

Human Ethics in the Space Era

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Abstract

The question of human value systems and the inherent ethics we have developed on Earth will face us as we begin space discovery and settlement. Are these systems compatible with the new physical reality of being in space? Drawing on our religious value system, which reveres the values of life, ownership, and human dignity, we will be asked to examine the philosophical principles that justify our ethical system to include new domains of interaction with the new conditions and circumstances that are out there. This will mean examining our ethical metric system, which is universal but Earth-centric. We will explore the physical and metaphysical boundaries that set our moral value classification.

Keywords: Space ethics, justification of space settlement, metaphysical and religious value system, human understanding, reverence for life and religious commandments, interplanetary species.

Introduction

The focus of this paper is space ethics and how humans will deal with and interact in the new space and time they are entering. First, we must define some key concepts and terms: ethics, human existence, space, settlement in space, and the conduct and behavior of humans outside of planet Earth. Second, we must explain the reasons for going to space, and ask, is it justifiable? By doing this, we can survey the literature related to this topic. We can make sense of this new human adventure and expansion into a new realm of space and time above the blue sky. We discuss these topics in the literature review. The literature covers a range of ideas related to classical ethics that may help as we venture in this new era.

This assessment covers interacting with a dimension that is both beyond the borders of what we think are our limitations and something we take for granted. It is a fundamentally assumed inheritance simply because we are here, living and being on planet Earth. This inheritance can be justified by many concepts, including the supernatural, i.e., God, or metaphysical concepts, entities, or beings, with whom we make a legal, binding contract. This contract specifies our rights and obligation. Biblically, being the children of God, who granted us this inheritance, we are obliged to keep this agreement. We can also express this inheritance in terms of force. We possess and hold it by the might and power of our hands. It is our pure *gain*. What we conquer and overcome is ours to have and keep, and even to destroy, provided we are the sole holders of power.

In space, we are beyond the thin layer of Earth's atmosphere and the protection of Earth's magnetosphere. The nature of this jump from the safeguard of spaceship mother Earth, with or without any understanding of the bigger picture, is an ethical question that shakes and questions our moral basis and foundation. These morals that we have both inherited and accustomed ourselves to, or adopted, as we developed are Earthbound. As we venture into the universe, all our ethical norms need to be reassessed, or undergo a shift in situational awareness. That is, we need to move from an Earth-centric perspective to an acentric one.

This paper proceeds as follows: First, there is a literature review, which examines the foundations and meaning of ethics, and then explores the connection between cosmic and universal ethics. Then, some key terms are defined and explained, including *Space homo sapiens* (SHS), which is what humans may become in space, and the consequences of being an interplanetary species are explored. The next section, on ethical justification, begins by exploring Wittgenstein's view of ethics as a language-bounded wall. It moves on to Gerard O'Neill's comments on humans living in space, before exploring Seth Baum's ideas on consequentialist ethics. Finally, it explores the ideas of Tony Milligan and Adriano Autino on ethics before drawing everything together.

Literature Review

First, it is necessary to establish the meaning of the term "ethics," as this sets the zero reference point and provides a roadmap to follow. Lawrence Downing starts his JSP paper with the main question, "Why Ethics?"¹ Downing gives the etymology of ethics from its Greek root, i.e., *ethikos*. A check of the Online Etymology Dictionary reveals a list of dictionary entries that are near ethic, and one such word is *etheric*.² The interesting thing is that in classical physics, the ether is the *frame of reference* for the world and the cosmos. It starts from Earth and it goes beyond it to pervade the universe. This ether fills heaven/space. All physical reality is measured with respect to this ether. The similarity between the definitions of ethics and ether leads to a point of reference with which things start. This reference, on which human conduct is based, is a natural zero point. In ethics, the zero point is between good and evil. Good is positive, and it lies to the right of the zero mark; bad is negative, and it lies to the left of zero (the right and left directions are arbitrary). This Cartesian one-dimensional analogy offers an excellent representation of the binarity of good and evil. The space ether frame of reference has Earth as the zero

¹ Lawrence Downing, "Why Ethics?" *Journal of Space Philosophy* 8, no. 1 (Winter 2018–19): 48–51.

² In ancient cosmology, the ether was element that filled all space beyond the sphere of the moon, constituting the substance of the stars and planets. It was conceived as a purer form of fire or air, or as a fifth element. From the seventeenth to the nineteenth century, it was the scientific word for an assumed frame of reference for forces in the universe, perhaps without material properties. The concept was shaken by the Michelson–Morley experiment of 1887 and discarded early in the twentieth century after the Theory of Relativity won acceptance, but before it went, it gave rise to the colloquial use of ether for *the radio* by 1899. Online Etymology Dictionary, *The Ether*, n.d., www.etymonline.com.

mark in a geocentric cosmology, while in a more modern understanding, we can choose a galactic coordinate system that has a three-dimensional spherical coordinate system with the massive black hole at the core of the Milky Way as its center.

