like certain specialized cells detect odor molecules and inform the brain. However, we do not know how those cells have gained this ability. We do not know how the brain distinguishes smells from electrical signals. It is truly amazing to be able to smell a trillion different smells through a piece of flesh and cartilage. Scientists are still working to solve the mystery behind the functioning of the sense of smell.

Indeed, one might argue that all scientific discoveries about the sense of smell combined are simply the tip of the iceberg. We still lack knowledge about the actual process.

Given our modern scientific understanding, we could argue that smell itself is non-physical; it is an emergent property. Smell owes its existence to the existence of a smeller. Without smelling noses and processing brains, there would be no such thing as 'smell'. Consider the different smells of objects- the objects are all made of the same atoms and molecules, but these atoms and molecules are simply arranged differently to result in different 'smells'.. Just like a textbook, you rearrange the positions of the words in a sentence, and the meaning of a sentence changes. This is because the words are not the source of meaning but are the means or tools to express meaning. Similarly, the smell of an object cannot be attributed to the arrangement of its atoms.

If you were born without a nose, would you be able to make one for yourself?



If intelligent and knowledgeable scientists could not even duplicate the already existing human nose, it does not make sense to believe that the nose is the work of unconscious cells or inanimate molecules and atoms. If we acknowledge the inventor of a simple detector that detects only a single substance, how can we deny the Creator of a detector that can detect a trillion different smells?

Now, we know that the human nose operates within a conscious human being. This means, that all smells are not only detected, but also identified as pleasant or disagreeable; they're either appreciated or disliked. They can even trigger nostalgic feelings related to memories that are associated with certain scents. As you can see, the human nose- or any living being nose for that matter- is far above any comparison with any man-made detector. Given the fact that the human nose is zillions of times more complex, intricate and functional than any man-made detector, we must acknowledge that the Maker of the human nose is also infinitely more knowledgeable and powerful.

As you have already learned, with our well-functioning nose, we are repelled from harmful food and attracted to delicious ones. Our life experience is greatly enriched through our sense of smell. We know fruits and vegetables not only through their taste, but also through their unique odours. We enjoy beautiful flower gardens not just through their visual beauty, but also through their pleasant fragrances. Indeed, studies indicate that our memory is largely driven by smells. We do not just record images. We also remember the odours associated with these images.

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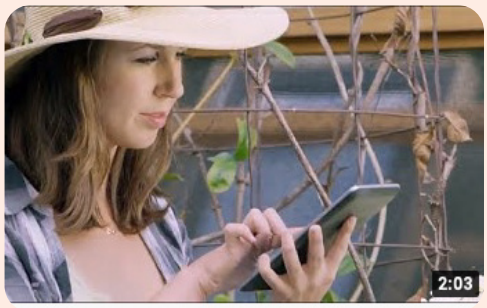

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Can you search Google with your nose? Why not? Watch "Google Nose" to find out how.

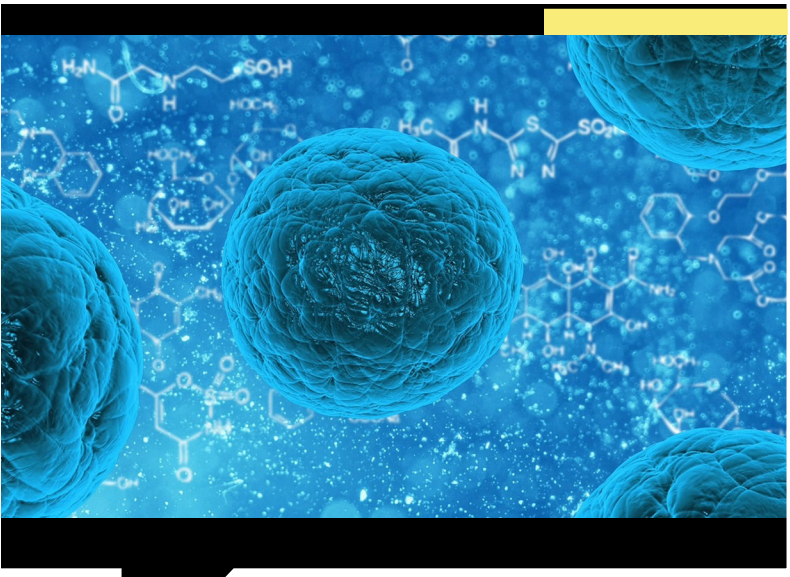
Fourth Dimension : Meditative Thinking

REFLECTING ON THE ATTRIBUTES OF THE MAKER

Now that we have concluded that there must be a Wise Maker of the nose, how can we know who the Maker is? What can we learn about the Maker of the nose by learning how it functions? Let us try to understand how our sense of smell is connected to the world around us.

