

AGAINST SENSES

The senses as an obscurance to our experience

ABSTRACT

The validity of the senses we use to experience the cosmos is something we take for granted. The majority of the people view the senses as the most effective and potentially the only tool they have to reach reality. But as Shestov rightfully questioned, when was the last time the majority decided correctly on an important philosophical problem? The role of science and philosophy is to question the obvious and this is what we should do if we are to uncover the true role of the senses. This paper uses a series of philosophy articles to touch on the problem of the senses and the answer portrayed is exciting as well as terrifying: The senses are not a helpful tool but more of a hurdle when it comes to understanding the cosmos...

Spyridon Kakos

Harmonia Philosophica paper series

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A dialogue and a prelude

A young person once thought he knew everything.

A young person once thought he was logical.

“But we can see the table. How can you argue we do not?”, he asked.

“Tell me. Do you see yourself?”, I answered.

(Silence)

Try to question the obvious.

And you will see things that you never saw.

The young man smiled.

(I cried...)

What does that have to do with the table?

Everything.

If only you could see...

Chapter 1 – The senses...

Most people to-day believe that the senses are our window to the world. But what if the senses did not actually help us reach reality but acted as an obstacle towards our understanding of the cosmos?

Look at the screen in front of you.

Of course, it is there.

You are reading it as we speak.

But what is that screen? Analyze it and you will see nothing but empty space. With scattered electrons and other particles here and there. With bacteria and microbes roaming its surface as we speak – bacteria and microbes you do not see or feel. You are so proud of seeing that screen. And yet it is full of things you will never see... And most importantly, its essence is well beyond all those things... A screen conveying information you seek... A screen conveying information you hate and disagree with... And who are you seeing this information? Who are you who is hating or loving the things you read or think of them while sleeping? Most importantly, why do you do so? What starts as a simple question, remains a simple question only if you choose so.

The senses are said to be our window to the world. Our tools to reach reality.

But what if things were different than that?

What if the world of the senses is obscuring the 'true' world we should be "seeing"?

But science is analyzing the cosmos via the senses!

(Does it?)

But humans experience reality through the senses!

(Do they?)

A set of irrational philosophical snapshots from Harmonia Philosophica try to make you not-think about those seemingly stupid questions...

Blind people seeing...

Researchers presented 20 blind and 20 sighted adults with animal names and asked participants to: order animals by size and height; sort animals into groups based on shape, skin texture and color; pick which animal out of a group is unlike the others in shape, and choose from various texture options (“Does a hippo have feathers, fur, skin or scales?”).

Overall, blind and sighted participants organized animals in similar ways and agreed on which physical features were most likely to be observed within animal groups. Contrary to the idea that blind people learn about animal appearance from sighted people’s descriptions of what animals look like, blind and sighted participants disagreed most about the dimension that was easiest for sighted people to describe in words: animal color. Sighted participants created groups for white, pink, black, black and white, brown and grey animals, and they easily labeled these groups, but had a hard time verbally describing their shape groupings. Blind people created similar shape groups to the sighted but did not make consistent color groups.

The researchers found that to deduce what animals looked like, blind people relied on similar biological classifications, but such inference works less well for color because many very different animals are white (e.g., swans, polar bears and sheep).

The main conclusion is that blind people develop rich and accurate ideas about appearance based on inference. “What the findings show is that linguistic communication can give us rich and accurate knowledge, even knowledge that at first glance seems ‘visual.’” says Marina Bedny, Assistant Professor of Psychological and Brain Sciences at Johns Hopkins and another author on the paper. ([source](#))

What you think is what you see.

What you hear is what you think.

The same way that what you see is what you think.

Look too much at the cosmos and you will stop listening.

Listen carefully and you will stop seeing.

There is balance in the cosmos.

And this balance can only be sensed by those who have no balance.

There is chaos in the world.

And this chaos can only be seen by those who see no order anywhere.

On the edges of existence, people standing still.

In the center of being, blind people dancing...

White bears.

White swans.

White snow.

Don’t you see? Everything is black!

Listen. So that you touch...

Our eyes, ears and skin are responsible for different senses. Moreover, our brain assigns these senses to different regions: the visual cortex, auditory cortex and somatosensory cortex. However, it is clear that there are anatomical connections between these different cortices such that brain activation to one sense can influence brain activation to another. A study by the laboratory of Associate Professor Shoji Komai at the Nara Institute of Science and Technology (NAIST), Japan, seen in PLOS ONE, explains how auditory stimulation of the barrel cortex influences responses to tactile stimulation in mice and rats. Komai considered the barrel cortex a good model to see how sound can affect the perception of touch.

“We think our senses are distinct, but there are many studies that show multisensory responses, mainly through audio-visual interactions or audio-tactile interactions,” explains Komai.

His group found that mouse and rat neurons in the barrel cortex were unresponsive to light, but that a strong majority responded to sound. These neurons showed electrical responses to sound that could be categorized as regular spiking or fast spiking. Further, the barrel cortex appeared to treat tactile and auditory stimuli separately. “These responses indicate that tactile and auditory information is processed in parallel in the barrel cortex,” says Komai.