The Golden Rule is to treat others the way you want to be treated, and to be a good Samaritan as Downing puts it. Then he asks the key question: How can we apply the ethical principles we formulate into real-life situations, i.e., the applied ethics dichotomy and quarrels about what we believe in as correct/virtuous, and what is the right/moral thing to do? The complexity of the real-life scenario to which this dilemma applies is conflict. In the age in which we became *Homo lingual*, i.e., creatures with speech that allowed us to communicate with one another, we started to set the norms and rules that both define who we are (ask the main three questions: Who are we? What is this existence/being all about? Why?) and most importantly how we behave. This task was the consequence of making a virtue of gossip.³ Gossip is the defining mechanism, and the representation of our actions toward each other and the world around us (the mirror through which we see our actions and behavior). This gossip is what sets our value system into motion, and Downing calls this system the moral duty. This moral duty is what makes our system of values what it is. It shapes our actions and response to any life situation involving ourselves and others. Those who do not abide by this code of conduct or diverge from it are ostracized from the community. This mechanism preserves human existence. Sets of laws are made as a result, and the code of Hammurabi is a good example.

The normative ethical theories that Downing highlights are (1) teleological (the end result is what matters and justifies the purpose), (2) ontological (our laws should be based on our existence, existential philosophy), (3) deontological (the duty we are obliged and morally compelled to do), (4) utilitarianism (what can work, i.e., if it is still useful, then there is no need for change), and finally (5) ethical egoism (what is in it for me? The narrow-minded greedy *Homo selfish* is the authority). Downing raises many valid and timeless questions that apply whether we are on planet Earth, on a spaceship traversing between celestial bodies, or living on the Moon or Pluto. The implicit moral/ethical questions Downing raises are key for us humans to deal with, whether we stay on Earth or live beyond Earth's atmosphere (in space). This makes us face Einstein's question, "is the Universe a friendly place?" The answer to this question may depend on us as sentient or conscious beings, and whether we do the right things to be saved in our space adventure.

Another approach is to explore the connection between cosmic and universal values and its connection to religion. Gordon Arthur, in his paper "Religion and Values: Cosmic or Universal Ethics?" deals with this topic.⁴ Arthur gives a definition for cosmic ethics as established and agreed on principles that govern human behavior. On the other hand,

³ Gossip is a form of sharing information about other people that may lead to a judgment (Cambridge Dictionary).

⁴ Gordon Arthur, "Religion and Values: Cosmic or Universal Ethics?" *Journal of Space Philosophy* 3, no. 2 (Fall 2014): Reprinted in this issue, 70–78.

universal ethics are deduced and contain pragmatic reasoning on what works. This may be modified as new circumstances demand, in contrast with established, set-in-stone cosmic ethics.

Arthur bases his paper on a declaration on global ethics by Hans Küng that was discussed at the World Parliament of Religions in Chicago in 1993. He then makes a comparison between Küng's opinions and those of three of his critics, Vernon Ruland, Zhai Zhenming, and Bob Krone. Küng presents five global principles to which he says all religions adhere. In his 1990 book, *Global Responsibility: In Search of a New World Ethic*,⁵ Küng lists the basic commandments: (1) *do not kill*, (2) *do not lie*, (3) *do not steal*, (4) *do not practice immorality*, and (5) *have respect for parents and love for children*.⁶ Küng is basically setting them as a defense against unprincipled or corrupt libertinism. The premises of Küng are based on his biblical background and his system of morals.

Küng lists interesting requirements to achieve a global ethics. Freedom must come with justice (equal rights and responsibility with accountability). Equality for all and the plurality that accepts the diversity of people, along with differences in cultural traditions, are the measure of implementing equality and justice. Gender equality and the values of men and women are the shared responsibility of all. Coexistence and peace of the social order and conflict resolution in a peaceful nonviolent exchange must be the rule. This needs a tolerant mindset that accepts an ecumenical environment, to use a religious term, between all the religious and spiritual theologies that humans practice or to which they adhere. Religious freedom requires tolerance, and it must go beyond the differences, conflicts, and mistrust that are a part of the human story and history. The requirements that Küng gives are "the moral minimum."⁷ It is to be found in all the religious sacred books (the Torah, the New Testament, the Quran, and others).

Küng further summarized them in four principles for the 1993 Assembly of Religious Leaders at the second Parliament of the World's Religions. (1) *Do not kill*, i.e., non-violence and the respect of life. (2) *Do not steal*, be honest and fair and respect the essentials of the community and its needs. This is economic justice, in that the use of property (personal or communal), has a social/moral responsibility attached to it. (3) *Do not lie*, act honestly and respect human dignity, and set moral standards that protect truthfulness and transparency on both the individual and institutional levels. (4) *Do not commit sexual immorality*, by ensuring equal rights between men and women. "Human fulfillment is not the same as sexual pleasure and sexuality should express and reinforce a loving relationship lived by equal partners."⁸ The last sentence is a good summary. Hence, Küng has truncated these principles and commandments to three or four. They are similar to the three Noahic commandments, *thou shall not kill*, *thou shall not steal*, and *thou shall*

⁵ Hans Küng, *Global Responsibility: In Search of a New World Ethic* (London: SCM, 1990).