Let us first consider the fact that everything in our environment, all matter, living and non-living, is made up of unique patterns of atoms and molecules. This includes odours. Yes, the odours of objects in our environment, are also made up of matter in the form of unique patterns of atoms and molecules.

What is more, your nose, with which you smell, is also made up of a unique pattern of atoms and molecules. However, your nose is designed to analyse certain odours whereas other objects are designed to carry odours. So, we have a unique pattern of atoms and molecules that 'smell' and other unique patterns of atoms and molecules in the form of certain smells. As to the process of 'smelling', it occurs when information about a specific smell is sent to your brain via the olfactory nerve. Then in your brain (which is also made up of a unique pattern of atoms and molecules) each smell is identified with the object that it represents. How does your brain identify what object that smell represents based on the information it receives? Or does it? Before answering these questions, let us remember that, like everything else, the brain itself is made up of atoms and molecules.



Moreover, unless it is in a living human body, the brain is mere, inanimate matter. It is not an operant power; it cannot operate itself. The process of smelling involves understanding, feelings, and the recall of memories- all functions that exceed the abilities of the brain and nose.

To clarify the situation, let's think of a TV. What's going on when you watch your favourite program on TV? The moving images are made by a series of images that are played quickly one after the other, so they appear to be moving. You may also wonder where those images come from. They are sent to your house through satellites that receive signals from the broadcast station and then send them to earth. Then your TV device receives those signals either through an antenna or an underground cable. Now you may wonder, how can images travel through the air and through cables? This is possible because TV programs are coded into digital information that is converted into images once it reaches your TV. TV screens are actually made up of a grid of dots that we see as images because amazingly, our brains are designed to process theses dots as images.

Now, think about this point: you watch your programs on TV. But can we say that the TV produces the programs? Certainly not; the TV is clearly only a platform that receives signals.

Think of the brain now which is also a platform. Moreover, it is the platform to very meaningful activities that require consciousness, knowledge, wisdom, purpose and power- much greater than that required to make a TV and broadcasted programs. Would it make sense to claim that the brain itself could possess any of these qualities? Could it ever be possible that all these purposeful, very crucial activities that are connected to our environment in so many intricate and complicated ways could be the work of the brain, a piece

"The process of smelling involves understanding, feelings, and the recall of memories, which exceed the ability of the brain and nose."

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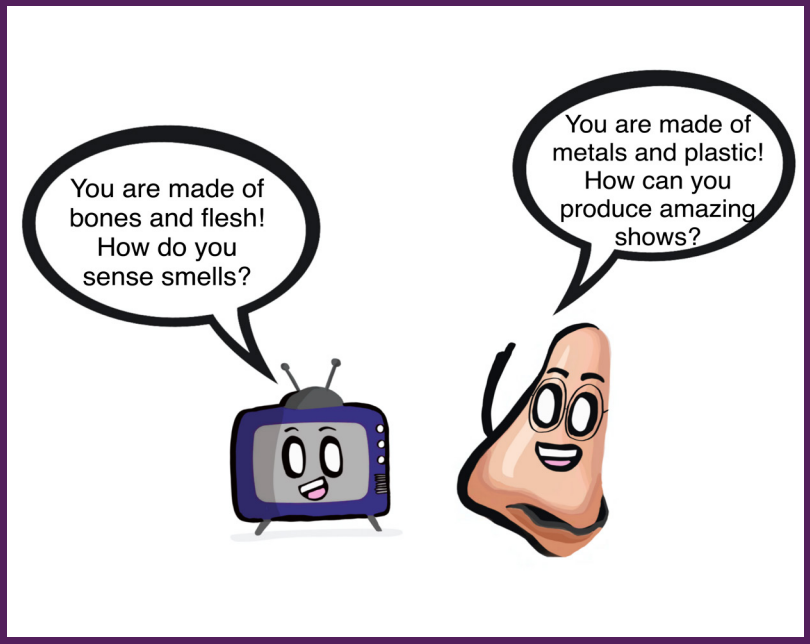

flesh within our bodies? Isn't it more reasonable to conclude from these activities that they are the result of a higher consciousness that allows you to understand what specific patterns of atoms and molecules represent?

