Dear Taranga,

Now that the celebrations are receding and the infant boy who has just entered into our family fold is tripping and walking, I thought I would write you this letter. Well, your son reminds us of your childhood when you fell off the steps in that great silk lehenga or when your brother fell face down wearing his short new pants. Technology now brings us closer as we can watch him on Skype or WhatsApp. We are delighted to watch his antics and hear his scrambled screamings.

But let me tell you that babies come into the world with many innate abilities. These abilities develop slow or fast depending on various environments created by us.

I recall the story of Isidor Isaac Rabi, who was awarded the Nobel Prize in Physics in 1944 for his discovery of nuclear magnetic resonance that has today led to MRI scans. A press reporter once asked Rabi, “What made you a scientist?”

He answered, “My mother made me a scientist without ever intending to. Every other Jewish mother in Brooklyn would ask her child after school, ‘So? Did you learn anything today?’ But not my mother. ‘Izzy,’ she would say, ‘did you ask a good question today?’ That quality—asking good questions—made me a scientist that I am today.”

Mothers make great men and women. Never discourage your child or dissuade him from asking questions. It is his birth right. Children have the uncanny sense of asking questions at the most inopportune moments. If you are not able to answer his question, then find a source, a reliable source.

When asked how he came up with the theory of relativity, Albert Einstein said, “I asked myself childish questions and proceeded to answer them.” Children have a confusing curiosity to know things and relate them. Leonardo da Vinci said, “The desire to know is natural to good men...If you are good men or want to be..."
good, you should ask questions and get answers, of course!"

Let me tell you the story of one of the greatest scientists of all time.

Passionately Curious
He did not speak until age 3. When he did, it is only to ask a strange question. When he was two years old, his pregnant mother told him that a surprise was waiting for him. The child was naturally looking forward to an exciting new toy. After a few months, his mother showed him his new baby sister Maja. He threw a queer look at the infant and after a while asked, “Where are the wheels?”

Can you guess who? Albert Einstein. That curiosity drove him down the road of discovery and exploration. He often said, “I am neither especially clever nor especially gifted. I am only very, very curious.”

Once at the age of five, he was bed ridden; his father Hermann gave him a magnetic compass. It was the first time he saw a compass. The new device pulled him out of the bed stirring his intellect. Poor thing was obstinately pointing to the magnetic north, whatever he did, shake, twist or turn. Fever had gone but the passion continued. He was curious to know “something behind things, something deeply hidden.” He “never ceased to stand like curious children before the great mystery into which we are born.”

Encourage your child in his curiosity, never stifle it. Give your child freedom of exploration. Allow him to wander in the neighborhood of intellectuals and interact with them tugging the curiosity along. If you kill his curiosity, he might prejudge you to be incapable. Many parents agree that they are stumped by the science questions their children ask. While answering, you try to learn. Children’s inquisitiveness kindles interest. Your encouragement inspires them.

Learned Helplessness
Walk into any home with small children, you will hear the father chiding his child, “Don’t do it! You will hurt yourself; “You are good enough only for second grade!” We inculcate fear, discourage inherent abilities, and make unfounded judgments. We prepare our children for helplessness.

Do you know that a fully-grown domesticated adult elephant weighing several tons is just tied to a twig with a thin rope? It won’t escape; in fact it feels that it cannot and won’t even try. They are trained in helplessness. On the other hand, a young elephant is tied to a large tree trunk or pole. Initially the baby elephant cries for freedom, tries hard. Then it gives up hope and realizes its helplessness. When it grows, it continues with a trained pessimism.

Do not let your child fall prey to this “learned helplessness.” When this manifests, individuals gradually develop disinterest even to attempt simple tasks, usually the result of repeated failures or scorn by a superior. When he falls prey to this, give him a gentle push. Encourage him to unlearn.

You are his first teacher and of course his best teacher. Some of the
greatest scientists were the products of their mothers alone. Read an extract from a biography by Francis Arthur Jones on Thomas Alva Edison (published in 1907):

“I did not have my mother very long but in that length of time she cast over me an influence which has lasted all my life. The good effects of her early training I can never lose. If it had not been for her appreciation and her faith in me at a critical time in my experience, I should very likely never have become an inventor.

She believed that many of the boys who turned out badly by the time they grew to manhood would have become valuable citizens if they had been handled in the right way when they were young. …. I was always at the foot of the class. I used to feel that the teachers never sympathized with me and that my father thought that I was stupid, and at last I almost decided that I must really be a dunce. My mother was always kind, always sympathetic, and she never misunderstood or misjudged me. But I was afraid to tell her all my difficulties at school, for fear she too might lose her confidence in me.

One day I overheard the teacher tell the inspector that I was ‘addled’ (mentally ill) and it would not be worthwhile keeping me in school any longer. I was so hurt by this last straw that I burst out crying and went home and told my mother about it. Then I found out what a good thing a good mother was.”