⁶ Arthur, "Religion and Values."

⁷ Küng, *Global Responsibility*, Chapter 6.

⁸ Arthur, "Religion and Values." In this issue, 73.

not fornicate. By these three commandments we become humans; we respect life by not killing other humans, and we have communal/shared ownership of what we need and what we make. We do not steal by forming structured relationships between men and women regarding sexual acts, and by protecting children, the offspring of such relationships/actions. The relationships and form of a family and a community are the bases of social interaction, relations, and associations.

Vernon Ruland and Zhai Zhenming also attempted to form global ethical systems. Ruland, while supporting Küng's principles in general, indicated that they are a minimalistic distillation of religious moral codes, and that they avoid some tough issues. According to Zhai, this minimalistic view can lead secular humanists to try to enforce a UN Bill of Human Rights that is empty of any religious moral values. Zhai also asserted that to include a multireligious moral system, we must accept relativism and respect the absoluteness of others, i.e., both monopoly and diversity, plus a dogmatic pillar that incorporates alleged absolute values.

Zhai's main interest is in a Chinese ethics perspective, and he argued that a moral structure based on religion will end up as a dogmatic ethics or as relativism. He indicated that philosophers believe in human-based morals as opposed to a divine metaphysical source of morality. Zhai understands that morality can be based on experience and as he puts it "a matter of self-evident necessity"⁹ and not of consensus. That is why he does not see any need for a universal ethics. He argues that the foundations of a universal ethics are based on a consensus that fails to reach a coherent agreement. He believes that at the present time, there is no agreed universal ethics, but he does not exclude it in the future.

Zhai's main problem with global ethics is the source and origin of that system of value. The source of such commandments is not consensus, but God. He bases his judgment on the idea that since God's existence cannot be proven rationally, then grounding global ethics on such a divine commandment system is dishonest. It is interesting that Zhai questions authority as a basis for an ethical system. In this respect he points out that in practice, the fact that there is a "multiplicity of sources seems to lead either to dogmatism or to relativism."¹⁰ In the end, we must either choose one system and become dogmatic or accept them all and be relativist. However, Zhai falls into the same trap of dogmatism or relativism when he argues for choosing one of the available human-based ethical systems. This cherry-picking is no different than choosing a religious based ethical system.

Bob Krone, in his paper "Philosophy for Space: Learning from the Past—Visions for the Future,"¹¹ asks the key question: "What should be the philosophical foundation for the

⁹ Arthur, "Religion and Values." In this issue, 75.

¹⁰ Arthur, "Religion and Values." In this issue, 76.

¹¹ Bob Krone, "Philosophy for Space: Learning from the Past—Visions for the Future," *Journal of Space Philosophy* 1, no. 1 (Fall 2012): 17–26.

future of humans in Space?"¹² Krone starts with a positive notion by translating philosophy as love of wisdom. To find a purpose for life, it is necessary to set a value system that leads humans to believe in a valid truth that is right and moral. In human social progress, we developed from gathering small hunting groups of 50 to 100 persons into a family group or herd. Then, by domesticating animals we became nomads who developed into clans and tribes with hundreds and thousands of members (a clan/tribe is a clustered confederation). By settling and cultivating the land, we became a farming/agriculture-dependent culture. Only when we started to form cities and states, practiced sets of laws, and invented a writing system did we start to be a civilized species. Krone added that the definition of civilization developed to include the relationships of human settlements within society (whether on Earth or in space), and that this was based on constructive civil community behavior. This positive tendency is important for the survival of human society in the present and the future. Any new definition of civilization will have to deal with the violent side of our human nature and help to get rid of it.

Krone sets three foundational basics for the philosophy of the space age: (1) reverence for life, (2) ethical civilization, and (3) the policy sciences. These three basics are in line with the main principles and ideas given by Küng. Krone gives a chronicle of human evolution through history to present human social development. He concludes with a very important statement: "When the ethical foundation is lacking, civilization collapses.... Unfortunate choices were made that were void of **Reverence for Life within Ethical Civilization.**"¹³ Filling this prescription will require innovative and radical change in how we govern and set our policies. This change will be important to adhering to the maxim set above: *reverence for life within ethical civilization*. If we manage to achieve this, we will need to build a government with the following characteristics: "1) Global; 2) Inspirational; 3) Long term perspectives and persistence; 4) Large scale mega-project resources and management; 5) Will and enforcement tools; and 6) Raison d'Humanity values."¹⁴ Then we can enter the space age, which is not only important, but also vital and the only possible way for human survival—if we survive at all, as the late cosmologist Stephen Hawking stated.

