

INSULT TO THE BRAIN

SPEECH BY : PILIRANI KUMASEWERA
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Pilirani Kumasewera, CEO and Founder of Padziwe, delivers his speech on the human brain

The sheer size and complexity of the universe is truly mind blowing. There are objects such as planets, comets, etc that are bound by gravity to orbit around stars. This arrangement is similar to what we have in the Solar System, eight planets and their respective moons orbiting around the sun.

The next organized system that we find after a solar system is a galaxy. A galaxy is a collection of several star systems orbiting around a common center. Our Solar System is part of family called the Milky Way. The Milky Way galaxy contains somewhere about 200 to 400 billion stars. Many of the stars are more massive in size and mass than our sun. After the Milky Way there is a galaxy called Andromeda. It is home to over 1 trillion stars.

These galaxies form a common family which is called a galaxy cluster.

The distances across these star systems, galaxies and clusters are so vast that measuring them using kilometers or miles is like trying to empty the ocean using a bucket. It would not work. Instead,

astronomers use the **light year** to measure these distances for convenience. One light year is equal to about ten trillion kilometers. That's ten million million or, simply, 10^{13}

But still these enormous distances and the complex systems created by the billions upon billions of stars in the universe does not match the complexity and processing power of your brain. Your brain is the most awe-inspiring object ever to have been discovered.

The human brain consists of about 100 billion cells. Each one of these cells connects to 1000 other brain cells, making a total of 100,000 billion connections. These are more cell connection points than there are stars in the Milky Way galaxy. Here are some of the amazing things the brains can do:

- The human brain is capable of making 20 million calculations per second.
- Through repetitions, the brain is capable of automating certain actions so that they can be carried out in 'auto-pilot' without you being in conscious control over them.
- Not only can it keep track of time while we sleep but it also sets a biological alarm which can wake you up from slumber.
- It can effectively judge another person's character within 0.1 seconds.
- The brain is capable of learning almost everything you throw at it.

To possess such an extremely powerful organ is a blessing to you. It is this brain that has given us an upper hand and placed us at the pinnacle of all species on planet earth.

With such a weapon in your hands it is very disturbing to hear you as a student say that you cannot learn a certain topic or subject because it is "difficult". Mathematics, Physics or Chemistry are pieces of cake compared to the work which your brain does and what it is capable of. It can master these subjects if only you tell it to.

Wendy Vo, a Vietnamese-American girl, mastered 11 languages by the time she was 8 years old. Is she uniquely gifted? Maybe. But the fact is, her brain had to be taught repeatedly to learn these languages. With such a challenge, the brain rose to the occasion and expanded its capability.

Your brain is very versatile and flexible when it comes to learning. It is able to develop new cells and new cell connections dedicated to the things you want it to learn. The biggest problem is that you tend to use your brain usually for passive things like watching TV, listening to someone talk, eating, sleeping, and so on. These are things which the brain has already mastered and doesn't need much effort to execute. It's like using a spacecraft to fly within the country. You are not making maximum use of it.

If you are going to make the most of your brain, you need to start stretching its current limits. You need to force it to think, assimilate new information, make sense of complex issues and master new skills – whether they be motor or intellectual.

Throw challenges at your brain. Pick up math problems for it to solve; give it as much information as possible for it to memorize; learn a new language; engage in intelligent sports like basketball; make new friends and try to learn as much as possible about them; If you are right-handed, try using your left hand to do things like brushing your teeth, eating, and using your computer mouse, etc; try doing

some work with your eyes closed; turn familiar things upside down; use new routes/roads to the places you go often; read about and look at the universe; do meditation... Simply put, try to do things the harder whenever possible.

As you do this your brain expands its capacity and the topics or subjects that seem challenging at first will start looking like nursery rhymes after a while.

Thank you.