Additional analysis showed that the electrophysiological properties of the responses were different, with sound causing longer postsynaptic potentials with long latency, almost priming the animal to sense touch. This would be like the shuddering one does when hearing a loud boom. According to Komai, this reaction would be an evolutionary advantage for nocturnal animals such as rats and mice.

“In a nocturnal environment, sound may act as an alarm to detect prey or predators. The combination of auditory and tactile cues may yield an effective response. It will be interesting to learn how the same system is advantageous in humans,” he says. ([source](#))

Listening. Tasting. Seeing. Touching. Smelling.

Distinct senses and yet so interconnected.

Interlinked.

But don't be too dazzled by the light.

It usually hides the deepest shadows.

Senses do not let us sense the world as it is.

They help us break that world apart.

Every path in the dark forest of perception is connected with the others. And there is no way to tread one of them without crossing the others. The more you walk, the deeper you enter the forest. The more you walk, the more everything seems more familiar. The deeper you enter the forest, the more difficult to see the forest.

Tracing back your steps.

At the time when you started walking.

Remember...

As you entered that first path...

Well before the path had a name...

Did you see any paths?

Listen...

Touching. You.

Researchers found that gently stroking a baby seems to reduce activity in the infant brain associated with painful experiences. Their results suggest that lightly brushing an infant at a certain speed – of approximately 3 centimeters per second – could provide effective pain relief before clinically necessary medical procedures. ([source](#))

Touch. The most cryptic of all senses.

A gentle touch can sooth pain. A loving touch can make the cosmos a tolerable place again. We seek touch. And we miss it when it is not there. When all other things are gone. touch is the only way we have to access what “is there” beside us.

We can imagine of any other sense missing, but not the sense of touch. A sense so fundamental not because it is a way to sense the cosmos, but because it is the only way for the cosmos to Be. In a cosmos where everything is interconnected, the sense of touch is equivalent to the notion of existence itself.

You are not just touching that table.

You are allowing the table to touch you back.

Feel the cosmos around you. Touching everything. Which in turn touches everything else in return. At the end, that familiar sense of touch ends up back to the only thing existing, the only thing you can actually touch.

You...

Robots. Seeing. Humans. Laughing.

Humans have long been masters of dexterity, a skill that can largely be credited to the help of our eyes. Robots, meanwhile, are still catching up. Certainly, there's been some progress: for decades robots in controlled environments like assembly lines have been able to pick up the same object over and over again.

More recently, breakthroughs in computer vision have enabled robots to make basic distinctions between objects, but even then, they don't truly understand objects' shapes, so there's little they can do after a quick pick-up.

In a new paper, researchers from MIT's Computer Science and Artificial Intelligence Laboratory (CSAIL), say that they've made a key development in this area of work: a system that lets robots inspect random objects, and visually understand them enough to accomplish specific tasks without ever having seen them before. ([source](#))

Touch that object in front of you.

It is not in front of you.

Is is not an «αντι-κείμενο» [En. "lying against you"] (Heidegger). It is part of you. You can never see or touch things which you don't know. Feel it with your hand. This is not a table. This is your life. A glass of water. A cup of coffee. So tired. Children laughing. Calling you.

You are getting up now.

Going inside to play.

Leaving the table.

Now you don't see it.

It never existed.

A children's smile. Your smile. Everything gone...

Hallucinations... Living... Senses as deprivation of your nature...

One hundred billion or so neurons are also incredibly fragile.

If the tiniest thing goes wrong with a particular connection – maybe something misfires, or a certain neural pathway is blocked – things can fall apart very quickly. And, oddly enough, even without any injuries or structural malfunctions, the human brain can get weird all by itself – turns out, it's surprisingly easy to trick it into seeing and hearing things that aren't actually there.

And no, it does not involve a bunch of drugs to make yourself hallucinate. The brain can do all that on its own, you just have to know how to manipulate it right. As the guys in a Scam School video from 2016 demonstrate, if you create a situation of intense sensory deprivation using some common household objects, you can induce some really strong hallucinations that mess with both your sense of sight and sound. After 20 minutes, the Scam School guys reported seeing “blooms of colour”, like when you rub your eyelids, that would soon form shapes like dinosaur silhouettes, jellyfish, and the Eye of Sauron. One heard screams, and the other heard laughter.

What they're doing actually follows the principles of an actual scientific phenomenon known as the Ganzfeld effect. The Ganzfeld effect describes how when you are exposed to “an unstructured, uniform stimulation field” – such as seeing blackness and hearing constant television static – your brain responds by amplifying neural noise in an effort to find missing visual signals. ([source](#))

You see nothing. You touch nothing.

And yet you want to feel something.

But in a dark cosmos full of existence, there is no need to sense anything. In a world of One, there is no need to feel or touch; you are already part of the totality of being. And yet all humans do touch. And yet, all humans hear, see and smell. Because they do not just want to live. They do not just want to be. They want to die. Afraid of their own existence. Discarding their own nature.

In this world of nothingness,

there is a need to sense everything.

Dead people in an alive cosmos.