Definitions

Space is "a three-dimensional region in which objects move and events occur and have relative direction and position."¹⁵ This simple definition of space in the general sense has a very interesting appeal. It includes all the physical space of which we are part. So, the

¹² Krone, "Philosophy for Space," 17.

¹³ Krone, "Philosophy for Space," 19.

¹⁴ Krone, "Philosophy for Space," 19. Krone's source is Yehezkel Dror, "Governance for a Human Future in Space," in *Beyond Earth: The Future of Humans in Space*, ed. Bob Krone, Edgar Mitchell, Langdon Morris, and Kenneth Cox (Burlington, ON: Apogee Books, 2006), 42–44.

¹⁵ M. Zeilik, *Astronomy: The Evolving Universe*, 9th ed. (Cambridge: Cambridge University Press, 2002), 523.

room I am in, this estate, and the location in Kuwait where I live is part of space. By this association, Earth and the solar system are also a part of the region we call our local space. But now, a new designation of space has become common. By space we mean what is beyond Earth's atmosphere, which is considered outer space. Spaceship Earth is included in the definition of space. An astronaut/cosmonaut is a person who has traveled above the horizon and ascended to the realm of the sky. He or she must be elevated above the skyline to an altitude of 100 km (above sea level), the Karman Line at which one is considered to enter space. However, we humans, and planet Earth we live on, are also moving in space.

Ethics is the basis for a moral code that humans observe in our dealings with each other, and with the world in which we live. The BBC defines ethics as "At its simplest ... a system of moral principles. They affect how people make decisions and lead their lives. Ethics is concerned with what is good for individuals and society and is also described as moral philosophy."¹⁶ With this definition, we can be open to all aspects of ethics whether it is based on a religious moral system or a rational philosophical premise. However, religious spiritual systems seem to have deeper anthropological roots that predate the philosophical investigations that started with the Greek age of logic. Before modern times and the new enlightened philosophical schools of thought, they all paved the way to more refined and elegant paths to answer the same old questions, i.e., what is right and what is wrong? Here I will add a Greek word, *logia* (oracles or divine utterances),¹⁷ which is the source of our moral system or the holy grail of all our moral bases. This *logia* is what we need to redefine in this age of space.

Becoming an interplanetary species, or SHS, is the next step of our story. How can we set a framework for humans who are in space and will dwell in space beyond our atmosphere? I chose this question as we are now either on the surface of Earth or floating and diving in the air or in the water. All our movements are bound by the surface of Earth. Being in space, on a celestial body other than Earth, is a new adventure that we never had the chance to experience before. Yes, we always dreamt of going to the heavens above the clouds, but even the clouds are only few kilometers above the surface of Earth, and that does not qualify as in space. The metaphysical journeys we made that reached the ultimate climb to *up on high* are not attested as real, physical facts, regardless of what we may hold as truth or believe, whatever our cosmology and cosmogony.

So, we must come up with a new definition for the humans who are going to space. SHS gets us one step closer to defining this era of human missions above the boundary of Earth. SHS will face new physical and psychological realities that are different than those on Earth, as such humans will be beyond the physical constraints of Earth, and the gravitational force/field boundary holding us onto it. This will reshape our relationships

¹⁶ BBC. "Ethics: A General Introduction," 2014, www.bbc.co.uk/ethics/introduction/intro_1.shtml.

¹⁷ *Logia* (τά λόγια); divine words and sayings.

between each other and with our surrounding, unfamiliar new environment. It will affect our cognitive facilities and reveal our physical limitations, and it will pose new challenges, e.g., how to deal with varying levels of gravity and exposure to high levels of radiation. Our cognitive qualities have made it possible to develop the systems with which we interact on Earth and to form rules and boundaries that have shaped and formed our ethea¹⁸ and moral structures. It is this Earth-based physics and its boundaries that have shaped our interactions and moral milieu. We can perceive only the spectral colors that pass through the atmosphere to reach the Earth's surface. We cannot see in the x-ray spectra that are common in outer space.

The new physical limitations are the new challenge that we will face in space. Creating a terraformed environment that can meet our needs is the first step. We need to ensure that we have oxygen to breathe. A proper shielding mechanism to protect us from dangerous levels of radiation is a requirement. The gravity dilemma is a Pandora's box about which we are only starting to learn. This new reality will make us rethink all our ways of acting since we became the species we are today, *Homo sapiens*. On Earth we are sensitive to location and time. We have reference points to relate to: a holy mountain, a sacred tree, or a river that is our zero marker. All things revolve around and are linked to it. The Temple Mount in Jerusalem is where God used to dwell before the Second Temple was destroyed. For some, Mecca is the cube house of God. All these are but reference points on the surface of Earth. They are religiously oriented locations, but their secular counterparts fall into the same category. Take for example the Statue of Liberty on Liberty Island, New York, or the Eiffel Tower in Paris. They are reference points. In the calendar, Christmas Day and the New Year are also reference points. However, we must not forget that we on Earth have diurnal time keeping and setting our activity. To alter and lose the 24-hour framework will change our perceptions and manner of behavior. For example, on the Moon we will have a 14 Earth day morning, and a 14 Earth day night. People cannot work for 14 terrestrial days and sleep for 14 terrestrial nights. This is something we must keep in mind as we alter the space-time structures on which our cognitive faculties and moral systems are based.