Think of yourself. You are a conscious being, yet you have no control over your own breathing, seeing, or sense of smell. How can a part in your body, like the brain, achieve what you cannot?

What is going on when you smell something good which reminds you of good memories, making you smile and feel happy? How are your immaterial memories- the emotional meanings- and the feeling of happiness related to the physical brain?

In the field of artificial intelligence (AI), scientists focus on studying the human brain in order to imitate some of its functions. Hence, if for instance you stub your toe, they will tell you that some nerve fibres shot a message to your spinal cord and sent neurotransmitters to your brain. But they cannot tell you why you felt pain. You have to be conscious in order to feel the pain; your brain is the tool that detects pain.

You may think 'But without the brain, we wouldn't be able to smell anything.' This is true. But this also applies to your nose and the other components of the olfactory system. All the parts involved in the process of smelling need to be working properly for you to be able to smell. However, does that mean that they are responsible for the act of smelling and deriving meaning from smells?

Let us now consider a simple example. Think of the light in your room. You turn the switch on and there it is. Is it the switch that produces light? Or could it be the bulb? After all, without the bulb, there is no light. For there to be light in your room, there is a need for an electrical system to be installed, and that is much more than a bunch of wires. It is a system that is designed to deliver power to your home in an efficient and safe way. The power is produced outside your home. That is why the electrical system in your home needs to be connected to a power plant where electricity is generated.

Have you seen electricity poles in the streets? The poles connect your house to the power plant through a main line; but they can also be buried underground (and thus not visible). Then of course, there are also separate wiring circuits to all the rooms in the house, in addition to outlets and switches.

You see, the switch and the bulb are only parts of a system that is connected to the outside world. This system is part of a bigger system out there. It is planned, designed, and installed accordingly. When we observe how the switch, the bulb and the wires work together as a whole, we can conclude that they are parts of a well-ordered system.

Now, your nose and your brain are also parts of your living body. And they are tremendously more complex and more sophisticated than any man-made system. It is obvious that they are being made to cooperate with each other in an orderly, wise, and beneficial manner. That is, they are being made altogether.

This synchrony and mutual understanding between atoms and molecules, this shared common language, where does it come from? What are the roles of the atoms

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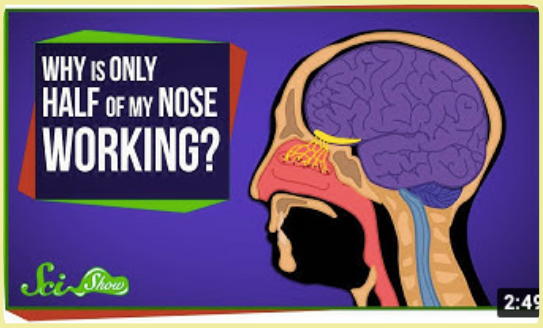

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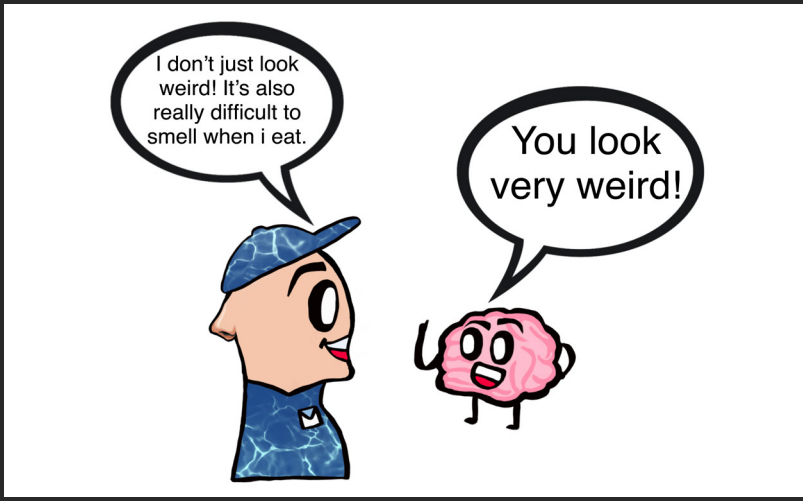
"Your nose and your brain are tremendously more complex and sophisticated than any man-made system."



