

## The Evolutionary Impulse to Expand Beyond Earth

By Steven Wolfe

The purpose of human space exploration cannot be found in human desires and ambitions alone, but must be viewed as a phenomenon actively encouraged by universal forces.<sup>1</sup>

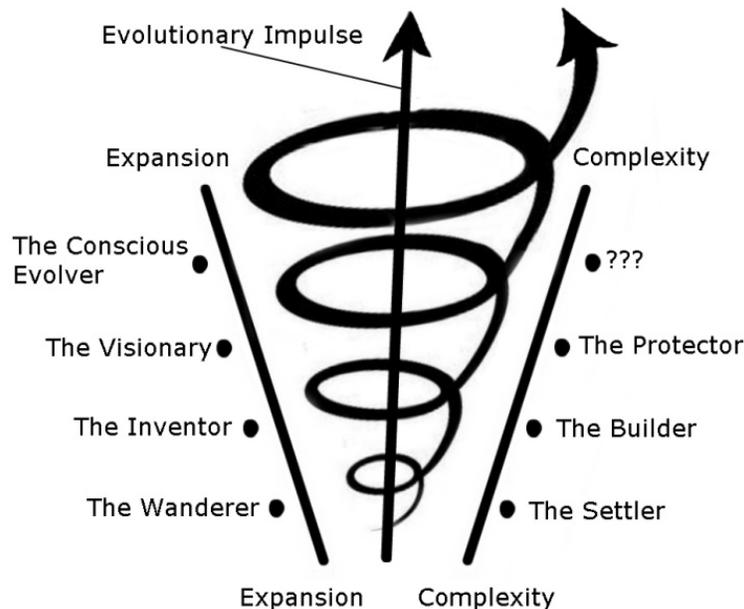


Figure 1. The Endowments.

### Introduction

What is it that drives many in the space arena relentlessly to push the boundaries of human space flight? Those who feel this drive often speak of it as a *calling*. They are drawn to it beyond their own ability to articulate fully why they are so driven. Skeptical observers have compared this passion for space to religious fervor. They may be right. President George W. Bush put it well when he said that space exploration and discovery is “a desire written in the human heart.”<sup>2</sup>

I call this difficult-to-define desire the *evolutionary impulse*, which is at the heart of the philosophical perspective that I present in my book, *The Obligation*.<sup>3</sup> The evolutionary impulse, however, is much more than the desire to expand into space. It is a universal force that applies to all things in nature and the cosmos.

<sup>1</sup> Frank White, *The Overview Effect: Space Exploration and Human Evolution* (Boston: Houghton Mifflin, 1987).

<sup>2</sup> George W. Bush, “A Tribute to the Crew of the STS-107,” NASA Lyndon B. Johnson Space Center, Houston, TX, February 4, 2003.

<sup>3</sup> Steven Wolfe, *The Obligation* (New York: Smashwords, 2013) [www.theobligationbook.com](http://www.theobligationbook.com).

The essence of my understanding of the evolutionary impulse comes from the spiritual teacher, Andrew Cohen. He writes, "The evolutionary impulse is the energy and intelligence that burst out of nothing, the driving impetus behind the evolutionary process, from the big bang to the emerging edge of the future.... The evolutionary impulse is felt as a sense of tremendous urgency, an ecstatic urgency. At the level of consciousness, it is experienced as a sense that something unthinkably important must occur NOW."<sup>4</sup>

To understand how the evolutionary impulse applies to the human drive for space, we should first consider its role in the context of all of creation.

### **Universal DNA and the Evolutionary Impulse**

Carl Sagan famously said, "We're made of star stuff, we are a way for the cosmos to know itself."<sup>5</sup> We know that every particle in our bodies existed 13.8 billion years ago at the moment of the big bang. The complex chemicals that make up our bodies were forged in the furnace of long dead and distant stars. Origins of life scientists focus their attention on what sparked the chemicals in the primordial soup to assemble into the first living organism. But I feel it's more appropriate to view the phenomenon of life as the result of a process that includes all of cosmic history.

There are two ways to think about cosmic evolution. Either it is the result of random occurrences, or it is a designed process that has a beginning, middle, and end. I state in *The Obligation* that the universe is similar to any living organism on Earth in that everything about the cosmos was determined prior to its very inception. This is not a statement of theology; it is a statement of probability. By design, there was a very good probability that the galaxies, stars and planets like ours would evolve the way they have. Just the way an oak tree, by design, has a very good probability of creating acorns. In this regard, I am suggesting that evolution, as defined by Charles Darwin, is not an altogether random process. Instead, it is an integral part of the dynamic unfolding of a universal DNA code.