Ethical Justification

Ludwig Wittgenstein defined ethics as a language-bounded wall. Wittgenstein borrowed a definition for ethics from Moore's book *Principia Ethica*: "Ethics is the general enquiry into what is good."¹⁹ He used this definition to clarify that what we mean as good only holds a relative value. This value can be described as important. It can be referred to as the meaning of life, or how to have a good life in the grand sense. But this is all relative to the vessel in which it is delivered, i.e., language. To describe something as good in a

¹⁸ Ethea is the plural of ethos (ἦθος); character and fundamental value (Cambridge Dictionary).

¹⁹ Ludwig Wittgenstein, *Wittgenstein—Lecture on Ethics*, Delivered at Cambridge University in November 1929, sackett.net/WittgensteinEthics.pdf.

physical sense, like a Casio FX-991 calculator, is to say that this specific calculator is doing its task according to a set of measurable standards that we can test and examine, and that we can authenticate by a trial. But how can we describe a football (soccer) game as good? If we enjoyed the result because our team won the game, then we may deem it a good game. But on the other side of this football match is a team that has lost the match, and its fans may not see this result as good, but basically as a bad game for their team. This is a judgment of relative value and not a statement of a solid fact. How can one deal with this language-bounded dilemma. We are limited in what this language tool can do in communicating to us and to the outside world. Our language is not an independent tool with which we understand the outside world as it is. This limitation will remain with us as we explore outer space.

The Earth-bound logic syntheses and mixtures we accept as the bases for our moral guidelines are bound to guide us. It is likely that our next major journey will be to explore space. But are these Earthbound moral laws justified for use out there in the vast void? This is a major question we must think about as humans. Our history and heritage have left us adhering to an Earth-based amalgamation. Still, we will have to use this Earth-based system again, and we are likely to use the traditions we have come to model in the vast expanses of space beyond Mother Earth. This may raise several challenges. We will be in a new environment, and in space there may be new conditions that are difficult to predict. Yes, "thou shall not kill, thou shall not steal ... thou shall not lie," all hold on to solid grounds for us as humans, but what about SHS?

The metaphysical heritage we adhere to on Earth deals with some of the physical circumstances here. Dietary restrictions are a good example of this system. There are rules on what to eat and what not to eat, times to fast, and basic hygienic restrictions. We have become accustomed to them and set them as obligations. As humans, we have developed a set of cultures and developed them into set laws using sensible reasoning. For example, the Jewish Rabbinical law on kashrut food can be observed on Earth if one follows the Rabbinic law (which is very strict and hard). But how can we implement this if we are to live on another planet and to start to cultivate new food items that are not conventional. A regolith-based cheeseburger for example. And yes, it is not kosher to eat dairy-based food (milk or cheese) with meat. So, would our regolith-based cheeseburger be kosher?

The kosher example above is a realistic scenario. Here is a prophecy made by Gerard O'Neill in his legendary book, *The High Frontier: Human Colonies in Space*. "With a varied diet including corn, cereals, breads, and pastries that many of us enjoy, and plenty of poultry and pork, the space colonists will have good reason to follow our Pilgrim ancestors, and celebrate Thanksgiving with a feast of turkey, and Christmas with a savory of ham."²⁰ I know that ham is not kosher or halal, but this is a good example, as we would

²⁰ Gerard K. O'Neill, *The High Frontiers: Human Colonies in Space* (North Hollywood, CA: Space Studies Institute Press, 2019), 41.

be holding on to our Earth-based customs/heritage and reusing them. This is what we do; for example, the city of New York is renamed after the British city of York. So, will we have New Chicago, New Tokyo, and New Cairo? That is OK, but once we have New Jerusalem, New Mecca, and New Lhasa (the Tibetan city of Gods), then history will repeat itself. As for the New Jerusalem that will come from above carried on the clouds, this will be a sight to see. Is it going to be an O'Neill-style habitat located at of the Lagrange points, orbiting Earth, or someplace in the vast, empty void of space? Or is it the biblical New Jerusalem that the prophets have prophesied? Only time will tell.