"The make of our nose should have infinite knowledge and power."

and molecules that make up your nose and brain when you recognize a particular pattern of atoms or molecules? Who gives 'meaning' to patterns of atoms and molecules? Do they have a mind of their own? Or are they simply a bunch of chaotic particles without purpose or meaning? How do the cellular components of the nose know about the existence of odor molecules? How do they collaborate with molecules in the air to transmit odor molecules?

All these orderly and fine-tuned activities indicate a source of the synchrony and universal language that links living and non-living matter. It is evident that they are all acting at the will and command of a Maker, who has the knowledge and power to control them all so that they can act with such perfect order and harmony; a Maker who knows human desires and needs, and who knows how to make a nose that is connected to the air, the brain and the universe. This Maker must be kind enough to grant such an amazing sense of smell to human beings to enrich their lives by allowing them to experience a trillion different smells.

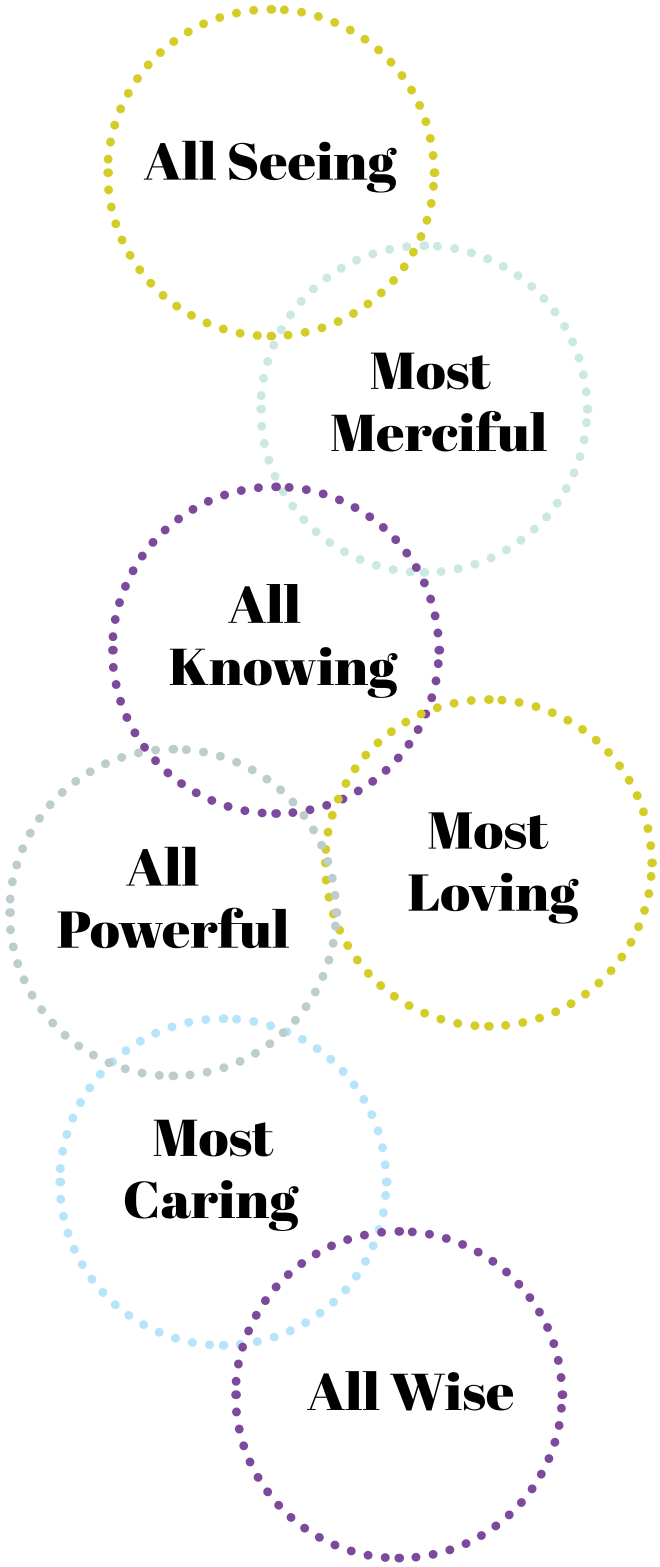
It is evident that the Maker of our nose is also the Maker of our bodies. A nose does not work in isolation. It works within a living body. It is connected to extremely delicate systems in the body. Our body does not live in isolation, either. It depends on thousands of well-functioning systems around the world. For instance, our physical body depends on an atmosphere with a sufficient amount of oxygen. It depends on drinking water. It depends on plants and animals. It depends on the sun. It depends on gravity. Indeed, it depends on the entire universe. Thus, the Maker of our bodies is also the Maker of the world around us. The Maker of our nose can only be the Giver of life. The Maker of our nose can only be the Maker of the entire universe.