Wanting to get out...

MAGNIFY! (Do you trust your eyes?) [against senses... again]

Extremely distant galaxies are usually too faint to be seen, even by the largest telescopes. But nature has a solution: gravitational lensing, predicted by Albert Einstein and observed many times by astronomers. However recently, an international team of astronomers, led by Harald Ebeling of the Institute for Astronomy at the University of Hawaii at Manoa, discovered one of the most extreme instances of magnification by gravitational lensing.

Using the Hubble Space Telescope to survey a sample of huge clusters of galaxies, the team found a distant galaxy, eMACSJ1341-QG-1, that is magnified 30 times thanks to the distortion of space-time created by the massive galaxy cluster dubbed eMACSJ1341.9-2441. ([source](#))

Everything we see is distorted in one or the other way.

Light passing through fields, light passing through matter or dark matter, through water or air, through lenses, through your very... eyes! No, you can never be certain that what you see is real. Look without prejudice and you will see, that the only thing you can be certain of is that you cannot see!

Look at that coffee cup.

There is no coffee.

Only molecules of coffee.

But you are smelling coffee.

Wishing coffee.

Because you have a hard time waking up.

And you have to go to work even though you don't want to.

It is your life that you are experiencing.

Not just a cup of coffee.

But sure.

You can just say "I see coffee".

Plants. Seeing.

Plants lack eyes and ears, but they can still see, hear, smell and respond to environmental cues and dangers. They do this with the aid of hundreds of membrane proteins that sense microbes or other stresses. Researchers now have created the first network map for 200 of these proteins. The map shows how a few key proteins act as master nodes critical for network integrity, and the map also reveals unknown interactions. ([source](#))

Regarding light, the proteins PCH1 and PCHL help plants adapt to their surroundings. Plants use the photoreceptor protein phytochrome B to see light and then regulate processes such as seed germination, seedling development, longitudinal growth and flower formation. ([source](#))

We hold our senses to very high esteem.

And we tend to forget that they are just interactions.

Interactions between lifeless particles.

Meaning nothing without a conscious being interpreting them...

Touch the tree. It is not there.

Until you start singing...

Creating the sense of touch... Feeling trapped...

Researchers have, for the first time, coaxed human stem cells to become sensory interneurons – the cells that give us our sense of touch. The new protocol could be a step toward stem cell-based therapies to restore sensation in paralyzed people who have lost feeling in parts of their body. ([source](#))

We want to sense. We want to touch. And when we cannot, we create that sense. We believe we are liberated by our senses. But sensing, touching, means exactly the opposite. Sensing is about being somewhere and getting specific interactions change you. While on the other hand being means exactly the opposite. Touching means being connected with specific things which affect you. Things which set the context of your existence and its boundaries. But existing means being; affecting the universe around you instead of being affected by it.

We are free spirits. Imprisoned in a cage.

And we started loving this cage. Feeling safe whenever we touch it...

Look at the light. It is everywhere. Does it “sense” anything? Catch a photon. Make it “sense” (interact) with your measuring device. Does it feel “liberated”? Seek liberty in nothingness. Seek infinity into zero. Start counting and you will enslave yourself. Start sensing and you will immediately lose connection with everything...

Sensing more... And more... And more... Until we sense no more...

Calcium is something of a double-edged sword. Too much of the essential element is as dangerous as too little, either case adversely affecting health in animals from humans to mice to fruit flies. Sensing calcium can be crucial. Though it doesn't fit into the five established tastes the tongue's receptors can identify - sweet, sour, salty, bitter and savory (umami) - humans can taste it and describe it as slightly bitter and sour. [[source](#)]

We love our senses.

We believe in our dogmas which makes us feel better.

We like being only matter.

It removes all the stress and anxiety of responsibility.

And if we have five (or six) senses, why not add up more? More senses mean more... "objectivity" right? More "senses" make more... sense don't they?

But take another look.

Imagine yourself sensing everything. From calcium to fear to... colours. What would you be able to do? Would the world make more sense? Is there room for imagination and free will when you are fed with ALL possible data via your senses? Is there room for your "self" when you are consumed by what is not your "self"?

If the brain is a barrier instead of a useful tool, the senses are the keys to our prison.

And instead of opening the door, we lock it even more by adding more layers of interference between us and the cosmos.

Imagine you, sensing everything.

And you will understand that it is exactly then, that you sense absolutely nothing...

Filling in the gaps (of the blind spot). Believing (what is not there). Lies. Truth.

To make sense of the world, humans and animals need to combine information from multiple sources. This is usually done according to how reliable each piece of information is. For example, to know when to cross the street, we usually rely more on what we see than what we hear – but this can change on a foggy day.

“In such situations with the blind spot, the brain ‘fills in’ the missing information from its surroundings, resulting in no apparent difference in what we see,” says senior author Professor Peter König, from the University of Osnabrück’s Institute of Cognitive Science. “While this fill-in is normally accurate enough, it is mostly unreliable because no actual information from the real world ever reaches the brain.

Scientists wanted to find out if we typically handle this filled-in information differently to real, direct sensory information, or whether we treat it as equal.