This may set us thinking about consequentialist ethical systems. Seth Baum makes a good case in his paper "The Ethics of Outer Space: A Consequentialist Perspective."²¹ The main question a consequentialist might ask is "What are the consequences of my actions"?²² In our terrestrial-based scenario, we may say that we follow the kosher laws, or those of any other system. But in outer space, where the limits or choices are infinite, and we may encounter new forms of life, be they microbial or intelligent, we will have to face a justification question: How we are to interact with this new situation? Our main perspective of *reverence for life within ethical civilization* would be a good test. Following consequential logic, we will end up with an intrinsic value system. This intrinsic value asks how much things are worth to us regardless of what they are, or any other factor. Is it valuable to kill all inhabitants of a moon we intend to live on regardless of the rights of its inhabitants? A consequentialist will be glad to do something like this, to annihilate the local species, if there is a significant benefit in doing so. This we immediately deem immoral on Earth, but out there it may be fair game. So, would we give the same rights to all beings across the board whether they are terrestrial and like us, made in the image of God, or would we use force and consider it a gain?

The main premise of consequentialist ethics is that we should achieve the best outcome. We should optimize the gains we can make. Baum asks, what are the consequences of my actions? He gives a great response: they are what we happens when this action takes place on Earth. The main premise is bound by our existence on planet Earth. Baum reasons that consequentialism would be of importance in outer space. (1) Due to the vastness of space, the gains that we can achieve are much larger. For example, we have only 244,000 metric tons of gold on planet Earth according to the National Minerals Information Center.²³ However, in the infinite universe, the abundance of gold is likely to be astronomical if not infinite using our Earth-bound value system and standards. Whether this newfound resource is good or bad is an open question, as Baum rightly asserts. (2) What are we going to do if we meet new life forms in outer space?

²¹ Seth D. Baum, "The Ethics of Outer Space: A Consequentialist Perspective," in *The Ethics of Outer Space Exploration* ed. James S. J. Schwartz and Tony Milligan (Berlin: Springer, 2016), 109–23.

²² Baum, "Ethics of Outer Space."

²³ USGS, *Gold Statistics and Information*, 2022, www.usgs.gov/centers/national-minerals-information-center/gold-statistics-and-information.

Extraterrestrial intelligence (ETI) is a possibility that remains a key test for our omniscient ethics.

Intrinsic value is the cornerstone of the consequentialist ethical framework. This means the value that is contained in a thing essentially. This raises the question of whether what we are seeking to do justifies the use of any means to achieve it if it is good. Is this acceptable? A hardcore consequentialist Earthling will say yes. But what is the ultimate value system to which we can relate that transcends our feeble Earthbound conditions? Baum lists four types of intrinsic values that need to be addressed: subjective experience (to feel good about some action, leading to a high quality of life), preference satisfaction (to get one's desires and wishes), ecosystem flourishing (healthy and biologically stable), and abiotic systems (a system that has no intelligent form of life can be disturbed by introducing a life form). Baum sees that subjective experience and the good feeling that it brings to humans as the main reason to include it as the main player in the intrinsic value argument.

This form of intrinsic value is human based, but what about other forms of life, species egalitarianism? Does my cat have the same intrinsic value that I have? Or is intrinsic value anthropocentric? Each form of life will be biased toward its kind: humans to humans and cats to cats. So, do I have more rights based on my anthropocentric perspective than my cat? Is my life more important than that of my cat? This can attest to our place and location in space and time, which Baum terms location egalitarianism. In all cases Baum argues rightly that the arbitrary fact of our existence as a species that is located here on Earth, and the time of our being and existence at this historical moment, has no added value that makes us superior to any other.

Mining resources in outer space should be more profitable than mining earth-based resources. If the cost of building the necessary habitat in space exceeds the benefits of such mining, those resources must be put to better use on Earth. This social argument is being used now regarding the developing space tourism industry, which commercial companies are endorsing. Another scenario, such as using star radiation energy to fuel a space civilization, may be a good option. Building a Dyson sphere around a star, where all the energy we need to build a habitat can be attained, would be such an endeavor. This Dyson structure is a realistic solution if we can find a star that has no planets orbiting it. This star will be free for us to cultivate without any feelings of guilt because we will not disturb any resources in doing so. Nor will we encounter any other life forms, which the next paragraph discusses.

New space dwellings and habitats will make space a place for humans and other life forms to call home. However, any extraterrestrial life forms that we will encounter must have their own ecosystems, and there will be questions about how systems that are alien to our biology will be affected. Who has the right to preserve this system? We humans, the new dwellers of the newfound world beyond Earth? Or is it the sole right of the local inhabitants (alien life forms and sentient beings)? In this case, we cannot implement the

motto “a land without people,” the territorial conundrum that we used on Earth to justify colonization. Are we sure that space is null and void of all life forms, and intelligent ones in particular? If they do exist, what are the boundaries we must set when interacting with them? The notion of intrinsic value will be the Ockham’s razor test for who has the right to be in such a location and when. For us, there is a clear anthropocentric advantage in claiming priority, and that brings us back to Square 1 of our ethical dilemmas.

