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## Why Do We Explore?

(Thomas R. Baker)

Go out into your own backyard some clear, moonless evening in a dark region and gaze heavenwards. There is a plethora of stars above in patterns familiar to all of us. They are dancing about and swirling in a cosmic fugue and delicately arranged in a myriad of sparkling sizes. The spiral of countless orbs are lit with different amounts of brightness amongst their brethren. As flimsy as soap bubbles, they are. But each star is a study of potential opportunities for the chemical processes of life. Life other than our own human race is beyond the consciousness of who we are on this planet. (We cannot possibly conceive of it except in the brilliant minds of the scientists, poets and the science fiction writers.) Let us try anyway, shall we?

At this moment, on a planet far and away from our simple existence, there is life. Perhaps it is gazing, too, out of the fringes of its own breathable atmosphere during some similar, clear evening. The only tools these other beings have are innocuously simple enough: vision and an open mind. How incredibly wonderful are these tools!

Assuredly, this life form is gesturing skyward with a claw, hoof, or tentacle. Pointing to its own set of stars swirling above the open-air classroom of students. They are standing together under this darkened black-velvet sky with patterns of constellations familiar only to them. Our tiny sun may be the one they are referring to at this moment as they marvel at the expanse of star-infused space. A teacher for all of them is leading the lesson. Imagine the voice used by this elder eliciting these profound thoughts. This creature with a great and open mind is saying in the languages of many like him or her, "Behold my children, the only thing greater than yourselves." The alien audience is in rapt attention. They are enthralled, mesmerized, fascinated, humbled, excited, contemplative, and poetic. Their sagacious instructor is held in reverential esteem with those eloquent words. Each student is thinking of their own unique answers to the questions posed. They are spellbound by the infinite possibilities.

A quiet and thoughtful silence falls over the group. The instructor has tears abounding in his or her eyes. But the vision possessed is sharp and resolute. The wise words continue to the group: "Every life comes to an end, when Time demands it. A life must be mourned only when it is wasted." A murmur comes from the group as each life form nods in agreement. The

instructor smiles slightly and gives these directions. "Go forth, stand upon one another's shoulders. Leave a positive part of yourself behind in this world, our tiny planet. Give your heart willingly to another one you love. Grow a garden plot. Seek knowledge." There is a pause. Tears are swept away from a stained face. The teacher points off into the distance and dismisses the students. "Go and explore the worlds beyond this one." Class is over, but no one is in a hurry to leave the site. Eyes are cast upon the heavens again, seeking an answer or a shred of evidence of life elsewhere.

And yet, these swirling galaxy arms in deep mystical silence cannot betray the knowledge of life beyond what we call our own home. What **is** beyond? In an ocean of space too broad to cross the yawning distances, except with an open mind, the question becomes: are **we** the only ones beyond? What of life elsewhere? The lives the distant star travelers touch will be musing over the countless queries, in the tongues of many of their beautiful and unique languages. Asking again and again these same questions from that list of many others: "Who are we? Are we alone in this void? With only one voice? Who speaks for us? Is our Cosmos empty?"

Not knowing, they will say, is troublesome. It is terribly limiting. To touch space beyond ourselves means we **will** eventually touch one another. We must know, and know, and know. Nothing less than absolute truth is acceptable. Otherwise, it is a betrayal of everything we are.

Without an immediate answer, the claw, hoof, and tentacle wave in dispiritedness, disappointment and with overwhelming sadness toward these icy points of distant light. Secrets of discovery shall remain (for the moment) unshared. Life may be resigned in its fate in never knowing in their tiny march of days as defined by their lifetime. So too, must their hearts stop beating. Knowledge begins its reach with its ride coupled with exploration. Yet, it takes a concerted and strident effort, and a strong and resilient push to reach. Our world-wide squabbling here, on this planet, must stop, if only briefly, and the quest to know beyond the limits of our breathable atmosphere must be satisfied.

Must we face such solitary confinement? Banished to a life of aloneness? Now ask amongst yourselves on this planet, must we continue in not knowing of what lays beyond this fragile atmosphere we call home? Are we the only passengers in this universe of ours? We are on a mere dust mote

known only as Terra of which we call ourselves. This riddle is vexing. Perhaps one day the call will come, from that distant star, that flimsy soap bubble. Could it be from the spiral arm of Sagittarius? Or, is it the one perhaps off of Orion's Belt near the Pleiades? There must be a planet orbiting a sun amongst all of those flimsy soap bubbles. Its sun is most certainly a life-giving hydrogen/helium fusion furnace to someone, somewhere. Perhaps. And **we** will answer.

Why do we explore? Therein lies a tale of intrigue and mystery as old as the stars themselves. The next person sent on a voyage to the greatest frontier of them all beyond our tiny planet should be a poet. Think of the descriptions. Imagine the spectrum of written words both metered and unmetered. That is the point now, isn't it? To engage our senses and to describe as fully as the poet's mind will permit. The deepest, most introspective thoughts will be made during our explorations while we sojourn into some achingly distant void. Every idea we make about life elsewhere is conjecture - but it is conjecture based on a solid foundation of ingenious conclusions, drawn from the brilliant minds of - you've guessed it correctly - explorers.