The Bestower of our sense of smell must have the wisdom, ability and power to create, sustain and control the entire universe. Indeed, the Maker of our noses must have infinite knowledge and power. He

must be very wise because the nose is created with many functions and placed in the right place in the body to fulfill its functions in the most efficient manner. Imagine if our nose was placed on the back of our head instead of in its current place. It would have been less functional. We would have to take food to our nose first before taking it to our mouth. The location of the nose is perfect for the process of coordinating the tasks of smell and taste between the nose and the mouth. Remember that your sense of smell also helps you taste food. Try tasting food while you pinch your nose. It doesn't taste as good, does it?

The Maker of our nose must be very kind and generous in giving us such a precious gift at no charge. Indeed, since no power can be above the Infinite Power, He could not be forced to give us our sense of smell. Thus, He creates noses for living beings purely out of His mercy, just as He creates all the things we need for life. He must be very wise because He uses an extremely elegant system to allow us to capture, analyse and determine smells in our environment. He must be All-Loving because He creates beautiful flowers not just for us to see, but also to smell. He adds pleasant smells to delicious fruit and vegetables. He uses unpleasant odours to warn us against what is harmful to our body. He grants us countless opportunities to experience His kindness and mercy through our sense of smell.

In short, our noses speak about their Maker whom we now recognize as All-Loving, All-Seeing, All-Knowing, All-Powerful, All-Wise, Most-Merciful, Most-Caring, and Most-Kind.

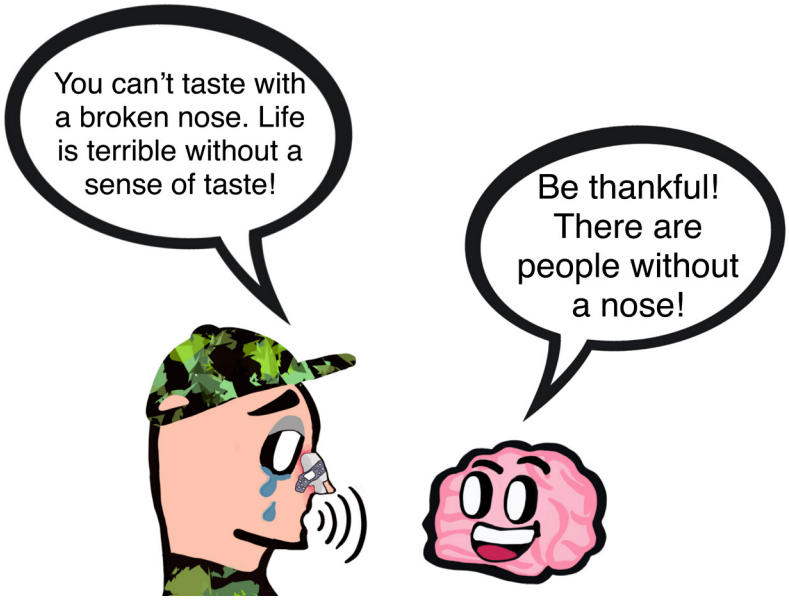


Fifth Dimension : Moral Thinking

RESPONDING WITH BETTER CHARACTER

Our Maker created our nose and olfactory system with such brilliance and wisdom thereby connecting us to other living organisms and non-living objects in our environment. Let us consider what it would be like to live without a sense of smell. Reflect on the reasons why the ability to smell is important. What if you were born without a nose? It would affect your looks but more importantly, it would affect your health. Think about how you would be restricted to breathing out of your mouth. How uncomfortable would that be? Based on what you learned so far about the many functions of the nose, can you think how this would affect your life? Additionally, you would not be able to differentiate between beautiful scents and hazardous ones. Your safety would be jeopardised.