Back to the main premise of consequential morals and the intrinsic value they seek. The aim is to achieve the maximum good. This utilitarian pursuit for pleasure, and the happiness of humans, is the only goal. This puts the whole idea of consequential ethics into question. Is doing something that feels good moral by itself? Would torturing and killing one person to ensure the happiness of many other humans be permitted? This would make killing that person acceptable, and we would then have no responsibility toward him. Our premise would be that the happiness of the many is greater than any individual’s situation. It would therefore be justifiable within the utilitarian frame of morality. This is a significant problem for consequential philosophy: there is no basis for duty-based justice. The right action is defined by the satisfaction we can attain. This is the first and most important critique that deontological ethicists give in their refutation of consequentialism.²⁴

Now we must define deontology, the *logos* or the system that is based on duty, that defines what we ought to do. It is a moral philosophy that has as its premise that we ought to do the right thing regardless of whether we feel it is good and it gives us joy. Deontology asserts that we are by nature moral agents who want to act in accordance with a specified moral code. This moral tendency presses on us to do the right thing. Not to do the right action will make us immoral. This will lead us to the conclusion that any sentient being has the right of existence. We humans have the right to live, and so do other beings who have the same rights. This moral virtue (duty) is the highest principle we live to accomplish.

Act 2

Tony Milligan, in his paper “Basic Methodology for Space Ethics,”²⁵ gives a very interesting example of how humans control and vixen²⁶ our moral ethos in outer space. In his address to the House of Representatives on May 26, 2016, US congressman Senator Louie Gohmert stated that he wanted to ban gay people from going to space and to

²⁴ Larry Alexander and Michael Moore, “Deontological Ethics,” *Stanford Encyclopedia of Philosophy*, Winter 2021, plato.stanford.edu/entries/ethics-deontological/.

²⁵ Tony Milligan, “Basic Methodology for Space Ethics,” in *Into Space*, ed. Thais Russomano and Lucas Rehnberg (London: IntechOpen, 2018), Chapter 2, doi.org/10.5772/intechopen.75689.

²⁶ A vixen is a dovetail cradle that holds a telescope tube to its base mount, i.e., it gathers and fixes everything together.

forbid gay space colonies.²⁷ Gender issues are a source of much debate here on Earth, but how can we address sex in zero gravity, for example? The cases of human reproduction and living systems are new areas for discussion within the ontological basis of the true nature of being. Such issues will need to be expressed in the space age. We are humans, and we have formed our lives to comply with sets of rules and dogmas that we must revisit, return to, and revise based on the new situational awareness we have reached: new information, new understanding, and new vision. This is part of us as humans: we retell our stories again and again, each time with a different understanding, whether better or worse.

The setting of a standard space ethics and Milligan's special space ethics (which explores how space can both enable and constrain ethics) indicates the priority that should be given to ethical issues in space. However, he states that "Ethics can be difficult to place ... that ethical consideration should not *unduly* constrain either scientific exploration or the development of commerce."²⁸ This main cornerstone is likely to control the way humans deal with ethical issues. Protecting our vested interests as we claim our identity in space after we have gained access to it may make us feel satisfied. Only then will we be willing to address the ethics of space. We will ensure our interests, and then become ethical. But this situation, i.e., achieving satisfaction, will never be reached. So, being pessimistic, on this premise, we will never entertain space ethics as a problem we need to address.

Act 2½

Adriano Autino stresses this idea that we as humans have the endowed right to utilize and own space in his book *A Greater World is Possible*. "In order to understand what [morality is], when it comes to social processes, we might require at least: an analytical work, a solid *humanistic philosophical* basis and some scientific knowledge."²⁹ Autino emphasizes the focus of his space morals (in part by not using the word ethics), "as a 100% humanist, my priority is human civilization."³⁰ This links with and relates to what many theorists of and thinkers about space exploration ponder and aim at. Space is another island to be discovered, conquered, and plundered. Hopefully they will not find any other life form or make contact with ETI. This is the last thing we need in the vicinity of our solar system. This would make it morally easy to plant and place *boots on the ground*, as military planners say. And yes, ethics would come second.

²⁷ Milligan, "Basic Methodology for Space Ethics."

²⁸ Milligan, "Basic Methodology for Space Ethics," 18, italics original.

²⁹ Adriano V. Autino, *A Greater World is Possible* (Fino Mornasco, Italy: Space Renaissance Initiative, 2020), 22, italics added.

³⁰ Autino, *A Greater World is Possible*, 15.

