Tiny Specks With Huge Footprints

By: Rick Poling

Earth's atmosphere extends about 326 miles upward, but from a mere half-mile up, we humans appear as tiny specks. Can such tiny specks significantly impact such a large world?

You bet they can. And do. And, in many ways, they can do so now like no "specks" ever before them.

Consider for a moment that the current generations occupying the Earth are the first in its 4.5 billion year history (yes, with a "B") with the power to actually destroy it. Each August marks anniversaries of the two times nuclear weapons have been utilized in war: August 6, 1945, when a uranium bomb was dropped on Hiroshima, and August 9, 1945, when a plutonium bomb targeted Nagasaki. The immediate death toll of the two bombings was over 200,000, with many thousands experiencing slower deaths afterward. And, those were both "small" bombs, in terms of destructive power, compared to those later developed. Current nuclear warhead estimates exceed 20,500 world-wide among the known countries with nuclear weapons: Britain, China, France, India, Israel, Pakistan, Russia and the United States (not including the countries commonly thought to either have or to be close to having nuclear weapons, such as Israel, North Korea and Iran).

There is enough nuclear destructive power currently in existence to destroy human life on Earth and its current ecosystem eight times over.

Just think – a mere 72 years ago (prior to a British break-through in uranium-235 research and a letter two months later in August, 1939, to President Roosevelt by Einstein and others advising of the potential development of atomic weaponry), there was not even a glimmer of thought that we humans had the ability to cause any sort of irreparable global harm to our planet. We then still blissfully lived under the huge umbrella of time occupied by multiple centuries of our human ancestors, in which the Earth could absorb or easily repair itself of any harm we tiny human specks might cause. That all changed, seemingly overnight, in August of 1945. We tiny specks had developed the power to produce our own Armageddon.

As the Manhattan Project physicists who developed those first nuclear bombs predicted, once the genie was out of the bottle, there was no way to put it back. All we could do was try to manage and contain it. To date, the U.S. has spent over 7 trillion dollars (roughly half of our current deficit) for nuclear weapons production and for the personnel, equipment and technologies necessary to safeguard and potentially "deliver" the warheads. With the emergence of new potential enemy nations obtaining nuclear weaponry (such as North Korea and Iran), an arms race between India and Pakistan, the potential threat of terrorist groups acquiring nuclear weapons, and the alarming quantities of nuclear weapons material unaccounted for from the time the U.S.S.R. disbanded and its oversight of nuclear programs disappeared, we have had little choice but to continue nuclear weapon related expenditures to both assure our own protection militarily through deterrence, and also to try to contain risk worldwide. No end is in sight either; the Obama Administration and Congress have planned spending of approximately 80 billion dollars over the next decade for nuclear weapons programs and upgrades to production and containment facilities.

In addition to nuclear threats, many contend the same 72-year period has produced other man-made threats to long-term human existence and the world as we know it. The world-renowned "Doomsday Clock," which has been maintained by Board of Directors of the "Bulletin of Atomic Scientists" at the University of Chicago since 1947, is a symbolic clock face with the hour hand on midnight and the minute hand positioned a number of minutes before midnight. Originally, the Doomsday Clock represented the threat of global nuclear war, but since 2007, it has also reflected threats presented by "climate-changing technologies" and also by the developments in life sciences and nanotechnology "that could inflict irrevocable harm."

Climate-change, or "Global Warming," has been hotly contested (pardon the pun) in the U.S. over the past several years, and although its causes (and whether human industrial and energy usage and generation activity needs to be altered) are still widely debated in the U.S., there is now almost universal scientific agreement that the Earth's global climate is indeed changing relatively rapidly. Nine of the ten hottest years in recorded history have occurred in the last thirteen years. The acceleration of ice melting in Greenland and Antarctica has caused an upward revision in global sea-level rise estimates. The Arctic ice cap, which reached a record low volume last year, has lost 40% of its centuries-old ice area in just the past 30 years. Droughts, flooding, tornados, and storms are becoming more severe and destructive as the planet's water cycle and weather patterns become more disrupted by increasing levels of energy from the sun in the atmosphere (this even results in greater snowfall in some areas in winter), and the atmosphere's attempts to adjust and compensate create imbalances and extremes in wet and dry.

The last 72 years also brought unprecedented exponential surges in technology and productivity that introduced to the world air-conditioning, televisions, hundreds of electrical and battery-powered appliances and lights, the proliferation of automobiles and roadways, air and space travel, steel buildings and sky-scrapers, computers, the internet, and numerous other modern technologies – all new to the world, and all resulting in equally unprecedented increases in the burning of fossil fuels to power industry, automobiles, airplanes, and electricity generation plants. It also brought the introduction and proliferation of an entirely new array of assaults to the Earth: pollution of multiple sorts to air and water, and a deluge of trash and hazardous waste.

And, of tremendous significance when considering the exponential demands on the Earth's resources over the last 72 years, the world's population has more than doubled, growing from less than 3 billion people to now nearly 7 billion! How's that for increased demand!

The bright side? With increasing attention to these issues (an ostrich approach benefits no one) and with the global cooperation that seems to be increasing on all of these fronts, there is a very real prospect that human action and intervention could halt or even **reverse** the progression of these threats to our world and to humankind (such as our recent reversals of several forms of pollution). We tiny specks have numerous significant opportunities to shift our huge footprints, initially feared to be moving only in harmful directions, to more positive paths. We are no longer spiraling head-first through the years without regard to risks or long-term consequences.

And the even brighter side: we each have multiple daily opportunities to leave perhaps the biggest footprints of all: a positive impact on our family, friends and community. Happy tracks!

QUOTE OF THE MONTH: "Leave a lot of happy tracks as you go down life's road."
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