Most of us take our sense of smell for granted. However, losing our sense of smell, a condition called anosmia, results in a poorer quality of life. Since our sense of smell is tied to our ability to taste, anosmia would result in the loss of ability to taste food and a poorer appetite. Think of the blessing of your sense of smell and taste the next time you sit down to eat a delicious meal. Let's read the inspiring story of Larry Lanounette to better appreciate the sense of smell:



STORY TIME

Larry Lanouette is a man who suffered from anosmia as a side effect of his chemotherapy, or cancer treatment medications. As a result of losing his sense of smell, Larry's sense of taste was also affected and Larry lost his sense of pleasure in eating. He would try to recall what food was supposed to taste like to make the act of eating more enjoyable. He had no preference for any particular food because in his experience, all food tasted the same. He also lost the ability to determine whether a carton of milk had spoiled.

Larry missed the smell of the outdoors the most, the smell of fresh air and flowers. Thankfully, Larry regained his sense of smell after his cancer medications wore off and now he appreciates his sense of smell a lot more than before his experience with anosmia. He says his sense of smell is now heightened and he can appreciate all the individual smells and flavors of food a lot more than before.

Our sense of smell brings us joy. Think of your favorite smell in the world. Is it your mother's baked bread? Freshly cut grass or a beautiful perfume? Or is it the scent of the ocean's salty mist carried by the breeze?

There are many reasons to be grateful for the blessing of experiencing the sense of smell with our nose. Think about how we obtained our olfactory system. How much did we pay for it? Of course, no one can purchase a functioning nose. Even if all the scientists in the world combined their knowledge together, they would not be able to recreate the human nose. If scientists succeed in making one- it would surely cost a fortune to buy. The One who created you blessed you with a healthy olfactory system to experience the wonderful scents in the world and to protect yourself from dangers that may come from your environment. Your nose was made especially for you by the Most-Generous and the Most-Merciful with love, compassion and generosity.

You were given your precious nose as a gift. The One who created you gave you a nose to experience the scents and smells around you and to breathe in the oxygen He created in the process of photosynthesis. He is the One who makes your nose filter out solid particles from the air to protect the delicate tissues of your respiratory system. He is the One who makes your nose regulate the temperature of the air you breathe and moisturize it to prevent the drying out of your lungs.

How can we express our gratitude for and appreciation of our sense of smell?

The Maker of the nose does not need payment since everything in the universe belongs to Him. But we can express our gratitude through thanking Him with our words and respecting His gifts by using them to do good deeds. We also need to be aware that the One who grants us a nose is its actual owner. If we owned our nose completely then we would be able to control it and cure it of any malfunctioning or disease. Therefore, we need to always be grateful and mindful of our generous Maker, who creates and sustains our nose and our whole body. We can demonstrate gratitude by using our nose in conformity with the purpose of its creation.

In conclusion, Our Wise Maker has given us the remarkable ability to seek life's many blessings, which include experiencing beautiful scents and smells. Our Wise Maker has given us the means of enjoying these blessings through the use of our senses. We constantly receive His valuable Divine gifts. Shouldn't we then be always mindful of Him? When we remain mindful of our All-Wise and Most-Generous Maker, the pleasant scents we enjoy will remind us of Him and of His kindness towards us. And the more we appreciate the pleasant scents and tastes, the more we will thank Him wholeheartedly for the precious gift of smell and for all the pleasant memories associated with such beautiful experiences. We will appreciate His kindness and love and pray that we can enjoy His blessings for as long as He is pleased with us.

1

Remembrance is realizing that there is a Creator of the nose and remembering Him.

