

Long-Term Space Inhabitants: Their Needs, Care, and Support

By Lawrence G. Downing, DMin

IMPORTANCE: Science and machines make Space travel possible; humans add soul. Those who manage space travel need to be as creative to care for the humans as for the hardware.

All life forms have limitations. *Time* is one of the most persistent and consequential of these boundary points. We humans have the unique ability among all other life forms to ponder implications related to time. We are aware that we have a beginning and an end point. This knowledge affects our hopes, challenges our endeavors, and impacts how we judge options and possibilities. The way we have chosen to define time: days, months, years, minutes, and hours, loses its significance if the limits to our life span are nullified. As it is, our accomplishments and plans for the future take into account our concern and preoccupation with the span of human life.

Our treks into far Space will not diminish our concern for and the effects of time; indeed, as we set our sight into far Space, the passage of time will take on greater importance than now. Our sights include transport to places that are so removed that it will take multiple generations to reach the selected destination. Life, unlike space, is not limitless. Those who lead the way into faraway places may well not live to see these ventures to their conclusions.

Within the context of the age of the universe, the duration of an individual human's time is inconsequential. Any thought or discussion that considers a reach beyond even the most proximate planets or stars necessitates considerations that include multi-generational life on any voyage toward the places where some propose to establish human colonies. No model exists that provides guidance for such excursions. Indeed, there are those who state that such ventures are impossible. A moon colony or a settlement on Mars? Perhaps. Beyond that? Forget it! Whether it be a settlement on the moon or Mars, the introduction of humans into the space equation presents significant challenges to those who design and manage such endeavors.

The questions associated with proposals to venture beyond Earth loom large: Within the context of our physical limitations, what are the most efficient and effective methods to sustain and enhance life as humans make their way toward and into the vacuum of space? What are the moral and ethical implications incumbent upon those who are responsible for the care and protection of intelligent life-forms? What adaptations are necessary to enhance the survival of those who live beyond Earth? What are the mechanisms necessary to maintain healthy individuals encapsulated in a mechanical contrivance and what are the strictures that will guide the behaviors of those who are thrust on the long journey to a chosen destination? Should people violate established norms, either by a Singularity or by persistent transgression, what consequences will be imposed upon the perpetrators and by whom will the actions be implemented and

monitored? Juxtaposed to these questions is the matter of religious systems that may guide and are important to some individuals who venture beyond Earth. Will the propagation of one's religious convictions be encouraged or thwarted? What controls, if any, will be placed to direct how one may implement a personal belief system?

When humans venture into an unknown Beyond, unfettered by factors associated with life and relationships that existed when they lived on Earth, questions of purpose, meaning, values and ethics have existential significance. From lift off to the point where a space vehicle breaks from earth's gravitational force, the mission and those who participate in that mission depend upon the application of science to assure success. It is important, however, to recognize that science does not answer questions that relate to purpose, responsibility, or human situations such as life and death.

The ability to project a vehicle and its complement of human passengers has been made possible by a synergistic application of scientific advances combined with human ingenuity, allocation of resources, and determination. The successful blending of these numerous factors has, within our lifetime, made real what had once been the stuff of science fiction and what, in their time, were irrational dreams.

We have learned to apply an eclectic collection of scientific knowledge that includes a more sophisticated understanding and application of the laws of physics, a broader view of the cosmos, and the advancement of material fabrication and design and electronic mechanisms that control much of the flight operations. We have utilized mathematics, enhanced by computers, to perform what previous generations could only imagine. Applying our vast array of knowledge and experience to a Singular project, to launch a rocket into space, has brought us to the point where we consider Space travel a common experience. Our skills and successes have brought us to the point where we are confident to place humans in our machines, to send them on extensive missions into Space, and to expect a safe return. A high priority in our space experience is to control and diminish risk factors. When men and women are passengers sent to the Beyond, concern for their well-being and survival is extreme. Ethics, morals, and values are suddenly pertinent, and they occupy an essential place in our intent to achieve a successful Space venture.

When space travel was limited to machines and mechanical contraptions, life's grand questions relating to morals, values, purpose and needs were given little, if any, thought. The introduction of the human component changed everything. Science controls the operations and function of a space vehicle; the humans aboard that craft are emotional beings with feelings, hopes, fears, desires, and needs.

It is to be expected that individuals who take the Great Venture into Space beyond space will carry with them habits, practices, beliefs, religious traditions and beliefs, expectations, symbols, and other factors common among those who live on Earth. What are the limits, if any, that will guide in the acceptance, practice, or prohibitions associated with potential adherents to the variety of beliefs or behaviors? Those from the Christian faith may believe in a responsive, relational God, a Being who makes demands and extends promise.

A Muslim may expect accommodation to face Mecca while on a journey that follows no meaningful compass location.