To do this, König and his team asked study participants to choose between two striped visual images, both of which were displayed to them using shutter glasses. Each image was displayed either partially inside or completely outside the visual blind spot. Both were perceived as identical and ‘continuous’ due to the filling-in effect, and participants were asked to select the image they thought represented the real, continuous stimulus.

It seemed that people treat ‘inferred’ visual objects generated by the brain as more reliable than external images from the real world. ([source](#))

What is real is just a representation in our mind.

And the more “pure” the representation, the more “real” it feels.

We see what we want. And the more interference we get from our senses, the more fake the world seems to be. That should not make us doubt the validity of our mind, but the validity of our senses instead. If their input does not imply anything regarding the validity of our perception (or what is more, if their input makes our perception be less related to “reality”) then perhaps our senses could be not related to the... validity of our perception.

This is the obvious and simplest conclusion of them all. And we should not be afraid of any conclusion, no matter how much it opposes our beliefs.

Look out for the fake.

It does not carry any notion of ‘reality’ and, thus, is more pure. (and thus, more real)

Look out for the lies.

That is where veracity is hidden...

X, Y, Male, Female...

In most mammals, us included, biological sex is determined by a lottery between two letters: X and Y, the sex chromosomes. Inherit one X each from mom and dad, and develop ovaries, a womb and a vagina. Inherit an X from mom and a Y from dad, and develop testes and a penis.

But there are rare, mysterious exceptions. A small number of rodents have no Y chromosomes, yet are born as either females or males, not hermaphrodites. Now, scientists may be one step closer to figuring out how sex determination works in one of these rodents.

In a study published in *Science Advances*, Japanese scientists suggested that cells of the endangered Amami spiny rat, from Japan, are sexually flexible and capable of adapting to either ovaries or testes. When the researchers injected stem cells derived from a female rat into male embryos of laboratory mice, the cells developed into and survived as sperm precursors in adult males. The result was surprising since scientists have never been able to generate mature sperm from female stem cells, largely because sperm production normally requires the Y chromosome. ([source](#))

Even matter itself shows us not to trust her.

It changes, adapts, follows rules and then breaks them.

And yet we believe that our mind is just matter.

But it is not. It is a living being.

It changes, adapts, follows rules and then breaks them...

See beyond your brain. Think beyond your eyes.

You are not who you are because of them.

You are the law breaker.

And they are the police...

Ghostly presences. False senses. Dasein.

Ghostly presences – the feeling of someone near you when there’s no one there – could be down to your brain trying to make sense of conflicting information. For the first time, the brain regions involved in such hallucinations have been identified – and a ghost presence induced in healthy people.

The work sheds light on why some people with conditions such as schizophrenia and epilepsy feel an alien presence nearby, and may also explain why mountain climbers often report being accompanied by the presence of what’s called “the third man”.

In 1933, when British explorer Frank Smythe came close to conquering Mount Everest all by himself, he couldn’t shake off the feeling that someone else was climbing with him. But he was alone, having left his team far behind. Smythe was hallucinating. He even broke off a piece of cake and offered it to his invisible climbing partner.

This condition, called feeling of presence (FoP), is different from other bodily hallucinations, such as out-of-body experiences, in which you feel you are outside your body looking at it, or the doppelgänger effect, in which you see and interact with your double. Such hallucinations have a visual component. ([source](#))

Researches tried to replicate the ghostly presence with the use of a master-slave robot construction. But their experiment was a trick. A staged act to create a specific set of conditions under which the brain logically deduced the presence of something touching their back when nothing did.

But what does that mean, even if it is correct from a scientifically point of view and representative of all cases of ghostly presence feelings? If the brain creates false sensory input, which is the criterion we use to distinguish them? What tells us that all other sensory input we experience every day is not “false”?

We are afraid of our world having no meaning that we give meaning ourselves.

We are afraid of our world being void of life.

We are afraid of our world being full of ghosts.

We need to summon all the courage we can to accept the fact that the meaning we give is the meaning of life.

That the world is composed of life and life alone.

That the ghosts in the cosmos are us.

Living in the dark.

We create light.

By Being.

Invisibility from touching. Senses prejudice. The most important things...

In the past years, invisibility cloaks were developed for various senses. Objects can be hidden from light, heat or sound. However, hiding of an object from being touched still remained to be accomplished. Scientists have now succeeded in creating a volume in which an object can be hidden from touching similar to a pea under the mattress of a princess.

In the invisibility cloak produced, a hard cylinder is inserted into the bottom layer. Any objects to be hidden can be put into its cavity. If a light foam or many layers of cotton would be placed above the hard cylinder, the cylinder would be more difficult to touch, but could still be felt as a form. The metamaterial structure directs the forces of the touching finger such that the cylinder is hidden completely.

“It is like in Hans-Christian Andersen’s fairy tale about the princess and the pea. The princess feels the pea in spite of the mattresses. When using our new material, however, one mattress would be sufficient for the princess to sleep well,” Bückmann explains. ([source](#))

On senses we have built our world.

We believe our eyes. We believe our ears. We believe our hands.