Indeed, the behavior of an open-minded human is extraordinary: and not unlike the alien on the other hypothetical planet postulated earlier, the backyard scientist uses the best tool of all - his/her own mind. It is an incredibly powerful tool. (There are two comprehensive methods to use it. Induction is looking for a pattern. And, deduction is using logic to explain a concept.) And, most extraordinary of all, are the unexplainable and still-fantastic bursts of inspiration a human mind can have. These occur in sudden fits of our dreams, nightmares and simply waiting in line at a grocery store. To explore is to be inspired. It is the key.

We reach to each other here, because we must. We touch one another, because it is in our very blood, and our souls. Stay with me, for a moment. Here is a thought experiment for you, my dearest readers, one to engage your minds. Somewhere, in the star-studded Milky Way, there is a tiny life-giving planet in orbit. This planet has a land/water ratio that just might be similar to Earth's. There is a breathable atmosphere. One or more of those geologically-unique continents of land harbors intelligent life. Structures of exotic patterns and building materials protect the inhabitants from the incessantly moving atmosphere-driven elements. (Creature comforts are emphatically universal!) Zoom into one of those homes. Two of the

upstairs windows are still lit. The bottom floors have gone dark for the circadian demand of rest. I imagine a great and wise being, sitting for a moment, unable to sleep, at a small table on the second floor in one of those rooms.

A large picture window opens to a courtyard imbued with plant life. Its leafy structures exude unusually beautiful patterns. His planet orbits perhaps, two suns. Twilight begins; the suns set. Dual shadows betray the evening as it elicits silent, reflective thoughts on a most productive day. Our philosopher is writing on a yellowed sheet of paper. That great mind speaks aloud: "If I can look back on my simple day, and I am happy that I harmed no other living creature with my actions or inactions, then that is success. Indeed, the words 'I love you' are transcended by the words, 'Let me help.'" These are the words of an explorer, a traveler. They are from a being with an open mind. This great mind looks to the skies above, as well.

Summarizing those simple words with deep feeling, thinking there must be life elsewhere, he/she sighs deeply. The next words are spoken to no one. It is a simple entreaty: "Let me reach. Let me touch. Let me discover, uncover, discern, apprehend, appreciate and understand. Let me explore."

Our learned philosopher gazes silently out the window for a long moment. Profound silence follows as the next thoughts are written after the first ones. They are deep and existential sentences. The world of this great poet is precisely summarized in one phrase: "The only thing we have found in this empty space, that makes it all bearable, is each other as we reach with a simple touch. We are capable of so many beautiful dreams, and yet we have so many terrible nightmares." Exploration begins in the mind. It starts with the self-evaluation of one's soul; as life's singular purpose linking with other fellow beings.

To explore brings us knowledge. It must. I do concede that. But isn't imagination more important than knowledge? Indeed, knowledge is a subset of imagination. If that is the case (and I believe that firmly), I offer this corollary: wonder is more important than imagination. And even more important than that is the long-term answer to the question, "What if?" posed by an inquiring mind. Then may the pen or pencil be nibbled for some time as we ponder that question with tools in and out of some laboratory somewhere on this planet of ours. Tools extend our clumsy reach into the heavens, deep into the oceans, or inside a molecule. It is a profound thought that our probing minds and eyes ask the questions that lead us to "just



around the corner", "under the rock", "inside the geode", "beyond the molecular structure of a snowflake crystal", or "in the butterfly's chrysalis". Within all of these, which minutely comprise our natural world, lay the questions without answers. Or, put more succinctly, we discover that we have answers that lack the questions.

Not for long, however. It is often said, that a good question is more important than a good answer. We cannot know the unknown, however. It is with time, the activity of "pushing the envelope", working with others, refining our thoughts and addressing aggressively solutions to work well at that moment, that will bring results. It is a sort of "dynamic programming". The answers we discover at the moment of discovery are made more complete with - still more discovery. Change is inevitable. Knowledge is self-correcting and must be made sharable with others.

It is the mind of the human that is the greatest tool of all. For no concrete object is as sharp as the mind. The mind, working with its attendant hands, working collaboratively with others, working in concert, will produce still more tools.

Tools will extend the reach of we, the explorers. They are made to address the questions posed by, and for, all of us. Tools are then made finer by the coordinated stance we take upon another great explorer's shoulders. As they sharpen, they become less clumsy. They can be duplicated in other laboratories and in the field. They enable that reach of the explorer no matter the language. We think, feel, see, do, touch, extend, build and rebuild. Then we repeat such steps. Of course, the scientific method (with its attendant, dry mechanical terseness) was not touched upon here since it is implied. No, these words you are reading now are for the average backyard scientist who reaches with his or her clumsy tools. For it is within the confines of everyone's backyard the greatest discoveries of all that will be made. This is why we explore.

Thomas R. Baker - September 13, 2017