Edison’s mother defended him before his teacher and then decided to take him out of the school and homeschool him. That ultimately had a big impact on the man that he became.

Researchers debate whether those great persons are born geniuses or inherit creativity from their parents. Child motivation and development are no doubt important factors in the ultimate growth. A nurturing environment deserves more prominent place than DNA. Neither genetics nor environment appears to work alone. Take the case of the Curies, a complicated combination of both. The Curies were the most successful “Nobel Prize family.”

Nobel Family – Noble Family
Marie Curie lived in some of the toughest circumstances. Then with relentless work and fanatic faith, she won the Nobel with her husband, Pierre. And one more on her own!

Her daughter, Irène Joliot-Curie, won the Chemistry Prize in 1935 with her husband. Her second daughter was the director of UNICEF when it won the Nobel Peace Prize in 1965. That’s a total of five Nobels in the family. Hunger in the family??

Human Photocopies
Until October 2014, Lawrence Bragg was the youngest Nobel Laureate. He shared his Prize with his father, William Bragg for the analysis of crystal structure; effectively the duo founded modern crystallography!

Danish scientist Niels Bohr won the Nobel Physics prize in 1922 and his son Aage Bohr followed him with a 1975 Nobel. The Nobel Prize in Physics 1924 was awarded to Manne Siegbahn and his son Kai Siegbahn received a Nobel in Physics in 1981. Hans Karl August Simon von Euler-Chelpin was awarded a joint Nobel Prize in Chemistry 1929 and Chelpin’s son Ulf von Euler received a joint Nobel in Medicine in 1970.

Well, we do not have a formula to create human photocopies. Intellectual capacity could be inborn but a gentle nudge in the right direction paves the way for future prominence. Your son deserves such a nourishing atmosphere. Add encouragement, experience and affection.
Foster intellectual inquisitiveness and independent thinking.

**Feynman is Not Joking**

Richard Feynman was a joint recipient of the Nobel Prize in Physics in 1965 in quantum electrodynamics. His mother sparked his curiosity, fueled his interest. His father’s influence on him was phenomenal in developing in him unorthodox thinking, and ability to learn and teach something new. In Feynman’s words:

“We would be reading, say, about dinosaurs (from the Encyclopedia Britannica). It would be talking about the Tyrannosaurus rex and it would say something like, ‘This dinosaur is twenty-five feet high and its head is six feet across.’

My dad would stop reading and say, ‘Now, let’s see what that means. That would mean that if he stood in our front yard, he would be tall enough to put his head through our window up here.’ (We were on the second floor.) But his head would be too wide to fit in the window.

Everything he read me he would translate as best he could into some reality. . . . I wasn’t frightened that there would be one coming in my window as a consequence of this. But I learned from my father to translate: everything I read I try to figure out what it really means, what it’s really saying.

I’ve been taught, so to speak – like someone who was given something wonderful when he was a child, and he’s always looking for it again.”

**Great Gathering of Geniuses**

Arthur Kornberg took his son Roger along for his Nobel ceremony in Stockholm. Roger recalls, “I can recall vividly traveling to Stockholm in 1959, at the time of my father’s award. I have always been an admirer of his work and that of many others preceding me.”

It was an inspiration to watch his father in the great gathering of geniuses. Roger D. Kornberg himself went on to become the winner of the 2006 chemistry award. He said, “I guess it helps to have a father who is a Nobel laureate.”

Roger Kornberg once said, “Both my parents had fine scientific minds and taught by example how to approach questions and problems in a logical, dispassionate way. Science was a part of dinner conversation and an activity in the afternoons and on weekends. Scientific reasoning became second nature. Above all, the joy of science became evident to my brothers and me.”

**Learn From Nature**

Children like to explore and expand. Take him out but with a lesson learned. Knowledge comes from Nature.

When his school teacher explained about the bird’s flight on the black board, none understood, including Abdul Kalam. The committed teacher took all of them to the sea shore of Rameswaram. As the boys enjoyed the roaring sea waves knocking at the sandy hills in the pleasant evening, the teacher explained the marvelous flights of birds. Within fifteen minutes, all the students understood bird dynamics. This is real teaching. For Abdul Kalam the seeds were sown on the sea shore.

Abraham Lincoln wrote to his son’s teacher, “. . . . but also give him quiet time to ponder over the eternal mystery of birds in the sky, bees in the sun, and flowers on a green hillside.”

Success is intentional! Excellence is not by accident. Culmination of brilliant ideas, collected knowledge, accumulated wisdom and the results of tireless efforts of great men brought us to the present high level of life.

Now it is generally accepted that present day children are sharper than we were. I constantly believe that it is achieved because of the efforts of the modern day mothers who prod them and feed them. Apples must have fallen on more heads before Newton. The only difference was what was inside Newton’s head and who nurtured it.

Looks like I wrote a fairly long letter.

With love

Dad