We have started to question our eyes. We have started to question our ears. We now start questioning our touch.

But all senses are basically the same: Through a medium our body touches something. Through the eyes, the ears, the nose, the fingers. Every time we sense something, we “touch” something. Search your feelings. You know it is true. What you touch is not there. The most important things are untouchable. The most important things are invisible. The most important things are said in silence...

Touch me. Am I real?

Bacteria. Touch. Humans.

Bacteria seem to have a sense of touch. [[source](#)]

We always consider the sense of touch to be the culmination of our senses. You need to touch something in order to believe it. (remember unbelieving Thomas) Even blind people can touch things and sense the cosmos.

But if touch is inherent even to bacteria, then could it be that it is not so important to base our perception of the cosmos on it? What does a bacterium know after all?

Try to touch it and see for yourself.

But wait a minute.

You can't...

Philosophy Wire: Seeing the unseen...

Scientists try to photograph a black hole. [\[source\]](#) We see the invisible. Because we see the visible... We see the visible. Only because we see the invisible...

Philosophy Wire: Brain synapses. Seeing. Before seeing.

He couldn't see these gaps in his microscope, but he called them synapses, and said that if we think, learn and form memories in the brain then that itty-bitty space was most likely the location where we do it. This challenged the belief at the time that information diffused in all directions over a meshwork of neurons. [\[source\]](#)

Long before we see things, we imagine them.

Other people deny it.

Other people call it intuition.

What if it is neither?

What if it is a self-fulfilling prophecy waiting to be fulfilled? What if we determine what we see? What if the senses are the result of our thinking and not vice versa? Think about it.

Have you ever "seen" anything you have not thought of before?

Philosophy Wire: Seeing farther: The (nonexistent) limitations of vision and their meaning.

ESO's HAWK-I infrared instrument on the Very Large Telescope (VLT) in Chile has been used to peer deeper into the heart of Orion Nebula than ever before. [\[source\]](#) There are no limits as to how far and deep we can see. And this is why seeing is totally useless after all. See a nebula from far away. See closer. Get closer. And closer... What do you see? Everything is made up of... nothing. See the greatest picture. With the eyes of your soul. Only then will you understand.

Seeing via an app... Not seeing...

A mobile phone application from Microsoft is designed to help people with color blindness see the world a little bit more clearly. Color Binoculars, created by two Microsoft software engineers (one of whom is colorblind), applies a filter to incoming images, changing the colors on the screen to ones that are easier to distinguish.

Looking at red and green objects through the application (which uses your phone's camera) will make the reds brighter and more pink and the greens darker, making differences between the two more obvious. It won't correct the colors: an individual with color blindness will not be able to suddenly see red or green via using the application, but they will be able to distinguish between red and green objects. They might more easily be able to identify that a red and green sweater had a striped pattern, for example, even though they still wouldn't see red or green as most of us do. ([source](#))

People seeing the world through an application.

People seeing the world through telescopes.

People seeing the world through binoculars.

People seeing the world through glasses.

People seeing the world through their eyes.

People not seeing anything....

Autism. Senses. Seeing the world as it is. Being philosophically illiterate.

Autism spectrum disorders are generally thought to be caused by deficits in brain development, but a study in mice now suggests that at least some aspects of the disorder – including how touch is perceived, anxiety, and social abnormalities – are linked to defects in another area of the nervous system, the peripheral nerves found throughout the limbs, digits, and other parts of the body that communicate sensory information to the brain.

In the new study, the researchers examined the effects of gene mutations known to be associated with ASD in humans. In particular, they focused on *Mecp2*, which causes Rett syndrome, a disorder that is often associated with ASD, and *Gabrb3*, which also is implicated in ASD. They looked at two other genes connected to ASD-like behaviors as well.

By engineering mice that have these mutations only in their peripheral sensory neurons, which detect light touch stimuli acting on the skin, scientists showed that mutations there are both necessary and sufficient for creating mice with an abnormal hypersensitivity to touch.

The investigators measured how the mice reacted to touch stimuli, such as a light puff of air on their backs, and tested whether they could discriminate between objects with different textures. Mice with ASD gene mutations in only their sensory neurons exhibited heightened sensitivity to touch stimuli and were unable to discriminate between textures. The investigators next examined anxiety and social interactions in the mice using established tests looking at how much mice avoided being out in the open and how much they interacted with mice they'd never seen before. The animals with ASD gene mutations only in peripheral sensory neurons showed heightened anxiety and interacted less with other mice.

“Based on our findings, we think mice with these ASD-associated gene mutations have a major defect in the ‘volume switch’ in their peripheral sensory neurons”, says first author Lauren Orefice, a postdoctoral fellow in Ginty’s lab. Essentially, she says, the volume is turned up all the way in these neurons, leading the animals to feel touch at an exaggerated, heightened level.

“We think it works the same way in humans with ASD”, Ginty adds. ([source](#))

We tend to believe that having our senses is right.

We are certain that people with no senses have problems.

We are certain that people with heightened senses have issues as well.