2

Reflection is thinking of our priceless, miraculous nose as a gift of our Creator's mercy.

3

Gratitude is being thankful to the Creator for granting us a healthy, functional nose.

YOUTUBE CORNER

https://youtu.be/mFm3yA1nslE

TEST YOUR KNOWLEDGE

I.UNDERSTANDING SCIENCE TERMS

Complete the following sentences with a word or words from the Science Terms that will make the sentence correct.

Cilia *Olfactory Receptors* *Olfactory Nerve* *Brain*

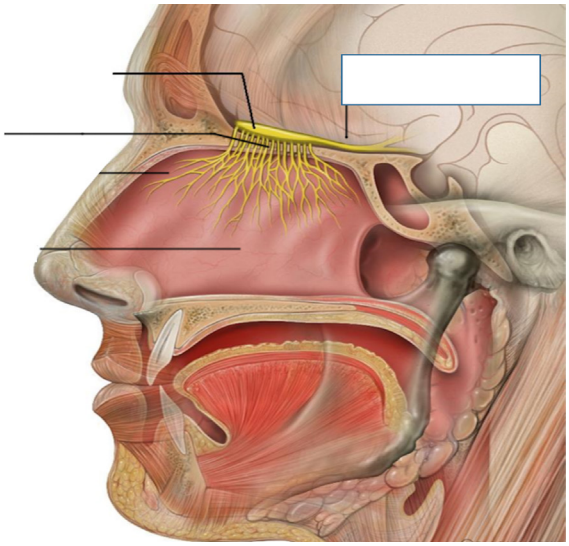
1. The _____ is designed to process the scents that you smell.

2. _____ are designed to analyse the components of air breathed in through our nose.

3. Information about a particular smell is sent to the brain via the _____.

4. _____ are mucus-producing hair-like structures that are designed to trap dust, viruses, bacteria and other pollutants found in the air.

Label the following diagram:



II.CHECKING FACTS

Determine whether each of the following is true or false.

1. The nose acts like an air purifier.
2. The nose emerged by chance through the random coming together of atoms and molecules.
3. The nose is responsible for balance.
4. Our nose is capable of detecting ten billion smells.
5. The nose works like a great chemical detector.

III. UNDERSTANDING CONCEPTS

Write a short answer for each question or statement.

1. What is the intended function of the cilia?

_____
_____

2. What is the intended function of our olfactory nerve?

_____
_____

3. List two things which make our nose superior to a chemical detector?

_____
_____

4. Can you experience if your olfactory system is faulty? Why or why not?

_____
_____
_____

5. List two things we learn about the Maker of the nose as we study our sense of smell.

_____
_____
_____

6. Discuss the connection between the nose and the sense of taste.

_____
_____

IV.APPLYING CONCEPTS

Write a paragraph to answer each question.

1. Why do you think the ability to smell is a precious gift? Describe two things which make you appreciate the value of this gift.

2. The One who creates our nose has to be the Creator of the universe. Why?

3. How can you show your gratitude to the One who granted you the gift of smell?

4. What have we learned about the attributes of the Maker of the human nose?

5. Discuss two moral lessons we can learn from studying the sense of smell.

V. THINK-THANK GAME

In this "think-thank" game, we want you to think about the nose and give thanks to their Maker. We also call it the "play to praise" game. The goal of this game is to think of at least five things about the nose that you are thankful for.

Number of players:
At least two.

Directions:

Player 1 repeats an appreciation phrase loudly and quickly. Player 2 responds, without pausing, with something to be thankful for. This is repeated five times.

To win:
Player 2 needs to respond five times (without pausing) with different things about the nose to be thankful for in order to win the game.

Here is an example of two rounds of this game:

1. Player 1 repeats the appreciation phrase loudly and quickly. For example: "Thanks to the Maker of the nose."

2. Player 2 responds, without pausing, with something about the eyes to be thankful for. For example: "For making the tiny cells recognize trillions of different smells."

3. Player 1 repeats the appreciation phrase again loudly and quickly. For example: "Thanks to the Maker of the nose!"

4. Player 2 responds, without pausing, with another thing about the eyes to be thankful for. For example: "For making the nose help us taste better!"

This should be continued for another three rounds until Player 2 wins or loses.