

A scientific reason for learning the Piano...

The human neural network is incredibly complex. It consists of ten to twelve billion neurons in the nervous system, spreading throughout the body (Gross, 2001). That alone is about one and a half times the human global population, in the beginning of the year 2010. (US Census Bureau, 2010). But that is not all. There are about 100 billion neurons in the brain. Which, simply in numerical terms makes it as complex as the Milky Way, our home galaxy which has the equivalent number in stars or star systems. (Fischbach, 1993) In addition to the nerve cells themselves there are several other components such as glial cells and other supportive chemicals and organisms that support the functioning of that complex system within our body. If we consider the actions that vast neural system performs in an incredibly organized manner, our neural network and brains can easily claim to be among the most complex things there are in the universe. All those nerve cells ('neurons') work amazingly well together to enable living, feeling, thinking and acting. It is sensational, yet happens at every second, even every moment within the Human body.

Different sections of the brain are responsible for different tasks. Which means, if your brain was scanned while performing two different tasks, for example singing at one time and reading at another time, different areas of your brain would light up on the screen, showing an increase of activity.

Of all the actions the brain performs, what would be your guess to take up the highest capacity? Or in other words: have the most portions of the brain dedicated to its function? Would it be the sensory system, recognising things you see, feel, hear and smell? Would it be the parts vital to enable speech? Or as some would like it to be... solving logical puzzles or mathematical challenges? Well if any of those was your choice...Sorry, you are wrong! The single function that seems to take up the most areas of the brain, to enable its performance, is the control of your hands! And not just by a little! (Myers, 2006). Of all these billions of cells, that are in some complex way connected in a logical system, the largest part is used to make your fingers and thumb move in a coordinated way, performing tasks you want it to do. What a miraculous tool!

Imagine this scene. A young boy, Timmy, is all nervous before a piano recital at school. The MC announces to the crowd the next act: Little Timmy playing Beethoven's Moonlight Sonata. Among the crowd sit little Timmy's parents almost as anxious and nervous for little Timmy as he is himself, hoping that their young kid will do well and be able to reap the rewards of many hours of practice, anxious that their beloved son will have an uplifting

experience. The spotlight is on Timmy as he timidly walks up to the Grand Piano on stage, climbs on the seat and closes his eyes. He silently says a short prayer for help. He places his fingers hovering over the Keys of his instrument, takes one last deep breath and ... THE MIRACLE BEGINS! Within that child's little head, processes begin that are more complex than the grand motions that keep our galaxy in place and order! As he strikes each key in coordination and sequence, a brain scanner attached to him would light up brighter than the most amazing Christmas tree! Maybe it is a good thing that neither Timmy nor his parents are aware of the huge complex procedure that enables the boy to play that piece of music. They might have been even more nervous. Remember it is very likely that it takes more complex processes in the brain to play a piece on the piano than it is to think one up. In that way the boy's achievement even if he made some mistakes while playing this piece, was just as admirable as Beethoven making it up in the first place!

Learning the piano is a great achievement, at any stage of its learning, whether as a beginner just learning to play "Mary had a little lamb"- with only one hand- or later the complex pieces of Rachmaninoff or even creating your own pieces. It is a great exercise to the mind. And a great opportunity to develop discipline and to take control of the great abilities the human body is endowed with.

In my mind I can envision a very humorous scene in some stereotype science fiction movie or a geeky super hero comic book, where the bad guy thinks he is so smart and with an evil, haughty laugh is bragging to everyone that he will "rule the Galaxy". Then you or your child that has learned the Piano will sit there and say "Hah! That is nothing! I can play Chopin!"

References:

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Myers, D. (2006), Psychology, (8th ed.), New York: Worth Publishers

US Census Bureau, (n.d.) World Population Summary, retrieved 28th January 2010 from <http://www.census.gov/ipc/www/idb/worldpopinfo.php>

*The mind seeking to understand the brain- that is indeed among the ultimate scientific challenges. And so it will always be.
To paraphrase cosmologist John Barrow, a brain simple enough to be understood is too simple to produce a mind able to understand it.
David Myers, (2006, p. 91)*

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