In a world full of deceit, we like believing we are right. Because we see. Because we hear. Because we can touch and taste. But the world is only phenomena. Full of smoke and mirrors. The only way to look through the deception is by closing your eyes or by looking too hard.

Some people do.

And they scream out of agony when they do.

Or stay silent in awe.

All we can do is pity them. Because we do not understand. And we never will...

Transformations. Modern alchemy. Ancient secrets...

Since the Middle Ages, alchemists have sought to transmute elements, the most famous example being the long quest to turn lead into gold. Transmutation has been realized in modern times, but on a minute scale using a massive particle accelerator.

Researchers have now taken a different approach to that alchemists' ancient goal by making one material behave like another. Theorists at Princeton University have demonstrated that any two systems can be made to look alike, even if just for the smallest fraction of a second. (work published in published Feb. 24, 2017 in the journal Physical Review Letters)

In this context, for two objects to "look" like each other, they need to reflect light in the same way. The Princeton researchers' method involves using light to make non-permanent changes to a substance's molecules so that they mimic the reflective properties of another substance's molecules. In that way the researchers controlled the light that bounces off a molecule or any substance by controlling the light shone on it, which would allow them to alter how it looks. "It was a big shock for us that such a general statement as 'any two objects can be made to look alike' could be made," said co-author Denys Bondar, an associate research scholar in the laboratory of co-author Herschel Rabitz, Princeton's Charles Phelps Smyth '16 *17 Professor of Chemistry. ([source](#))

We like making things look the same, transforming them into something else. But the key is not the transformation itself, but something deeper lurking inside this seemingly new knowledge.

The light reflected whispers the unholy secret...

The transformation is useless.

All it does is to show that things are already the same.

While looking different...

A world of unity. Under a veil of uniqueness...

Many waves.

And yet one ocean.

Many snowflakes.

And yet they are all water.

Many humans.

And yet...

Listen to that whisper.

Turn your eyes away from the light.

Only then will everything be revealed...

Seeing better. And better. And better. Until we see nothing at all...

A few years ago, a team of scientists at EPFL's Laboratory of Nanoscale Biology, headed by Aleksandra Radenovic in the School of Engineering, developed an algorithm that can estimate a microscope's resolution in just a few seconds based on a single image. The algorithm's result indicates how closely a microscope is operating to its full potential. This could be particularly useful for the automated microscopes that have started appearing in research labs. The team's findings have just been published in Nature Methods.

The scientists used Fourier's transform as the basis for their algorithm, but they modified it so as to extract as much information as possible from a single image.

The results indicates how closely a microscope is operating to its full potential. The algorithm performs the calculation in just a few seconds and generates a single number. "Researchers can compare this number with the microscope's maximum possible resolution to see whether the instrument can work even better or modify the experimental conditions and observe how the resolution evolves" says Adrien Descloux, the study's lead author. ([source](#))

We want to see better. We want to see everything.

So we magnify.

Until we see all the details.

And more.

And more.

And more!

Pushing it to the limit! To see everything!

Until we can distinguish nothing anymore!

Isn't it funny? The more we analyze the cosmos the more we reach absolute zero. At the end, the point is a circle with zero radius. (source) At the end, in the midst of our greatest triumph, we will see nothing.

Ghosts casting shadows...

In a cosmos without any light...

Except the light we bring on our own...

Seeing what cannot be seen...

Identifying geological features in a densely vegetated, steep, and rough terrain can be almost impossible. Imagery like LiDAR can help researchers see through the tree cover, but subtle landforms can often be missed by the human eye.

A team of scientists has tapped into the power of machine learning to identify hidden geologic features. Specifically, the scientists identified previously unidentified cave entrances that were difficult to see in imagery, and hard to access on the ground. ([1](#))

What you cannot see is still there.

Not because someone sees it. But just because it is.

And yet, we need to see it to be able to know it.

Is that an insignificant detail we should discard?

Or an important artifact that could change the world?

Is it something denoting the importance of senses?

Or something perhaps emphasizing their insignificance?

“But the cave is there!” one might say. And it could be true. But can you convince me about that? And if not, what does that mean for the cave itself? Is it still “there”? Was it there in the first place? If the cave is there only when we see it, then this is a truly scary possibility. It would mean that we rule the cosmos and that our perception shapes the shape of existence. But if the cave is there anyway, no matter what, that would mean something even scarier. That our consciousness and existence matters not. That the cave is there and that we are already inside that cave. That we never left that cave. That we are still entangled in its darkness. And exactly because of that, we are conscious!

Are we children of light?

Or are we the daughters of darkness?

Look at the Sun.

Don't you long the Moon?

Stare at the Moon.

Do you feel the Sun burning?

Could we be asking the wrong questions from the beginning?

Search inside you.

The inability to answer questions could only mean one thing.

Neither the Sun.

Nor the Moon.

We are not the bearers of questions.

We are the answers!

Illusions. Shadows. Light...

Uncovering how neural circuits achieve a balance between excitation and inhibition. ([source](#))

Brain constantly changing. "Self"-organizing.

Based on what? Who is the "self"? Who are you?

We are all shadows in a cosmic dance of nothingness.