The muscle, or labor force, of creation are the competing forces of *expansion* and the tendency toward greater *complexity* with the help of gravity. These two qualities, *expansion* and *complexity*, are the resonating poles between which all of creation is takes place. It is where the creative force of the evolutionary impulse is at work in accordance with the universal DNA. They represent the yin-yang polarity described in Chinese philosophy.

These complementary forces of expansion and complexity play out over and over throughout all of creation. In this way, the evolution of life on Earth is a process of expanding outward to fill all available space and at the same time becoming ever more complex. The evolutionary impulse guided these forces and created the beauty and wonders of the natural world. Eventually our young living world emerged out of the cold,

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<sup>4</sup> Andrew Cohen, *Evolutionary Enlightenment: A New Path to Spiritual Awakening* (New York: Select Books, 2011).

<sup>5</sup> *Cosmos* [TV Series documentary hosted by Carl Sagan], Episode 1, 1980.

dark void of space, green and wet, just as such a world was intended to from the beginning of time. Once that living world had fully matured, a unique species emerged that was destined to fulfill a very important obligation.

### **Gaia Hypothesis**

It is the relationship between the Earth and humankind that is central to the philosophical perspective articulated in *The Obligation*. In the previous section, we discussed the essential forces that act upon the whole living cosmos. As we focus on our own species and its place in the biosphere, we will see how those same forces are at work right here and now.

It starts with James Lovelock's Gaia Hypothesis,<sup>6</sup> which explains in great detail how the biosphere can be viewed as a single organism. All of the life systems, plants, mammals, sea life, oceans, and atmosphere—all of it—are parts of a living whole. In much the same way that billions of cells in our body cooperate to give us a sense of a single life form, so it is with the Earth as a whole—as it is also with the cosmos. Every living thing on this planet is an integral part of the living biosphere.

Beginning four billion years ago, the world evolved from single-cell organism to a planet filled with lush forests, teeming oceans, and species of every kind coexisting on an ecologically balanced world. Everything was great. The world, Gaia, had matured. She was now ready to do something that every one of her constituent species took for granted: reproduce.

Gaia's reproductive system required the emergence of an agent species capable of manipulating the planet's resources to build seedpods suitable to carry life to hospitable locations beyond this Earth. That species turned out to be *homo sapiens*; that strange biped that was really good at throwing rocks.

At some point, the universal DNA markers awakened in human consciousness essential capacities, which I call the *Endowments* (discussed in detail below). Since the introduction of these Endowments, humanity has been on a 50,000-year-or-more march to get up to speed on how to build the seedpods to carry the planet's life stuff to other worlds—and thereby fulfill our reproductive *obligation* to the planet that gave us life. Driving us forward, of course, is the evolutionary impulse, which first alighted in our consciousness the moment one of our ancestors looked to the heavens and wondered what was up there.

This idea of humanity as the agent of the planet's reproductive system can be difficult to get your head around. We think of ourselves as special, unique in the world. And we are. We are self-actualized and capable of fabulous achievements, as well as acts of monstrous destruction. But, there is nothing about who we are—or *think* we are—that precludes the possibility that we may have a critical role to play as part of our ecosystem. We are like the bumble bee that buzzes from flower to flower gathering pollen for her hive to make honey, oblivious to the critical function it plays in the

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<sup>6</sup> James E. Lovelock, *Gaia: A New Look at Life on Earth* (Oxford: Oxford University Press, 1979).

reproductive system of the flowers. Until now, we too have been oblivious to the fact that our march into space has been fulfilling an essential function for the organism of which we are a part. Did we actually think we were given this world with nothing expected of us in return?

But acquiring the ability to build interplanetary seedpods has put a huge strain on Gaia. The planet is at risk and few will argue that humankind isn't at least in part to blame. Some people say we are a parasite or a cancer on the planet. However, I think it is more accurate to say we are like an embryo in a mother's womb. As the fetus grows, it puts stress on the host mother. As humanity has built the requisite industrial capability to make space travel possible, it has similarly put a strain on the mother Gaia.