Back to Milligan; one interesting point is that he refers to metaphysical disputes about “extending notions of inherent value to microbial life.”³¹ These debates will be influenced by our Earthbound religious and metaphysical values. We will deal with extraterrestrial forms of life, whether sentient beings or not, as we deal with creatures on Earth. Many people will expect this action and see space as just another territory to expand into, regardless of what lives in it. The question will be, is this the right thing to do? Since this is a new area, we cannot just make judgments about it and give a final ruling. We are terrestrial conscious beings. We have developed certain principles and ideas that are limited to, and confined to us, who are on this gravitationally bound and atmospherically conditioned planet called Earth. We derived our system of numbering days and calendars from the changing seasons, visible wandering stars (planets), and made the magical number seven the length of the week. This linking of the notion of the supernatural to our ecosystem is understood as a part of our evolution. Once we reach above the sky into the arena of gods and supreme beings, we will face a new physical reality. And yes, we will start to unmask the veil of ignorance we have on Earth. This time we must know that we are dealing with the gods of the natural world, physical phenomena *per se*. By this I mean we will be dealing with the naturally opaque and concrete reality of physical space and time. This opaque, natural reality will hold us to the limits of our cognitive abilities. We need a new cosmology of nature to replace our old cosmology, which is based on a flat Earth covered with a hemispheric firmament above which the gods live.

Act 3

Now back to planet Earth. In this journey we can see that we will likely export our morals and norms from Earth into Space. Whether we go to space or not is important, as it is an existential issue concerning our survival as humans. We are now on planet Earth, and as time passes, we see that our violent nature is continuing to control our actions. There seems to be an endless cycle of wars and conflicts that never ends. We have not solved our energy problems; there is still no fair distribution of resources to secure adequate and proper life standards for all humans. We are still forcing endless numbers of species that inhabit this planet into extinction. This use of all means possible to plunder what we can is our main ethos: *the ethos of gain*.

Accordingly, we need to be honest and face this reality. If we cannot do without the rage of anger and violence that plagues us, and we cannot sit and talk about what troubles us, then what are we going to do once we are in space? The situation in space cannot be treated the same way as the situation on Earth. In our history we have seen that we *humans* (with a Ferengi accent), have made war, violence, genocide, and other atrocities a staple of our diet. Yes, we have opened our minds to new levels of understanding, ecstatic, and philosophies of ethics, but they have remained on the shelves of our libraries,

³¹ Milligan, “Basic Methodology for Space Ethics,” 24.

be they classical paper based or cyber. Yes, we have developed technically since the time we discovered fire and the wheel. But we are still burning our hands with this fire, we are still the children who insist on touching the fire. This curiosity challenge is what makes us who we are and helps to develop us, and it is good. But to keep touching the flames of fire forever and crying about burned hands is ridiculous.

In the space age we must rethink our history, our presence, and understand that we cannot have our cake and eat it at the same time. We need to sit and face the current problems that we have on Earth and solve them now. If we do not do so, we will carry them on our shoulders with us to space. We will be doing what Prometheus and Sisyphus were condemned to do.³² In the case of Sisyphus, Zeus condemned him to carry a rock up a steep hill for eternity. The rock rolls back down the hill, and he has to roll it again and again. This was the punishment of the gods for Sisyphus for enlightening humans. But are we enlightened? Or we are to carry the heavy stone of violence and ignorance on our shoulders with us in this new space. I hope that I am wrong, and that we will open our eyes to the danger we are inflicting on ourselves.

Conclusion

In this space age, we humans have started a new journey into the endless abyss of the ultimate darkness and void of outer space. We human beings are endowed with consciousness of our existence and a sense of self-awareness, and this is limited by our language system (communication system and cognition). We humans have ventured into the place where the idea of divine and infinity is held in our centered universe. Throughout history, we have located the idea of ultimate holiness and the place of divinity in the unreachable high sky above us. Now we are all entering this sacred domain and palace of the gods, the holy of holies, where only the chief priest was allowed to enter (once every year on Yom Kippur in the Jewish tradition, as an example). How will this new exploration of space affect us consciously and cognitively, and will we survive the bright illumined glow of the god or gods in the heavens? This is a journey in which we will be the new space nomads, travelers asking the same old questions that were asked thousands of years ago. What is this around us? How did it start? Who are we? These questions are carried through our language.

In this tour, we have touched on many important questions of space ethics. The literature that we have covered has only dealt with the Judeo-Christian-based ethical system. They are the main Noahic prohibitions that have transformed us from pre-human, wild creatures, to cultured and then civilized human beings who are the justification for our present existence. **Reverence for life within ethical civilization** is the main cardinal pillar that sets us apart today from the savage nature of our history. By entering the new era of exploring space and becoming SHS, we will have to ask the old questions again.

³² Britannica, *Sisyphus: Greek Mythology*, January 6, 2023, www.britannica.com/topic/Sisyphus.

This time, we must forgo our egocentric demands that only we should benefit and gain. We are now in the new era of entering the realm we once considered reserved for gods, so are we becoming gods? Or are we modest and humble enough to understand that we are but guests in this vast universe, and we are just star dust. We may have other neighbors with whom we have yet to become acquainted. I hope that we do not repeat our mistakes of wiping out everything that seems to get in our way. The conditions we inherited are bound to hold some control over our destiny. This is not a pessimistic view but a reasonable understanding of who we are, and what our limits are.

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