Trying to figure out where the light comes from.

Trying to understand what we see.

Only because we believe that we see.

Only because we cannot accept we are darkness.

Nothing is organized.

There is no self. But the illusion of self.

In a cosmos full of light.

Only darkness can be the father of us all...

Forgetting. Being.

There are an estimated 90 fatalities a year in the UK caused by drivers pulling out into the path of an oncoming motorcycle. New research by psychologists suggests this sort of crash may often be the result of a short-term memory failure rather than the driver not seeing an approaching motorcycle. [\[1\]](#) We hold sensing in great regard. But the only way to forget something is to see it. Can you ever forget what you never knew? Could you ever remember what you have seen? Your soul knows better. Only the things you know without sensing them at all, are immune to oblivion. The only way for something to exist for ever, is for it not to ever existed at all... Are you brave enough to face the dark?

Empty paper

Hallucinations are spooky and, fortunately, fairly rare. But, a new study suggests, the real question isn't so much why some people occasionally experience them. It's why all of us aren't hallucinating all the time.

In the study, Stanford University School of Medicine neuroscientists stimulated nerve cells in the visual cortex of mice to induce an illusory image in the animals' minds. The scientists needed to stimulate a surprisingly small number of nerve cells, or neurons, in order to generate the perception, which caused the mice to behave in a particular way. ([source](#))

Asking the right question.

But once more, giving the ring answer.

Because even before we start thinking, we have concluded on the answer we want.

Every day more and more evidence arise regarding how easily our perception of the cosmos might be distorted. And yet every day we still insist on us having the right and "correct" (true?)

What does this even mean?) perception of the cosmos. Because we do not want to accept the obvious. That was always our flaw.

Yes it is easy to hallucinate.

It is easy to fool the mind.

It is easy to see things which should not be seen.

It is not your fault. It is not the cosmos' fault.

It is just that neither you or the cosmos should care about being here wandering if it's your fault. Because you actually aren't here. And there is no fault. That is how all problems start. By seeing a blank piece of paper and yet still wanting to fill it in with every single thought that you make.

Admire that empty piece of paper.

It holds more knowledge than you would ever be able to write down...

See nothing...

Using nanotechnology, scientists have created a newly designed neuromorphic electronic device that endows microrobotics with colorful vision. The newly designed artificial vision device could have far-reaching applications for the fields of medicine, artificial intelligence, and microrobotics. ([1](#))

But what is that 'eye' doing? What is seeing anyway?

Can the best sensor 'see' anything without a human person interpreting its data?

The more we have developed our technology the more we are dependent on it. And yet, from the beginning of time until now we are the ones seeing. Not the telescope. Not the microscope. But we are. With our imperfect eyes. With our knowledge and our imagination. With our instinct and intuition.

And the more we use tools to see further the more we distance ourselves from the one thing we could somehow get a glimpse of when we were born.

Look. The stars. Distant galaxies. Nebulas and black holes.

All those wonders of the cosmos.

Noise doing nothing but preventing us from noticing our own self crying.

(You used to know me when you were blind...)

Touch nothing...

Researchers uncover mechanism that underlies the exquisite sensitivity of certain skin surfaces. The analysis, conducted in mice, reveals that the higher sensitivity of certain regions of the skin stems from a greater number of and stronger connections between neurons in

these regions and corresponding brain areas that receive signals from them. The findings set the stage for better understanding the mechanisms that underlie abnormalities of touch seen in certain neurodevelopmental disorders in humans. ([source](#))

The mystery of touch. We all try to find out how it works. How it produces the results we feel. How it helps us to know and understand the cosmos. But we do not see the scariest and most fundamental of its properties: That is does work! And through some function, it produces the image we have for the cosmos. This will always leave us wandering. What would the cosmos be like if we hadn't had the sense of touch? What IS the cosmos like without touching anything? And right at this moment, something magical will happen. For the first time we will be vulnerable. For the first time, the cosmos will touch us...

A delicate touch...

If robots are to help out in places like hospitals and phone repair shops, they're going to need a light touch. And what's lighter than not touching at all? Researchers have created a gripper that uses ultrasonics to suspend an object in midair, potentially making it suitable for the most delicate tasks. ([1](#))

Touch. Without touching anything.

It sounds like a paradox or a weird Zen quote.

Yet, it is the only way possible.

The moment you actually touch something you destroy it. The moment you touch something it becomes part of you. And it is then that you need something more than touching to feel it. Search for the things that feel the same. It is there were you will find all the reasons why they are not.

Extend your hand.

Touch yourself.

Isn't it weird that you can feel me?

Self-reference. Beauty.

When something pleases us visually – whether it's a fine piece of artwork, a beautiful feat of architecture, or an untouched natural landscape – new research demonstrates there is a pattern of activity in what's known as the default mode network (DMN).

The DMN is a large-scale system of interacting regions in the brain that appears to play a role in how we regulate our sense of self; this network is most active when we're self-reflecting, remembering, or imagining.

That's what makes its emerging role in aesthetics so interesting, since the findings of this latest study suggest – a deeply moving visual experience is processed by the same brain network that's strongly involved in who we are as individuals. ([1](#))

We believe we see the cosmos.