Fortunately, and perhaps not surprisingly, as space technology achieves maturity and our first formative steps are taken off this world, the planet is beginning to heal itself. Many are driven to be part of environmental restoration with a sense of urgency equal to what it took to develop space technology. In this regard, I believe there is no coincidence that the environmental movement went into overdrive at the same moment we were touching the moon. The child's birth gives way to the mother's healing.<sup>7</sup>

### **The Six Endowments**

To understand the Endowments, let us come back to the question posed at the beginning of this essay: What is it that drives many in the space arena to push the boundaries of human space flight relentlessly? As discussed, at a basic level we are driven by the *evolution impulse*. Yet practically speaking, space activists are more likely to point to a range of more familiar motivators to explain their interest in space migration. Distilling and examining these motivators provide evidence about the specific traits needed to fulfill the space migration obligation. The Endowments, there are six, are the essential human characteristics that have allowed our species to thrive and take full command of the planet and all her resources. It is also these same Endowments that have enabled us to evolve into a spacefaring species. The following are the Endowments with a brief description of each:

**The Wanderer:** Humanity has an innate desire to know what is on the other side of the hill or mountain or ocean. Hostile terrain has never stopped us. The expanse of the ocean did not intimidate the earliest explorers either. Neither did the frozen tundra or deserts. Now that every square foot of the globe has been surveyed and partitioned, owned or protected, the only way our desire to wander can be adequately satisfied is by looking upward. The Wanderers among us today yearn to go to the Moon and Mars and beyond.

**The Settler:** The Settler is always looking for a good spot to rest and make a home. At first in caves and huts and later in towns and cities, we have been very successful at building barriers that separate us from the many threats in the natural world. Though this inclination has desensitized us to the environment—which has created an

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<sup>7</sup> Marsha Freeman, *Krafft Ehrlicke Extraterrestrial Imperative* (Burlington, ON: Apogee Books, 2009).

imbalance that we must now address—it also has served to prepare us to build off-Earth cities that will protect us from the unforgiving conditions in space.

**The Inventor:** The Inventor wanders in the abstract confines of her own mind ever looking for unique ways to understand and utilize the resources of our environment, primarily for her own productivity, comfort, and pleasure. Each invention led to other inventions and over millennia this Endowment has brought us to the point where our understanding and ability to manipulate the physical world is nearly limitless. The Inventor has taken us to the Moon and back and is now at work to bring us into space permanently.

**The Builder:** The Builder is the artisan. Once the new tools and new ways of doing things have been developed by the Inventor, they are ready to be replicated. It is by reproducing invention that systems become complex. The light bulb is a marvel as much for its simplicity as for its function. Put into universal use, however, the electric light represents enormous complexity. The builder will take the prototype space habitat and refine and replicate it thousands of times throughout the solar system.

**The Visionary:** The Visionary is an evolved form of the Inventor. She is more than a problem solver. The Visionary envisions potential futures based on real or imagined conditions. We celebrate the Visionaries who act on their dreams and are successful. The Visionary is the one most responsible for the advanced civilization we live in today. It is only with the Visionary Endowment that we will be able to envision a multi-planet existence that we will one day create.

**The Protector:** With the Protector Endowment, we have the ability to conduct environmental assessment with the purpose of threat avoidance. Like the Visionary, The Protector has enormous capacity to envision all possible futures. However, the Protector's visioning is oriented toward protecting and preserving a given population or even the species as a whole. The Protector realizes that we had better take decisive action or there will be dire consequences. As we become ever more aware of the dangers that threaten human existence—from asteroid impact to bio-terrorism to pandemics to global climate change—we sense the survival imperative to do something before it is too late. In addition to the preventive measures we can take on Earth, the Survivor recognizes the need to diversify the population into space to guard against the real possibility that some planetary catastrophe might result in a total loss of human life. Ultimately, space settlement as an insurance policy against extinction will be one of the most powerful motivators for expanding into space.

Taken at face value, there is not much to disagree with regarding the descriptions of the Endowments. This list of human traits pretty well summarizes the capacities that have allowed us to evolve to a high level of civil and technological order.

Now let us return to our earlier statement that humankind is obligated to colonize space, not only for our own survival, but on behalf of all life that emerged on this planet. We see that the Endowments dramatically brought civilization to the threshold of space. The

inventors who lived 10,000 years ago may not have given space travel a single thought, yet they were as integral a part of building the bridge into space as any NASA engineer. The fact that these Endowments appeared in human consciousness is an indication, if not proof, that human migration into space was a strong probability long before we had any idea how to accomplish such a thing.

