

RESPONDING WITH WONDERMENT AND AWE

By Arthur L. Costa and Bena Kallick

"Wonder is what sets us apart from other life forms.

*No other species wonders about the meaning of existence or the complexity of the
universe or themselves."*

Herbert W. Boyer

On July 14, 2015, the New Horizons spacecraft zoomed within 7800 miles of Pluto snapping epic close up images of the dwarf planet and its 5 moons' surfaces. It then sent the photos, taking 4.5 hours traveling 3 billion miles, back to earth at the speed of light to be interpreted by eagerly waiting astrophysicists.

This is a staggering technological achievement because Pluto is so incredibly far away. Launched on January 19, 2006, New Horizons uses a decade-old technology, traveling a route that was calculated years ago. Despite this, NASA engineers managed to get the tiny probe to an incredibly precise spot in space, using Jupiter's gravity as a slingshot to accelerate it outward and a few thruster burns over the years to keep the probe on track.

But it would be a mistake to think that this mission is only exciting for curious scientists. New Horizons embodies a fundamental characteristic of humans: our urge for exploration, our passion for seeing a new world, climbing a rock-face mountain, writing a poem, searching for extra terrestrial intelligence or creating a mathematical formula to better explain our theory--simply because it's tantalizingly there.

So, what motivated these scientists to invest so much time--nine years for the spacecraft to reach Pluto--and money--700 million dollars over 15 year-- to risk --software glitches and collisions with space debris and asteroids--on such a venture? The response to this question might be illuminated with a quote from author and psychologist, Mihalyi. Csikszentmihalyi who said,

“Without awe life becomes routine...try to be surprised by something every day.”

Learning should elicit and develop respect for wonder and stimulate the imagination. However some people avoid difficult problems and are “turned off” to learning. They make such comments as, “I am not good at this kind of problem,” or “Go ask Jose, he’s the brain in this class.” “Its boring.” “When am I ever going to use this stuff?” “Who cares?” “Thinking is hard work,” or “I don’t do thinking, just give me the answer”. Many perceive thinking as hard work and therefore recoil from situations which demand “too much” of it.

Wonderment, Awe and the Brain

“All thinking begins with wondering.”

Socrates

We all share the capacity for wonderment, awe, inquisitiveness, intrigue, curiosity and mystery. Nobody is born without it.. Because every thought and action is accompanied by emotions, they have their origins in the brain. The center for emotions in the brain is the amygdala. Those feel-good neurotransmitters (serotonin, endorphin, dopamine) are

released whenever we experience such good feelings as rapture, intrigue, amazement or fascination.

But many of us never learn to tap into the source of our passions because we fail to discover what inspires it. Passion refers to the force for intensity in all of us. One's passions might be writing, gardening, acting, sports, and working with children business, competition, and personal improvement.

Young children are naturally curious. They commune with the world around them; they reflect on the changing formations of a cloud; feel charmed by the opening of a bud; sense the logical simplicity of mathematical order. They find beauty in a sunset, intrigue in the geometrics of a spider web, and exhilaration at the iridescence of a hummingbird's wings. They see the congruity and intricacies in the derivation of a mathematical formula; recognize the orderliness and adroitness of a chemical change, and commune with the serenity of a distant constellation. And they never stop asking "why?"

Efficacious people have not only an "I CAN" attitude, but also an "I ENJOY" feeling. They seek problems to solve for themselves and to submit to others. They delight in making up problems to solve on their own and find the problems that have universally escaped understanding to be a challenge. They enjoy figuring things out themselves, and continue to learn throughout their lifetimes.

The capacity for wonderment and awe represents the best of humanity, the heights of what we can accomplish through ingenuity, persistence, and cooperation.

The most beautiful experience in the world is the experience of the mysterious.
Albert Einstein.

So, take the advice from Bill Foster who admonishes us to: "Practice being excited."