But we see nothing.

Except our self.

An abyss of existence.

Flickering in the mirror.

We like our self.

But only at the last moments of our life will we understand.

That it is not our self we stare at.

But that existence is staring at us!

You are not looking at any mirror.

But we are the mirror...

Do you dare to break yourself?

Things you cannot see...

Aiming to emulate the quantum characteristics of materials more realistically, researchers have figured out a way to create a lattice of light and atoms that can vibrate -- bringing sound to an otherwise silent experiment. ([source](#))

We perceive something as more 'real' if we can access it via all our senses. The more we can see, hear, taste, touch or smell something the more convinced we are that it 'exists'.

And we are so much consumed by this illusion that we forget that the only thing we are certain of - our self - we will never see, taste, hear, smell or ever touch it...

Look at your assumptions again...

Watch out about the things that you look for...

They may be just obscuring the path towards the things that you do not...

Awareness.

A research indicates that trees might be 'aware' of their size: Scientists found out that birch trees adjust their stem thickness to support their weight. ([1](#))

We hold our consciousness so high.

Never have we thought to look down to the dirt.

Never have we thought that this might be the lowest of the possible forms of Being.

And that we need to get low in order to rise...

Look around.

So many things to see.

Do you see anything?

An epilogue and a beginning...

New e-skin innovation gave robots and prosthetics an exceptional sense of touch. [\[source\]](#)

At the end robots will sense everything. (Technology already senses more than we do) At the end we will rely on them to sense the cosmos. At the end, every single detail will be known to us. From the faintest sound to the dimmest light, we will see and hear everything. At the end we will be blind. Smiling for knowing the cosmos at last. Without being able to see that the cosmos is crying for not being able to sense is anymore...

And within the silence.

We will weep.

And at our darkest hour.

We will sense our self.

Whispering...

(Light is not why we craved for light...)

Interact with others. Learn how to speak. Stand up. Look the cosmos from above. It is not you who started speaking. The cosmos always did. It is you who started listening. But be careful. For the noise is covering up what you need to hear...

~ Harmonia Philosophica

Chapter X – The Senses...

What do you see other than what you think?

But what is thought based upon?

(Nothingness)

But most of us see the table.

(A theory only needs one anti-paradigm to be brought down to ruins)

Still, do you argue the table is not there?

We see it, but upside-down. Our brain reverses the image that comes into our retina. So, what is really there at the end? What is the 'truth' we sense?

(We see what we think)

The only thing that is certain (your self) you cannot sense!

Could the senses just be a distraction from us exercising non-thinking and actually accepting the cosmos as-is?

But most people see the table!

(Only few saints sense God. Why do you still believe in Him?)

In Plato's cave all people saw the shades.

Listen again...

See closely...

One more time...

What you think is what you see.

What you hear is what you think.

But don't be too dazzled by the light.

It usually hides the deepest shadows.

Senses do not let us sense the world as it is.

They help us break that world apart.

You are not just touching that table.

You are allowing the table to touch you back.

Feel the cosmos around you. Touching everything.

Which in turn touches everything else in return.

At the end, that familiar sense of touch ends up back to the only thing existing, the only thing you can actually touch.

You...

This is not a table. This is your life.

A glass of water. A cup of coffee. So tired.

Children laughing. Calling you.

In a world of One, there is no need to feel or touch;

you are already part of the totality of being.

No, you can never be certain that what you see is real.

Look without prejudice and you will see, that the only thing you can be certain of is that you cannot see!

Meaning nothing without a conscious being interpreting them...

Sensing is about being somewhere and getting specific interactions change you.

Start sensing and you will immediately lose connection with everything...

Imagine yourself sensing everything.

Is there room for your "self" when you are consumed by what is not your "self"?

If the brain is a barrier instead of a useful tool, the senses are the keys to our prison.

Imagine you, sensing everything.

And you will understand that it is exactly then, that you sense absolutely nothing...

What is real is just a representation in our mind.

And the more "pure" the representation, the more "real" it feels.

Look out for the fake.

It does not carry any notion of 'reality' and, thus, is more pure.

Look out for the lies.

That is where veracity is hidden...

See beyond your brain. Think beyond your eyes.

You are not who you are because of them.

You are the law breaker.

And they are the police...

If the brain creates false sensory input, which is the criterion we use to distinguish them?

What tells us that all other sensory input we experience every day is not "false"?

The most important things are untouchable.

The most important things are invisible.

The most important things are said in silence...

We see the visible. Only because we see the invisible...

What if the senses are the result of our thinking and not vice versa?

Everything is made up of... nothing. See the greatest picture. With the eyes of your soul. Only then will you understand.

People seeing the world through telescopes.

People seeing the world through binoculars.

People seeing the world through glasses.

People seeing the world through their eyes.

People not seeing anything....

But the world is only phenomena. Full of smoke and mirrors.

The only way to look through the deception is by closing your eyes or by looking too hard.

[...] things are already the same.

While looking different...

Turn your eyes away from the light.

Only then will everything be revealed...

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