Our six Endowments can also be organized as emerging in evolving stages in alignment with either the expansion or complexity of universal forces mentioned earlier (see Figure 1). In the yin/yang context, expansion is the yang, masculine and aggressive, force. Complexity is the yin, feminine and nurturing, force. The emergence of each Endowment corresponds to a general evolutionary leap in our consciousness. The six Endowments fall naturally into three pairs, with one aspect aligning more closely with the expansion aspect of evolution and the other aligning more closely with the complexity aspect.

The first pair contains the Wanderer and the Settler Endowments. The Wanderer strikes outward, the expansion nature, and the Settler wants to find a good place to build a home, complexity.

The second pair includes the Inventor and Builder Endowments. The Inventor is expanding his view to solve problems; the Builder puts those inventions to use in ever more complex applications.

The final pair contains the Visionary and Protector Endowments. The Visionary sees an expansive future; the Protector sees future risks and wants to devise complex systems to ensure our safety and survival.

Organizing the Endowments in this way may seem tangential to the central tenet of the obligation perspective. However, I think it is important to see the unfolding of these capacities in a naturalistic context. By conforming to patterns seen throughout nature, the emergence of the Endowments in our own consciousness is recognized as logical and appropriate.

We are at the threshold of expanding into space, but by all measures we are still a long way from anything resembling an off-world civilization. The final impetus may in fact require something more than the six Endowments alone. To get us over the threshold I am convinced will require the emergence of a *Seventh Endowment*.

### **The Seventh Endowment**

Frank White in *The Overview Effect* said, "Humanity ... has the singular opportunity to guide and shape its own evolution, working in conscious partnership with the whole."<sup>8</sup>

Earlier I said that we are like the bumble bee, oblivious to the reproductive role we play for the ecosystem we inhabit. We have been evolving our space technology for 50,000 years without any idea we were doing so. But, if space migration is an obligation written

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<sup>8</sup> White, *Overview Effect*.

in the heart, why has our human space program been so stagnant for more than 40 years? Yes, progress has been made with the Space Shuttle and the International Space Station, but these can only be viewed as modest and very drawn out follow-ups to the potential envisioned during the age of Apollo.

As much as we are driven to expand out into space, there is an inertia that keeps us bound to the planet. The last thing a fetus wants to do is leave the comfort of the womb. As strong as the desire is for space travel, there remains an overwhelming planetary inertia that is holding us back. For this reason, in order finally to fulfill the obligation, it is necessary to become conscious of the reality that we are already active participants in the evolutionary process. Once we are conscious that evolution happens because of us, we must then decide to take an active role in guiding the direction of evolution. That realization is the emergence of the Seventh Endowment, the capacity to *Evolve Consciously*.

In her book, *Conscious Evolution*, futurist Barbara Marx Hubbard wrote, “We are an integral part of the evolutionary journey. In our genes are all generations of experience. In our genius is the code of conscious evolution. In our awakening lies the pattern of the planetary transition from our current phase to the next phase. Our mind is designed to know the design of evolution toward higher consciousness and freedom.”<sup>9</sup>

If we do not wake up to this unfolding that is already taking place, then there is a high probability that we will not make it. We are an advanced civilization, but history teaches us that all great civilizations rise and then fall. There are plenty of indicators even now that our civilization is past its prime and in decline. Nineteen sixty-nine, when Armstrong and Aldrin walked on the Moon, might have been the high-water mark and it has been downhill ever since. True, our computing technology continues to improve exponentially, but the social framework of our global culture is certainly showing signs of serious wear and tear—particularly in the wake of the 2008 economic collapse. China is the only country with a stated mission to send humans to the Moon in the late 2020s, duplicating a journey that by that date will have taken place 60 years earlier. The point is the longer the delay in attaining a firm human foothold in space, the less our chances are of actually achieving it.