Individuals from the Buddhist, Hindu, and hundreds of other social and national religions may occupy a space vehicle or habitation structure. Is there accommodation on space flights for faith leaders, instructors, guides?

Are those who participate in extended space travel expected to be asexual? How will the population be perpetuated? Will test-tube babies be the norm? Who will be responsible for the care and education of those who are born? Will families form and separate as they do on earth? We can expect that, as on Earth, people will fall in and out of love. Will there be legal implications of established or broken relationships? How will property on a planet be allocated and protected?

The above is but a partial enumeration of the practical and theoretical challenges that confront those who travel beyond Earth's boundary. The individuals who manage and prepare the people who board the contrivances that propel humans toward the Beyond face challenges unlike any before. It is a phenomenal opportunity and responsibly to prepare the men and women who set upon a Singular endeavor and to assure their success and safety. The human manager's task is of equal complexity to that of those who are responsible for the design and construction of a dependable space vehicle. It is one thing to latch together diverse pieces of metal, plastic, or other construction materials. Quite another set of skills are called upon when a select group of individuals is formed to inhabit the vehicle that will carry them to places where the unknown is more common than the known. Proposals to establish permanent colonies further complicate matters.

Human habitation implies time. Time is not friendly to life-forms. The intention to establish space colonies invites us to consider the correlation that links time and mortality. We age. We become ill. Those we love and value die; as do we.

Within a community, it is to be expected that both positive and negative events will occur. Best practice mandates that individuals, prior to launch, be prepared to provide meaningful and adequate responses to events that arise within the community and that impact its residents. A space community will be populated by individuals who share the same concerns, hopes, frailties, and dreams as we who remain citizens and residents of Earth. Science may be a driving and determinant force, but, to paraphrase words spoken centuries ago, men and women do not live by science alone! Science measures, defines, and enables, but it has limits. Science does not provide succor to the weary or respond to human physical, psychic, or spiritual situations.

Janet Martin Soskice, a professor of Philosophical Theology at the University of Cambridge, in her chapter "The Ends of Man and the Future of God," states that "man" in the 21st century "seems to have been swiftly demoted from being the crown of God's good creation to being just one more creature in a line of creatures destined for extinction,

just another episode in the history of nature.”¹ She reminds us that in our Postmodern world, “the single individual ... or the individual ivy leaf or drop of water—seems of no importance compared to the law-like generalizations that govern the whole.”²

Those who occupy the far reaches of space, in their splendid isolation, may conclude that they, like the universe, are doomed to extinction and give up on life. When such situations arise, there is need for someone who can provide alternative thoughts to counter hopelessness and to give assurance that there is an alternative to the pessimistic scenario.

There are viable options that extend beyond scientific purview. Rituals are one example. Rituals provide solace, purpose, and meaning to human life. Celebrating a holiday brings people together to remember a past time or event. Rituals such as these perpetuate contact between the “then” and the “now.” Birthdays, baptisms, funerals, holidays; these activities involve a community. When we participate in these events that transcend technology and science, we are reminded what and who we are. It is important, therefore, that a place for men and women who have the ability to respond to our fundamental humanity and its needs is included in community life, whether that life be on Earth or in Space.

Those who manage and support the individuals who are sent into Space have, I propose, a moral and ethical duty to study and implement effective and responsible action that addresses the realities that make us who we are: vulnerable, fragile human beings. Viable options are numerous, but they present a logistical and managerial challenge to implement, a challenge that one ignores at great risk.

It is not the purpose of this article to articulate the process or methods that will satisfy the requirements associated with how best to satisfy the needs of those who journey into and occupy Space. What can be said with some assurance is that humans will be humans whether they live in New York City or on the Moon. It is not unreasonable to propose that both the good and the ill will always be part of our life experience. How we respond to these factors makes all the difference in the world.

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¹ Janet Martin Soskice, “The Ends of Man and the Future of God,” in *The End of the World and the Ends of God*, edited by John Polkinghorne and Michael Welker (Harrisburg, PA: Trinity Press International, 2000), 82.

² Soskice, “Ends of Man,” 82.



Editors' Notes: Dr. Lawrence Downing, DMin, after his forty years as a Minister, University professor, and author specializing on human values, ethics and moral leadership, joined the Kepler Space Institute (KSI) in its formative years as the Director of Space Faith. With this article he opens a new major research subject that KSI will pursue in its graduate curricula and in its interactions with the global Space Community. The basic research question for that investigation will be: "How do we in the 21st century on Earth define the preferred social, political, spiritual, moral and ethical status for future humanity as it settles in Space?" If a consensus can be reached on that question, it will impact the science, technology, engineering, and human factors for the design of future human Space missions. It will also hinge on Stephen Hawking's question about "whether humanity has a future." **Bob Krone and Gordon Arthur.**