The demand to wake up and engage in the evolutionary process—to be a *Conscious Evolver*—is not just about space migration. Like all the Endowments, the need for the Seventh Endowment exists everywhere: in politics, in education, in healthcare, in corporate citizenship, planetary stewardship, to name a few areas. As I write in *The Obligation*,

The *Conscious Evolver* helps us to see beyond the parochial interests. She sees things in evolutionary terms and is willing to act according to that larger context. Eventually, when the Seventh Endowment takes firm hold in our collective consciousness, there will be little tolerance for actions that

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<sup>9</sup> Barbara Marx Hubbard, *Conscious Evolution: Awaking the Power of our Social Potential* (Novato, CA: New World Library, 1998).

are taken for short-term, selfish gains. In this way we also recognize the Seventh Endowment as the Endowment of the 'we' and not of the 'I.'...

The Conscious Evolver is a masculine Endowment, an evolved version of the Visionary in that he is able to see vast possibilities for the future. The difference is two parts: first, the Conscious Evolver feels a strong sense of the holistic order that already exists in the yet un-lived future, so it's not so much the feeling of being a kid in a candy store, which is how the Visionary can sometimes feel. The Conscious Evolver has a clear sense of how things should be in the future, and possesses a profound desire to bring that future into being. Second, the Conscious Evolver is interested in outcomes that benefit the whole. So we could say that Henry Ford was a visionary, but in the end his vision really had to do with selling lots of cars so that he could make himself rich and famous.<sup>10</sup>

We can also say that Conscious Evolvers have the potential to be directly aware of the evolutionary impulse. This perspective gives them an intuitive sense of the right direction that evolution must take. This recognition creates a tremendous sense of urgency. They feel fulfilled when their lives are acting in accordance with the evolutionary impulse and they feel depressed when it is not. Conscious Evolvers who can place themselves in the flow of the evolutionary impulse are extremely content people. Those who are unable to do so for any reason have a difficult time because they are not able to shut out the call that is constantly ringing in their ears.

The *Conscious Evolvers* are among us and have been. Martin Luther King, Jr. and Mahatma Gandhi would be obvious examples, but there are and have been many in all walks of life throughout history. They are among the prophets, scientists and enlightened thinkers of history. In our time the numbers are increasing dramatically. So much so that today's Conscious Evolvers do not necessarily stand out the way King or Gandhi did in their day.

The space arena has plenty of conscious evolvers, fortunately. People like Frank White, Rick Tumlinson, Peter Diamandis, Elon Musk, and Bob Krone, to name a few, have made it a life mission to usher in a future where the solar system is teeming with human life no longer bound to a single planet. They, and many others, are working hard against planetary inertia that throws up barriers at every turn. I believe they will achieve their purpose, but it will take hundreds and thousands more to step into the fray and be just as earnest in reaching for that goal on behalf of the whole. We need all the Conscious Evolvers to wake up and become active if we are going to become the multi-planetary species we are destined to be.

It seems very appropriate that human expansion into space is a selfless act taken on behalf of the whole. Not all space migrants will be Conscious Evolvers, but the fact that they are leading the opening of space will ensure that it is done with a high degree of care and responsibility. In other words, they will stay close to the evolutionary impulse

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<sup>10</sup> Wolfe, *The Obligation*.

and assist in the evolutionary process, creating a future that is most in alignment with the universal DNA code.

For a lively fictionalized discussion of the principles presented in this paper and more, read *The Obligation* by Steve Wolfe, available at Amazon.com. *The Obligation* is a modern parable about a young Capitol Hill staffer who discovers that the seasoned congressman he works for is far from a typical politician. An obsession over a mysterious inscription on a plaque in the congressman's office sparks the young aide's initiation into a worldview that will challenge everything he thought he knew about space, evolution and humanity. Also visit [www.theobligationbook.com](http://www.theobligationbook.com).

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**About the Author:** Steven Wolfe has been a writer, speaker, and advocate for the advancement of the space settlement concepts and related ideas for more than 25 years. He was a legislative aide for the late Cong. George E. Brown, Jr., where he served as executive director of Congressional Space Caucus. He served on the board of directors of the National Space Society, president of the New York Space Frontier Society, and Advocate of the Space Frontier Foundation. Steve drafted the Space Settlement Act of 1988 for Cong. Brown. The bill was signed into law by President Ronald Reagan as part of the NASA Authorization bill.



**Editors' Notes:** Steven Wolfe's exploration and development of the theory concerning the impulses that drive exploration of all kinds, and Space exploration in particular, are a welcome addition to the *Journal of Space Philosophy*. **Bob Krone and Gordon Arthur.**